_SAFETY_DATA_SHEETS_

CONTACTS
FIRE & EMERGENCY - #911
POISON CONTROL - #800-222-1222
Schepers Concrete Construction, LLC has safety as its top priority and we want ALL of our employees to consider safety as their top priority as well, not only for themselves but for fellow employees as well.

Each employee is responsible for safety. Most construction injuries are preventable. You do not need to suffer an injury in an attempt to get a job done quickly. When you notice an unsafe act or condition, correct it yourself at once or ask your supervisor to get it corrected. If you have any symptoms such as back pain, trouble breathing, dizziness or sharp pains, etc. please inform your foreman your foreman at once as these problems may affect your ability to do your task safely.

We must always keep channels of communication open in order to accomplish true safety. This means we must cooperate with a sincere desire, common sense and over all support of everyone on our crews. Talk is cheap, take action and follow through is an effective way to prevent accidents.

Schepers Concrete holds periodic safety meetings for all employees. It is mandatory that all are in attendance. Participate and don’t just show up. Contribute, and be a good example for the new employees who do not yet have the necessary experience for safety awareness. Please ask questions if you do not understand something.

Read all safety material given to you and be sure to read safety material provided by our suppliers regarding their materials.
General Safety Rules

All company safety rules must be obeyed. If you fail to do so, strict disciplinary action will be taken. If you disregard our safety rules, it will ultimately result in termination of your employment.

1. Keep your mind on work task at all times. No horseplay on the job at any time will be tolerated. Injury or termination of may be a result.
2. Wear personal protective equipment at all times. This includes but is not limited to safety glasses, hard hats, high visibility, gloves and protective footwear.
3. Wear long pants and keep shirt on at all times to prevent sunburn, protect against acid burns, cuts, etc.
4. If you should come in contact with an acid or caustic substance, flush with water at the nearest available source immediately, seek medical aid at once.
5. Do not run, watch where you put your feet when walking.
6. Violation of our drug and alcohol abuse policy will not be tolerated. If your doctor prescribes drugs which warn against driving or using machinery, let your foreman know.
7. Do not distract fellow workers from doing their work.
8. We will provide sanitation facilities for your use. Do not damage or deface them.
9. Keep your working area clean and free from rubbish and debris.
10. Never use a compressor to remove dust or debris from your body.
11. If you have a fear of heights or are subject to dizziness, no not work from an elevated location and inform your supervisor.
12. Know where firefighting equipment is located and learn how to use it.
13. If someone gets injured, do not attempt to move them unless it is absolutely necessary. Keep the injured person comfortable and use job site first aid until a medical professional arrives.
14. Use proper lifting techniques. Use your legs, not your back. If the load is too heavy get help from another worker.
15. Do not use the power tools until you have been properly instructed in safe work methods and you are authorized to use them. Keep the guards in place and do not remove any safety device.
16. Do not ride on loads, fenders, running boards or in bed of trucks.
17. Do not enter areas which have been roped off or barricaded.
18. Make sure operators can always see you when operating equipment.
19. Turn equipment off before doing any maintenance.
20. Rope off danger areas to keep other trades from entering.
21. Keep away from the edge of pits, trenches, holes, etc.
22. Keep out of trenches that have not been properly sloped or benched. Store excavated materials away from edge of any excavation.
23. Make sure ladder is properly sloped and extend 3’ above landing ensuing that the top is tied off.

10578 Linden Dr. NW, Grand Rapids, MI 49534 • Ph: 616-677-0053 • Fx: 616-677-0062 • info@schepersconcrete.com
24. Tag and remove any defective ladders
25. Keep base of ladder free of rubbish and debris.
26. Scaffold planks must be cleated or secured to prevent them from sliding and must be two planks wide. Always build scaffolds according to manufactures recommendations.
27. Only use extension cords with three prongs check electrical ground system and cords daily. Remove from service if any nicks or cuts are found.
28. Ground fault interrupters are to be used at all electrical outlets where ground fault interrupters do not exist.
29. Always use safety belts with safety lines when working from unprotected places. Use shortest line possible.
30. You must wear safety belts while operating, driving or riding in any company vehicles or equipment.
31. Never throw things over the edge of building. Someone may be passing below and could be seriously injured.
32. No open fires are allowed at any time.
33. Safety googles and ear protection are mandatory when cutting and chipping concrete.
34. Michigan occupational health standards require that certain specific precautions be employed before and during entry of a confined or enclosed space. Therefore, before entry of a confined space such as silo, sewer, tank or pit, contact the safety officer.
35. Know what the emergency procedures are for your job site.

Compliance with the safety rules and regulations under MIOSHA is mandatory!

Date: 9/4/14
Signature: [Signature]
Title: President
The primary responsibility of the employees of Schepers Concrete is to perform his or her duties in a safe manner in order to prevent injury to themselves and others.

As a condition of employment, employees MUST become familiar with, observe, and obey rules and established policies for health, safety, and preventing injuries while at work. Additionally, employees MUST learn the approved safe practices and procedures that apply to their work.

Before beginning special work or new assignments, an employee should review applicable and appropriate safety rules.

If an employee has any questions about how a task should be done safely, he or she is under instruction NOT to begin the task until he or she discusses the situation with his or her supervisor. Together, they will determine the safe way to do the job.

If, after discussing a safety situation with his or her supervisor, an employee still has questions or concerns, he or she is required to contact the Safety Coordinator.

NO EMPLOYEE IS EVER REQUIRED to perform work that he or she believes is unsafe, or that he or she think is likely to cause injury or a health risk to themselves or others.
Employee Safety Rules

1. Conduct: Horseplay, ‘practical jokes,’ etc., are forbidden. Employees are required to work in an injury-free manner displaying accepted levels of behavior. Conduct that places the employee or others at risk, or which threatens or intimidates others, is forbidden.

2. Drugs and Alcohol: Use and/or possession of illegal drugs or alcohol on company property or on company time are forbidden. Reporting for work while under the influence of illegal drugs or alcohol is forbidden.

3. Housekeeping: The following areas must remain clear of obstructions:
   Aisles/ exits
   Fire extinguishers and emergency equipment
   All electrical breakers, controls, and switches
   Eye wash/safety showers

You are responsible to keep your work area clean and safe. Clean-up several times throughout the day, disposing of trash and waste in approved containers, wiping up any drips/spills immediately, and putting equipment and tools away as you are finished with them.

4. Injury Reporting: All work-related injuries must be reported to your supervisor immediately. Failure to immediately report injuries can result in loss of Workers’ Compensation benefits. After each medical appointment resulting from a work-related injury, you must contact your supervisor to discuss your progress. You must also give your supervisor any paperwork that you received at the appointment.

Schepers Concrete provides Transitional Return to Work (light duty) jobs for persons injured at work. Transitional work is meant to allow the injured employee to heal under a doctor’s care while she/he remains productive. Employees are required to return to work immediately upon release.

5. Personal Protective Equipment (PPE): Inspect PPE prior to each use. Do not use damaged PPE. You are required to maintain and keep PPE clean.
   a) Safety Glasses – must be worn at all times in designated areas in this facility.
   b) Hard Hats – must be worn at all times in designated areas.
   c) Gloves – work gloves must be worn at all times when handling sharp or rough stock, welding, or performing other jobs, which could cause hand injuries. Synthetic gloves must be worn when handling chemicals.
   d) Welding – appropriate filter lens, welding helmet, gloves, and sleeves are required for welders at all times.
   e) Respirators – only employees trained and authorized to use respirators are allowed to do so.
   f) Hearing Protection – is required in areas where noise exposure is more than 90dBA (85dBA if you already have experienced a hearing loss).

6. Equipment Operation: You must specifically be trained and authorized by your supervisor to operate the following:

   Company vehicles,
   Forklifts,
   Machine and power tools,
   Paint sprayers,
   Welders, and Cranes/hoists
When operating machines: do not wear loose clothing, long hair should be tied up and back, remove jewelry, and sleeves should either be rolled all the way up, or all the way down.

Never operate damaged or defective equipment. Turn the machine off and report it to your supervisor immediately.

Never tamper with, remove, or deactivate machine guards or controls designed to ensure safe operations. Never reach into an operating machine or moving machine part.

7. Ladders:

   Inspect all ladders prior to each use;
   Ladders must be placed on secure footing;
   Only one person is allowed on a ladder at a time;
   Never stand on the top two steps of a stepladder;
   Always maintain 3-point contact when working on ladders;
   Never reach beyond arm length when working on a ladder; and Never use metal ladders when working on or around electrical equipment.

8. Cranes/Hoists/Lifting Devices:

   a) Inspect all cranes, hoists and lifting devices (slings, hooks, etc.) prior to each use. Never use damaged equipment.
   b) Never walk under a load suspended from a hoist or crane.
   c) Keep all personnel clear of the ‘fall zone’ of the crane/hoist.
   d) Know the weight of material being lifted. Never overload a crane/hoist.

9. Lockout/Tagout – prior to working on any machinery when guards are removed, every energy source (electrical, hydraulic, chemical, mechanical, etc.) must be deactivated, stored energy dissipated, and the control locked in the off (safe) position.

Never remove or tamper with a lockout performed by another employee or contractor. A lockout could consist of a lock applied to a control such as a switch, breaker, or valve. A tag containing words such as “DANGER - DO NOT OPERATE” may also be used for lockout. If you see the lock, the tag, or both applied to an energy control device it means, “Keep your hands off.”

10. Hazard Communication:
a) All chemical containers must be labeled to identify contents and hazards. Most labels use numbers to rank the hazard level in three important areas:
   - FIRE (red background color) - will the material burn?
   - HEALTH (blue background) - is the material dangerous to my body? - REACTIVITY
     (yellow background) - is the material dangerously unstable?

   After each hazard (Fire, Health, Reactivity), a number from 1-4 will be assigned. The number reflects the degree (or amount) of hazard:
   - 0 Minimal
   - 1 Slight
   - 2 Moderate
   - 3 Serious
   - 4 Severe

b) A Material Safety Data Sheet (MSDS) must be secured for all chemicals purchased or brought on site. You have a right to access MSDSs – ask your supervisor.

c) Follow all label and MSDS instructions – including amount instructions
d) Do not mix chemicals unless authorized to do so.

e) Keep all chemicals in closed containers.

f) Store all flammable liquids in safety cabinets or safety cans. Never use flammable chemicals around ignition sources such as smokers, pilot lights, or arcing/sparking electrical equipment.

g) Wear required Personal Protective Equipment and minimize contact with the chemical.

h) Do not eat, drink, or smoke while using chemicals. And always wash your hands after handling chemicals.

11. Confined Space Entry – Only trained and authorized employees are permitted to enter confined spaces. If you believe that your job requires confined space entry, contact your supervisor prior to undertaking the work. (Confined spaces are areas not meant for human occupancy, have limited means of entry/exit, and have electrical, chemical, thermal, atmosphere, or entrapment hazards).

12. Emergencies:

a) In the event of any serious injury or fire, call 911. Send someone to the facility entrance to meet the Fire Department. If in doubt, call 911.

b) Upon discovering a fire, alert others in immediate danger and initiate facility-wide fire alarm.

c) When the evacuation signal is given, all employees should immediately turn off equipment, close doors, and evacuate to their designated evacuation areas. Attendance will be taken to account for all personnel. Stay together in the group until further instructions are received.

d) Do not attempt to fight any fire which is uncontained, too hot, too smoky, or if you are too frightened.

e) To use a fire extinguisher, remember PASS:
   - P = Pull (the safety pin)
   - A = Aim (at the base of the fire)
   - S = Squeeze (the lever) S
   - S = Sweep (side to side)

If you use a fire extinguisher, remember:
   - Stay low,
   - Keep yourself between the fire and an exit,
   - Do not turn your back on a fire, and Immediately report the use to your supervisor.

d) Do not touch blood or any other bodily fluid during or following an incident. If you are trained to administer first aid, gloves and other barriers are located with the first aid equipment. If you think that you have been exposed to bodily fluid, notify your supervisor immediately.

13. Company Vehicles and Driver Safety:
a) Only employees authorized by Schepers Concrete are permitted to operate Schepers Concrete vehicles.

b) No ‘side trips’ or personal use of company vehicles are permitted.

c) Seat belts/shoulder harnesses must be worn whenever the vehicle is in motion.

d) All local and state traffic regulations and signs must be followed.

e) No unauthorized riders, hitchhikers, etc., are allowed.

f) All moving violations resulting in points being assigned to your license must be reported to your supervisor.

g) Driving while under the influence of alcohol or other drugs is forbidden.

- Employees driving their personal vehicles on company business must follow steps ‘c – g,’ shown above.

14. Electrical Safety:

a) Never operate or tamper with the electrical main switch or breakers. You are authorized only to operate switches/disconnects on/for individual machines.

b) Report all electrical problems and suspected problems to your supervisor.

c) All junction boxes, control boxes, connections, and other wiring must have covers securely installed to prevent accidental contact.

d) Inspect all plugs, cords, and portable equipment prior to use.

e) Report any damaged electrical equipment to your supervisor. Only authorized personnel are permitted to make repairs.

f) Extension cords are to be used only for temporary applications. Never stretch cords across aisles or areas where others may trip over them. Do not attach extension cords to the building or run them under rugs/mats or through walls.

g) Any personal electrical devices must be approved by Schepers prior to use.

15. Lifting:

a) If you need help moving material, request assistance.

b) When you lift, use your leg muscles by squatting close to the load, preserving the curve in your back, spreading your feet, and lifting with your legs, keeping the load close to your body.

c) When you turn holding an object, move your feet, and do not twist.

16. Staying Safe - Report any unsafe conditions or situations to your supervisor. If you have suggestions on improving any aspect of safety in the facility, discuss it. If you are unsure of how to operate a piece of equipment or complete an assignment, ask for help. Asking for help when you are unsure reduces the chance of injury.
These rules are established to help you stay safe and injury free. Violation of the above rules, or conduct that does not meet minimum accepted work standards, will result in discipline, up to and including discharge.

When working at a customer location, employees are required to follow the above rules, as well as all customer rules and procedures, and work in a manner that reflects positively on the company. Before operating any equipment at a customer location, permission must first be secured from the customer contact.

**Safety Coordinator Responsibilities**

**Introduction**

The term “concrete construction” includes a wide range of activities and structures from a back yard patio to a super highway, from a house basement to a 100-story building, from a golf course decorative bride to a 1,600-foot cable-stayed segmental concrete bride, from a lily pond to a double curved arch dam, from a paved ditch to a river levee, and the list could go on and on. No attempt is made to cover all the safety problems to be solved for every conceivable type and size of concrete project. Instead, this is intended only to make workers aware of the general safety requirements for concrete construction.

**Precautions when handling cement and concrete**

- Wear long trousers and long sleeved shirts when handling Portland cement, masonry cement, or fresh concrete.
- Use rubber gloves or protective cream to protect exposed skin surfaces.
- Wear proper eye and face protection and respirators when handling bulk cement.
- Wear rubber boots when working in wet concrete. Do not allow concrete inside the boots.
- Keep an adequate supply of clean, drinkable water (potable water) at locations where employees will be exposed to cement, fresh concrete, or cement dust.
- When fresh concrete comes in contact with skin, wash it off immediately with clean potable water. Employees should wash frequently with clean water to prevent skin irritation from exposure to concrete dust or cement.
- Do not use tool wash water as it may contain concrete contaminant.
- When dust or fresh concrete gets into someone’s eye(s), flush the eye(s) with clean, potable water thoroughly for at least 15 minutes. If irritation persists or damage exists, seek medical help immediately. Do not use tool wash water as it may contain concrete contaminant.

**Formwork**

Proper form lumber and supports should be selected. Formwork will be designed; preferably by a professional engineer, fabricated, erected, supported, braced and maintained so that it will be capable of supporting without failure all vertical and lateral loads that may reasonably be anticipated to be applied to the formwork. Factors that need to be considered are: full consideration of load factors, spans between supports, support, setting temperature, rate of pour, rate of strength gain, all temporary loads to be supported during placing, compacting, finishing, curing, and any other construction loads to be supported before, during, and after the forms are stripped.

Ramps: Forms for ramps and other sloping elements exert both lateral and vertical loads on formwork which must be taken into account in formwork design.
Housekeeping: Keep all areas on and around forms free of debris and construction materials at all times. Strip forms methodically and thoroughly. Remove all hardware, nails, screws, etc., and discard properly. Remove dismantled form members from the work area as soon as possible.

Fall Protection: All employees working at heights greater than six (6) ft. must be protected by guardrail, safety net, personal fall arrest system or safety monitoring system plan. There are exceptions or specific work categories. Full body harness, with lanyard, or lifeline, certified by ANSI, is the only acceptable personal fall arrest system. Body and safety belts should only be used as positioning devices.

Form Shoring Preparation: Inspect shoring equipment prior to, during, and after concrete placement. When installing shoring on surfaces other than concrete, mudsills, or pads will be used as specified by the formwork designer, to distribute the loads properly. Materials and equipment must meet the requirements in the specifications and on the formwork drawings. Damaged shoring should be repaired or removed from service immediately.

On Site Inspection: Erected shoring equipment should be inspected prior to, during, and immediately following the placing of the concrete. Shoring equipment found to be damaged or weakened after use should be properly repaired or replaced.

Form Stripping & Shoring Removal: Barricade tape or signs should be utilized to prevent unauthorized personnel from entering formwork stripping areas. Only workers actually engaged in form stripping should be allowed in the area during form removal.
Considerations Following a Serious Industrial Accident

Any work-related accident resulting in serious injury or the death of an employee presents significant emotional challenges for management. Following are some guidelines, which may reduce the effects on fellow employees and minimize the impact from regulators, such as OSHA.

1. Be prepared to talk to local police officials, district attorney investigators, coroners, and OSHA compliance officers. Be aware that police and district attorneys can conduct criminal investigations. Be truthful but do not speculate or offer unsolicited opinions, information, or theories. Also be prepared for contacts from local news media. Consult with legal advisors if in doubt. (Operate under the assumption that OSHA will investigate. Take steps to be sure that your entire facility is as prepared as possible).

2. Fatalities and incidents resulting in three or more employees receiving inpatient hospitalization must be reported within 8 hours to the closest OSHA area office. If after hours, the incident can be reported to OSHA at: 1-800-321-6742.

3. Have a representative of your company contact the employee’s next of kin to inform her/him of the circumstances. If possible, this contact should be made in person. Offer to provide transportation and/or other support.

4. Get all witnesses names. If some witnesses are not employees, be sure to get full addresses and phone numbers.

5. Render safe any hazards created by the accident scene. (i.e. material that may fall, leaking chemicals, etc.). Rope off or otherwise isolate the accident scene early on to prevent it from becoming a “tourist attraction.”

6. Conduct an initial investigation. If equipment and/or duties directly involved in the accident are duplicated elsewhere in the company, take immediate steps to assure that there will be no re-occurrence of the accident.

7. Take pictures to document the scene. Note anything that may help you identify specific equipment involved such as serial numbers, license plate numbers, etc.

8. Follow procedure for bloodborne pathogens in cleaning any bodily fluid spills.

9. Consider meeting with employees in small groups to discuss, in general terms:

   a) The serious accident that occurred.
   b) That all the necessary steps were taken to care for the person involved.
   c) That an accident investigation is being performed.
   d) That all employees will be kept informed.
   e) The availability of the Employee Assistance Program (EAP) (if applicable).
   f) Provide encouragement and request that employees work safely.
Employee Safety Handbook

10. Request your supervisors be alert for employees who may not be paying full attention to their jobs and thereby jeopardizing their own safety. During these discussions, do not discuss fault, discipline, opinions, etc.

Employee Acknowledgement Form

Schepers is firmly committed to your safety. We will do everything possible to prevent workplace accidents and are committed to providing a safe working environment for you and all employees.

We value you not only as an employee but also as a human being critical to the success of your family, the local community.

You are encouraged to report any unsafe work practices or safety hazards encountered on the job. All accidents/incidents (no matter how slight) are to be immediately reported to the supervisor on duty.

A key factor in implementing this policy will be the strict compliance to all applicable federal, state, local, and Schepers Concrete policies and procedures. Failure to comply with these policies may result in disciplinary actions.

Respecting this, Schepers Concrete will make every reasonable effort to provide a safe and healthful workplace that is free from any recognized or known potential hazards. Additionally, Schepers Concrete subscribes to these principles:

1. All accidents are preventable through implementation of effective Safety and Health Control policies and programs.

2. Safety and Health controls are a major part of our work every day.

3. Accident prevention is good business. It minimizes human suffering, promotes better working conditions for everyone, holds Schepers Concrete in higher regard with customers, and increases productivity. This is why Schepers will comply with all safety and health regulations which apply to the course and scope of operations.

4. Management is responsible for providing the safest possible workplace for Employees. Consequently, management of Schepers Concrete is committed to allocating and providing all of the resources needed to promote and effectively implement this safety policy.

5. Employees are responsible for following safe work practices, company rules, and for preventing accidents and injuries. Management will establish lines of communication to solicit and receive comments, information, suggestions, and assistance from employees where safety and health are concerned.

6. Management and supervisors of Schepers will set an exemplary example with good attitudes and strong commitment to safety and health in the workplace. Toward this end, management must monitor the company’s safety and health performance, working environment, and conditions to ensure that program objectives are achieved.

7. Our safety program applies to all employees and persons affected or associated in any way by the scope of this business. Everyone’s goal must be to constantly improve safety awareness and to prevent accidents and injuries.
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1. Identification

Product identifier used on the label

MasterKure CC 200WB also KURE N SEAL W

Recommended use of the chemical and restriction on use
Recommended use*: for industrial and professional users

* The "Recommended use" identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification
Chemical family: No data available.

2. Hazards Identification


Classification of the product
Resp. Sens. 1  Respiratory sensitization  Skin Sens. 1  Skin sensitization

Label elements

Pictogram:

Signal Word:  Danger

Hazard Statement:
H334  May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317  May cause an allergic skin reaction.

Precautionary Statements (Prevention):
P280  Wear protective gloves.
P261  Avoid breathing dust/fume/gas/mist/vapours/spray.
P284  [In case of inadequate ventilation] wear respiratory protection.
P272  Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):
P304 + P341 + P311  IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
P333 + P311  If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.
P303 + P352  IF ON SKIN (or hair): Wash with plenty of soap and water.
P362 + P364  Take off contaminated clothing and wash before reuse.

Precautionary Statements (Disposal):
P501  Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition / Information on Ingredients

**CAS Number** | **Content (W/W)** | **Chemical name**
---|---|---
770-35-1 | >= 3.0 - < 5.0 % | 1-phenoxypropan-2-ol
7727-54-0 | >= 0.0 - < 1.0 % | Peroxydisulfuric acid ((HO)S(O)2)2O2, diammonium salt


**CAS Number** | **Content (W/W)** | **Chemical name**
---|---|---
770-35-4 | >= 1.0 - <= 5.0 % | 1-phenoxypropan-2-ol

**General advice:**
First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

**If inhaled:**
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

**If on skin:**
After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

**If in eyes:**
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

**If swallowed:**
Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

**Most important symptoms and effects, both acute and delayed**
Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
Hazards: No applicable information available.

**Indication of any immediate medical attention and special treatment needed**

Note to physician

1. **First-Aid Measures**

   **Description of first aid measures**
5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
carbon dioxide, dry powder, water spray

Special hazards arising from the substance or mixture
Hazards during fire-fighting: carbon dioxide, carbon monoxide, harmful vapours, nitrogen oxides, fumes/smoke, carbon black

Advice for fire-fighters
Protective equipment for fire-fighting:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. If exposed to fire, keep containers cool by spraying with water. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Do not breathe vapour/aerosol/spray mists. Wear eye/face protection. If exposed to high vapour concentration, leave area immediately. Use personal protective clothing. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up
For small amounts: Pick up with inert absorbent material (e.g. sand, earth etc.). Dispose of contaminated material as prescribed. For large amounts: Pump off product.
7. Handling and Storage

**Precautions for safe handling**
Avoid aerosol formation. Avoid inhalation of mists/vapours. Avoid skin contact. No special measures necessary provided product is used correctly.

**Conditions for safe storage, including any incompatibilities**
No applicable information available.

Suitable materials for containers: High density polyethylene (HDPE)

Further information on storage conditions: Keep only in the original container in a cool, dry, wellventilated place away from ignition sources, heat or flame. Protect from direct sunlight. Protect from temperatures below: 5 °C
The packed product must be protected from temperatures below the indicated one.
Protect from temperatures below: 40 °F
The packed product must be protected from temperatures below the indicated one.

8. Exposure Controls/Personal Protection

**Advice on system design:**
No applicable information available.

**Personal protective equipment**

**Respiratory protection:**
When workers are facing concentrations above the occupational exposure limits they must use appropriate certified respirators.

**Hand protection:**
Wear chemical resistant protective gloves., Manufacturer’s directions for use should be observed because of great diversity of types.

**Eye protection:**
Safety glasses with side-shields.

**Body protection:**
Body protection must be chosen based on level of activity and exposure.

**General safety and hygiene measures:**
Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Avoid exposure - obtain special instructions before use. Handle in accordance with good building materials hygiene and safety practice. Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).
9. Physical and Chemical Properties

Form: liquid

Odour: acrylic-like

Odour threshold: No applicable information available.

Colour: white

pH value: 9.4
Melting point: 0 °C
Boiling point: 242.78 °C
Sublimation point: No applicable information available.
Flash point: 93.34 °C
Flammability: not highly flammable

Lower explosion limit: 0.7 %(V)
Upper explosion limit: 9.4 %(V)

Vapour pressure: No data available.
Density: 1.0327 g/cm³ (20 °C)
Relative density: 1.0327

Bulk density: not applicable
Vapour density: Heavier than air.
Partitioning coefficient noctanol/water (log Pow): No data available.

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

Viscosity, dynamic: No data available.
Viscosity, kinematic: No applicable information available.
Solubility in water: partly soluble
Solubility (quantitative): No applicable information available.
Solubility (qualitative): No applicable information available.
Evaporation rate: No applicable information available.

Other Information: If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing.
Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions
The product is stable if stored and handled as prescribed/indicated.

Conditions to avoid
See MSDS section 7 - Handling and storage.

Incompatible materials
strong oxidizing agents

Hazardous decomposition products

Decomposition products:
carbon oxides

Thermal decomposition:
No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure
Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Oral
No applicable information available.

Inhalation
No applicable information available.

Dermal
No applicable information available.

Assessment other acute effects No applicable information available.
**Irritation / corrosion**
Assessment of irritating effects: No applicable information available.

**Sensitization**
Assessment of sensitization: The product has not been tested. The statement has been derived from the properties of the individual components.
The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

**Chronic Toxicity/Effects**

**Repeated dose toxicity**
Assessment of repeated dose toxicity: No applicable information available.

**Genetic toxicity**
Assessment of mutagenicity: No applicable information available.

**Other Information**
The product has not been tested. The statement has been derived from the properties of the individual components.

**Symptoms of Exposure**
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

---

**12. Ecological Information**

**Toxicity**

Aquatic toxicity
Assessment of aquatic toxicity:
The product has not been tested.

**Bioaccumulative potential**

Assessment bioaccumulation potential
Discharge into the environment must be avoided.

**Mobility in soil**

Assessment transport between environmental compartments No data available.
13. Disposal considerations

Waste disposal of substance:
Dispose of in accordance with national, state and local regulations. Residues should be disposed of in the same manner as the substance/product. Do not discharge into drains/surface waters/groundwater.

Container disposal:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport
USDOT
Not classified as a dangerous good under transport regulations

Sea transport
IMDG
Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO
Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute;

<table>
<thead>
<tr>
<th>CERCLA RQ</th>
<th>CAS Number</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 LBS</td>
<td>123-91-1; 10031-43-3</td>
<td>1,4-dioxane; Nitric acid, copper(2+) salt, trihydrate</td>
</tr>
</tbody>
</table>
State regulations

CA Prop. 65:
WARNING: THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

NFPA Hazard codes:
Health : 1    Fire: 1    Reactivity: 0    Special:

HMIS III rating
Health: 1     Flammability: 1    Physical hazard: 0

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2015/01/15

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED
1. Product and Company Identification

Company
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

2. Hazards Identification

Emergency overview

WARNING:
COMBUSTIBLE.
HARMFUL IF INHALED.
SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS, LEADING TO ASTHMA-LIKE SPASMS OF THE
BRONCHIAL TUBES AND DIFFICULTY BREATHING. INDIVIDUALS WITH A HISTORY OF RESPIRATORY
ILLNESS, ASTHMATIC CONDITIONS, EYE DAMAGE OR TDI SENSITIZATION SHOULD NOT BE EXPOSED
TO THIS PRODUCT. TDI IS INCLUDED IN THE NTP ANNUAL REPORT ON CARCINOGENS. RESULTS
FROM A TDI HEALTH STUDY INDICATE THAT OVEREXPOSURE TO A RESPIRATORY IRRITANT,
RESULTING IN LOWER RESPIRATORY TRACT SYMPTOMS COULD INCREASE THE RISKS OF
DEVELOPING ASTHMA-LIKE REACTIONS FROM SUBSEQUENT TDI EXPOSURE.
CONTAINS MATERIAL WHICH MAY CAUSE CANCER.
Irritating to eyes, respiratory system and skin.
Avoid contact with the skin, eyes and clothing.
Avoid sources of ignition.
State of matter: liquid
Colour: pigmented
Odour: slight odour

**Potential health effects**

**Primary routes of exposure:**
Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

**Acute toxicity:**
Of very high toxicity after short-term inhalation. Virtually nontoxic after a single skin contact. Virtually nontoxic after a single ingestion.

**Irritation / corrosion:**
Irritating to eyes, respiratory system and skin.
Safety Data Sheet
MasterSeal SL 1 gry also SL1 GRY

Sensitization:
Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract.

Chronic toxicity:

Carcinogenicity: Contains a suspect carcinogen.

Repeated dose toxicity: Prolonged exposure may cause chronic effects. Overexposure may cause CNS depression including headache, dizziness, nausea and loss of consciousness.

Teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Genotoxicity: The substance was mutagenic in various bacterial test systems; however, a mutagenic effect could not be confirmed in mammalian cell culture.

Signs and symptoms of overexposure:
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Potential environmental effects:

Aquatic toxicity:
Acutely harmful for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Degradation / environmental fate:
The product is unstable in water. The elimination data also refer to products of hydrolysis.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Content (W/W)</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1317-65-3</td>
<td>10.0 - 30.0 %</td>
<td>Limestone</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>3.0 - 7.0 %</td>
<td>Titanium dioxide</td>
</tr>
<tr>
<td>14807-96-6</td>
<td>3.0 - 7.0 %</td>
<td>Talc</td>
</tr>
<tr>
<td>53306-54-0</td>
<td>1.0 - 5.0 %</td>
<td>bis(2-propylhexyl) phthalate</td>
</tr>
<tr>
<td>8052-41-3</td>
<td>1.0 - 6.0 %</td>
<td>Stoddard solvent</td>
</tr>
<tr>
<td>91-06-7</td>
<td>0.1 - 1.0 %</td>
<td>Toluene-2,6-diisocyanate</td>
</tr>
<tr>
<td>1333-86-4</td>
<td>0.1 - 1.0 %</td>
<td>Carbon black</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

General advice:
First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

If on skin:
After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:
Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.
5. Fire-Fighting Measures

Flash point: 81.5 °C (178.7 °F) (ASTM D3278)
Autoignition: not applicable
Flammability: not highly flammable

Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

Protective equipment for fire-fighting:
Wear a self-contained breathing apparatus.

6. Accidental release measures

Environmental precautions:
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Cleanup:
For small amounts: Pick up with inert absorbent material (e.g. sand, earth etc.). Dispose of contaminated material as prescribed.
For large amounts: Pump off product.

7. Handling and Storage

Handling
General advice:
Avoid aerosol formation. Avoid inhalation of mists/ vapours. Avoid skin contact. No special measures necessary provided product is used correctly.

Storage
General advice:
Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight.

8. Exposure Controls and Personal Protection

Components with occupational exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>carbon black</td>
<td>PEL 3.5 mg/m3 ;</td>
<td>TWA value 3.5 mg/m3 ;</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>OSHA PEL 15 mg/m3 Total dust ;</td>
<td>ACGIH TWA value 10 mg/m3 ;</td>
</tr>
<tr>
<td>Substance</td>
<td>OSHA</td>
<td>TWA Value</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
| Talc                      |                     | 20 millions of particles per cubic foot of air; 2.4 millions of particles per cubic foot of air | The value is calculated from a specified equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
|                           |                     | 0.1 mg/m³ | Respirable                                                                  |
|                           |                     |           |                                                                             |
|                           | ACGIH               | 2 mg/m³   | Respirable fraction; The value is for particulate matter containing no asbestos and <1% crystalline silica. |
| Toluene-2,6-diisocyanate  |                     | 0.005 ppm | STEL value 0.02 ppm; TWA value 0.005 ppm; STEL value 0.02 ppm; STEL value 0.02 ppm |
| Limestone                 |                     |           | PEL 5 mg/m³ Respirable fraction; PEL 15 mg/m³ Total dust                   |
Personal protective equipment

Respiratory protection:
Wear appropriate certified respirator when exposure limits may be exceeded.

Hand protection:
Wear chemical resistant protective gloves., Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Safety glasses with side-shields.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:
Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Avoid exposure - obtain special instructions before use. Handle in accordance with good building materials hygiene and safety practice. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>slight odour</td>
</tr>
<tr>
<td>Colour</td>
<td>pigmented</td>
</tr>
<tr>
<td>pH value</td>
<td>not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>approx. 0.97 g/cm³ (20 °C)</td>
</tr>
<tr>
<td>Density</td>
<td>not applicable</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>insoluble (15 °C)</td>
</tr>
<tr>
<td>Miscibility with water</td>
<td>not (e.g. &lt;10%) (20 °C)</td>
</tr>
</tbody>
</table>
10. Stability and Reactivity

Substances to avoid:
strong acids, strong bases, strong oxidizing agents

Hazardous reactions:
The product is stable if stored and handled as prescribed/indicated.

Decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

Oxidizing properties:
not fire-propagating

11. Toxicological information

Acute toxicity

Information on: Stoddard solvent
Assessment of acute toxicity:
Aspiration may result in chemical pneumonitis, which may be fatal.

Information on: toluene-2,6-diisocyanate
Assessment of acute toxicity:
Of very high toxicity after short-term inhalation. In animal studies the substance is virtually nontoxic after a single ingestion. In animal studies the substance is virtually nontoxic after a single skin contact. EU-classification

Irritation / corrosion

Information on: toluene-2,6-diisocyanate
Assessment of irritating effects:
Irritating to eyes and skin.

Sensitization

Information on: toluene-2,6-diisocyanate
Assessment of sensitization:
The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

Repeated dose toxicity

Information on: bis(2-propylheptyl) phthalate
Assessment of repeated dose toxicity:
Repeated exposure to high doses of the substance causes reversible liver changes in rodents. According to present knowledge, these effects do not occur in man.

Information on: Stoddard solvent
Assessment of repeated dose toxicity:
Overexposure may cause liver and kidney toxicity. Repeated exposures may result in pulmonary congestion.

Genetic toxicity

Information on: toluene-2,6-diisocyanate
The substance was mutagenic in various test systems with bacteria and cell cultures; however, these results could not be confirmed in tests with mammals. Literature data.
Carcinogenicity

Information on: Titanium dioxide
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans). In long-term studies in rats in which the substance was given by inhalation, a carcinogenic effect was observed. Tumors were only observed in rats after chronic inhalative exposure to high concentrations which caused sustained lung inflammation. In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed. Dermal exposure is not expected to be carcinogenic.
Information on: bis(2-propylheptyl) phthalate
In long-term studies in rodents exposed to high doses, a tumorigenic effect was found; however, these results are thought to be due to a rodent-specific liver effect that is not relevant to humans. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
Information on: toluene-2,6-diisocyanate
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).
Information on: carbon black
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans). In long-term animal studies in which the substance was given by inhalation in high concentrations, a carcinogenic effect was observed. A clear indication of an increased risk of cancer in humans has so far not been shown. No carcinogenic potential can be deduced from other studies with rats and mice.

Other Information:

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.
Information on: Stoddard solvent
In tests with mammals a central nervous system disorder was observed.

12. Ecological Information

Degradability / Persistence
Biological / Abiological Degradation
Evaluation: Poorly biodegradable.

Poorly biodegradable.
The product is unstable in water. The elimination data also refer to products of hydrolysis.

Other adverse effects:

Acutely harmful for aquatic organisms. Do not discharge product into the environment without control. The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:
Dispose of in accordance with national, state and local regulations. Recommendations: Use excess product in an alternate beneficial application.

Container disposal:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.
14. Transport Information

Land transport
USDOT

Classified as combustible liquid in containers greater than 119 gallons.

Sea transport
IMDG

Not classified as a dangerous good under transport regulations
15. Regulatory Information

Federal Regulations

Registration status:
Chemical: TSCA, US released / listed

OSHA hazard category: IARC 1, 2A or 2B carcinogen; NTP listed carcinogen; Chronic target organ effects reported; OSHA PEL established; ACGIH TLV established; Combustible Liquid

EPCRA 311/312 (Hazard categories): Acute; Chronic; Fire

<table>
<thead>
<tr>
<th>CERCLA RQ</th>
<th>CAS Number</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000 LBS</td>
<td>7664-38-2; 101-68-8</td>
<td>phosphoric acid; Diphenylmethane-4,4'-diisocyanate (MDI)</td>
</tr>
<tr>
<td>1000 LBS</td>
<td>108-88-3</td>
<td>Toluene</td>
</tr>
<tr>
<td>100 LBS</td>
<td>75-35-4; 107-13-1; 108-90-7; 75-28-5; 584-84-9; 91-08-7</td>
<td>1,1-dichloroethylene; acrylonitrile; chlorobenzene; Propane, 2-methyl-; toluene-2,4-diisocyanate; toluene-2,6-diisocyanate</td>
</tr>
</tbody>
</table>

State regulations

<table>
<thead>
<tr>
<th>State RTK</th>
<th>CAS Number</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA, NJ, PA</td>
<td>13463-67-7</td>
<td>Titanium dioxide</td>
</tr>
<tr>
<td>MA, NJ, PA</td>
<td>14807-96-6</td>
<td>talc</td>
</tr>
<tr>
<td>NJ, PA</td>
<td>53306-54-0</td>
<td>bis(2-propylheptyl) phthalate</td>
</tr>
<tr>
<td>MA, NJ, PA</td>
<td>8052-41-3</td>
<td>Stoddard solvent</td>
</tr>
<tr>
<td>MA, NJ, PA</td>
<td>91-08-7</td>
<td>toluene-2,6-diisocyanate</td>
</tr>
<tr>
<td>MA, NJ, PA</td>
<td>1333-86-4</td>
<td>carbon black</td>
</tr>
</tbody>
</table>

CA Prop. 65:
THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

16. Other Information
Safety Data Sheet
MasterSeal SL 1 gry also SL1 GRY

Revision date: 2012/11/30
Version: 1.1

HMS III rating
Health: 2
Flammability: 1
Physical hazard: 1

NFPA and HMS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates extreme danger. Although similar, the two rating systems are intended for different purposes, and use different criteria. The NFPA system was developed to provide an on-the-spot alert to the hazards of a material, and their severity, to emergency responders. The HMS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

MSDS Prepared by:
BASF NA Product Regulations

MSDS Prepared on: 2012/11/30

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREBIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY, BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

END OF DATA SHEET
PVC Waterstop
MATERIAL SAFETY DATA SHEET

Section I - PRODUCT IDENTIFICATION

Manufacturer: BoMetsals, Inc.
141 Hammond Street
Carrollton, GA 30117

Information Phone: 770-832-2000
Emergency Phone: 770-832-2000

Product Class: PVC COMPOUND
Trade Name: Waterstop
Product Code: Waterstop
C.A.S. Number: MIXTURE
MSDS Date: 3/27/03

Hazard Ratings:
Health – 1
Fire - 0
Reactivity - 0

SECTION II - HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>Weight</th>
<th>Exposure Limits</th>
<th>VP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinyl Chloride Polymer</td>
<td>9002-86-2</td>
<td>45-80</td>
<td>ACGIH/TLV</td>
<td></td>
</tr>
<tr>
<td>Inert Fillers</td>
<td></td>
<td>0-40</td>
<td>OSHA/PEL</td>
<td></td>
</tr>
<tr>
<td>Heat Stabilizer</td>
<td></td>
<td>3-10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plasticizer</td>
<td></td>
<td>0-60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorant</td>
<td></td>
<td>0-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flame Retardant</td>
<td></td>
<td>0-20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This product in its purchased form is not subject to SARA 302 or 311/312 reporting

*Toxic chemical as defined by OSHA, 29CFR 1910.1200 and subject to SARA Title III, Section 313 reporting requirements.

SECTION III - PHYSICAL DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Range:</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>Non Volatile</td>
</tr>
<tr>
<td>Volatiles, vol. %&lt;0.005</td>
<td>Wgt % &lt;0.005</td>
</tr>
<tr>
<td>Appearance:</td>
<td>Opaque Profile Lengths &lt;0.01%</td>
</tr>
<tr>
<td>V.O.C.:</td>
<td></td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>Non Volatile</td>
</tr>
<tr>
<td>Liquid Density:</td>
<td>Heavier than Water</td>
</tr>
<tr>
<td>Spec. Gravity:</td>
<td>1.40</td>
</tr>
</tbody>
</table>
SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 1  
Flash Point: >600°F  
LEL: NONE  
UEL: 0.00%

-EXTINGUISHING MEDIA:
  Carbon dioxide – Dry Chemical – Foam – Water

-SPECIAL FIREFIGHTING PROCEDURES:
Wear self-contained breathing apparatus (SCBA) in positive pressure mode. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to combustion gases from any source. In enclosed or poorly ventilated areas, wear SCBA during cleanup immediately after a fire as well as during the attack phase of fire fighting operations.

-UNUSUAL FIRE AND EXPLOSION HAZARDS:
  Combustion of PVC Products liberates hydrogen chloride (HCl) gas.

Section V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:
  N/A

-EFFECTS OF OVEREXPOSURE:
  Breathing: At processing temperatures, flexible PVC may release vapors which can be mildly irritating to some persons. This can be controlled by proper ventilation.
  Skin: Thermal burns will occur if molten compound comes in contact with unprotected skin.

-FIRST AID:
  Skin: Treat burns the same as any other thermal burn.
  Breathing: Move affected person to fresh air. If breathing is difficult, administer oxygen. Get medical attention if difficulty persists.

Section VI - REACTIVITY DATA

STABILITY: ( ) Unstable  (x) Stable
HAZARDOUS POLYMERIZATION: ( ) May occur  (x) Will not occur
-INCOMPATIBILITY:
  Stable

-CONDITIONS TO AVOID:
  Combustion or decomposition liberates hydrogen chloride gas.

-HAZARDOUS DECOMPOSITION PRODUCTS:
  HCl, CO2, CO

Section VII - SPILL OR LEAK PROCEDURES

- STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
  Sweep up and return to container.

-WASTE DISPOSAL METHOD:
  Landfill disposal is usually acceptable; check current local, state and federal regulations.
RESPIRATORY PROTECTION:

With adequate ventilation consistent with good industrial workplace practices, there should be no need to use a respirator during normal processing of flexible PVC; however, if air monitoring results show concentrations exceeding those limits listed for chemicals in Section II, wear a NIOSH/MSHA-approved respirator specific for those chemicals. Comply with OSHA 1910.134 (29 CFR)
-VENTILATION:
   Provide sufficient mechanical (general and/or local exhaust) ventilation to afford good air-exchange in the
   workplace consistent with good industrial hygiene practices.

-PROTECTIVE GLOVES:
   Heat insulating.

-EYE PROTECTION:
   The wearing of safety glasses is consistent with good industrial safety practices.

-OTHER PROTECTIVE EQUIPMENT:
   NONE

Section IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
   Wash with soap and water after handling.

-OTHER PRECAUTIONS:
   Avoid breathing decomposition products.

USER'S RESPONSIBILITY
   This MSDS cannot cover all possible situations the user may experience during processing. Each aspect of
   the user’s operation should be examined to determine if additional precautions may be necessary. All
   health and safety information contained herein should be provided to the user’s employees. The user must
   be relied upon to utilize this information to develop appropriate work practice guidelines and employee
   instructional programs for his operation. Test all end uses thoroughly to assure appropriate material
   selection.

DISCLAIMER OF LIABILITY
   DISCLAIMER OF LIABILITY
   Since the conditions or methods of use are beyond our control, BoMetals, Inc. does not assume any
   responsibility and expressly disclaims any liability for any use of this material. Information contained herein
   relates only to environmental, health and safety of the product and is not intend to be relied upon as
   technical specifications for commercial purposes. This MSDS is believed to be true and accurate but all
   statements or suggestions are made without warranty, expressed or implied, regarding the accuracy of the
   information, the hazards connected with the use of the material or the results to be obtained from the use
   thereof. Compliance with all applicable federal, state and local laws and regulations remains the
   responsibility of the user.
# SAFETY DATA SHEET

## Section 1. Identification

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Diesel Fuel No. 2</td>
</tr>
<tr>
<td>Chemical name</td>
<td>Fuels, diesel</td>
</tr>
<tr>
<td>SDS #</td>
<td>11155</td>
</tr>
<tr>
<td>Code</td>
<td>11155</td>
</tr>
</tbody>
</table>

### Relevant identified uses of the substance or mixture and uses advised against

- **Product use**: Fuel.
- **Supplier**: BP Products North America Inc.  
  150 West Warrienne Road  
  Naperville, Illinois 60563-8460  
  USA
- **EMERGENCY HEALTH INFORMATION**:  
  1 (800) 447-8735  
  Outside the US: +1 703-527-3887 (CHEMTREC)
- **EMERGENCY SPILL INFORMATION**:  
  1 (800) 424-9300 CHEMTREC (USA)
- **OTHER PRODUCT INFORMATION**:  
  1 (866) 4 BP - MSDS  
  (866-427-6737 Toll Free - North America)  
  email: bpcares@bp.com

## Section 2. Hazards identification

- **OSHA/HCS status**: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- **Classification of the substance or mixture**:  
  - FLAMMABLE LIQUIDS - Category 4  
  - ACUTE TOXICITY (inhalation) - Category 4  
  - SKIN IRRITATION - Category 2  
  - CARCINOGENICITY - Category 2  
  - ASPIRATION HAZARD - Category 1

### GHS label elements

- **Hazard pictograms**: ![Pictogram]

- **Signal word**: Danger
- **Hazard statements**:  
  - Combustible liquid.  
  - Harmful if inhaled.  
  - Causes skin irritation.  
  - Suspected of causing cancer.  
  - May be fatal if swallowed and enters airways.

### Precautionary statements

- **Prevention**: Keep away from heat, sparks, open flames and hot surfaces. - No smoking.  
  Do not breathe vapor.  
  Wear protective gloves and eye protection.  
  Avoid release to the environment.
Section 2. Hazards identification

Response
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs, seek medical advice/attention.

Storage
Store locked up. Store in a well-ventilated place. Keep cool.

Disposal
Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified
This material may contain significant quantities of polycyclic aromatic hydrocarbons (PAHs), some of which have been shown by experimental studies to induce skin cancer.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See "Notes to physician" under First-Aid Measures, Section 4 of this Safety Data Sheet.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates (Diesel Fuel No. 2)</td>
<td>68476-34-8</td>
<td>95 - 100</td>
</tr>
<tr>
<td>Contains one or more of the following biodiesels: soybean oil, me ester</td>
<td>Varies</td>
<td>0 - 5</td>
</tr>
<tr>
<td>Fatty acids, sunflower-oil, Me esters</td>
<td>67784-80-9</td>
<td></td>
</tr>
<tr>
<td>Fatty acids methyl esters</td>
<td>68991-54-0</td>
<td></td>
</tr>
<tr>
<td>Fatty acids, vegetable-oil, Methyl esters</td>
<td>68990-52-3</td>
<td></td>
</tr>
<tr>
<td>rape oil, me ester</td>
<td>73891-99-3</td>
<td></td>
</tr>
<tr>
<td>Fatty acids, canola-oil, Me esters</td>
<td>129828-16-6</td>
<td></td>
</tr>
<tr>
<td>fatty acids, tailow, me esters</td>
<td>61788-61-2</td>
<td></td>
</tr>
<tr>
<td>Contains: Naphthalene</td>
<td>91-20-3</td>
<td>1 - 3</td>
</tr>
<tr>
<td>May also contain small quantities of proprietary performance additives.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Inhalation
If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

Ingestion
Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Protection of first-aiders
No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Most important symptoms/effects, acute and delayed
See Section 11 for more detailed information on health effects and symptoms.
Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician
Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Specific treatments
No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media
Suitable extinguishing media
In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media
Do not use water jet.

Specific hazards arising from the chemical
Flammable liquid and vapor. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous combustion products
Combustion products may include the following: carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide) other hazardous substances.

Special protective actions for fire-fighters
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters
Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

For emergency responders
Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Collect spillage.

Methods and materials for containment and cleaning up

Small spill
Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.
Section 6. Accidental release measures

Large spill
Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures
Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth.

Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry to any tanks or other confined space requires a full risk assessment and appropriate control measures to be put in place in conformance with appropriate regulations and industry practice on confined space entry. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapor mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurized fuel pipes, the vapor or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.
Section 8. Exposure controls/personal protection

Control parameters

### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuel, diesel no. 2</td>
<td>ACGIH TLV (United States). Absorbed through skin. TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor</td>
</tr>
</tbody>
</table>

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

### Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Recommended: Chemical splash goggles.

#### Skin protection

Wear chemical resistant gloves. Nitrile gloves.

#### Hand protection

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.
Section 8. Exposure controls/personal protection

**Body protection**
Use of protective clothing is good industrial practice. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g., when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Wear suitable protective clothing. Footwear highly resistant to chemicals. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static. When there is a risk of ignition wear inherently fire resistant protective clothes and gloves. Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes. When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: overall

**Other skin protection**
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: nitrile rubber

**Respiratory protection**
Use only with adequate ventilation. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.

If operating conditions cause high vapor concentrations or the TLV is exceeded, use NIOSH-certified, supplied-air respirator.

Use with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

**Appearance**
- **Physical state**: Liquid.
- **Color**: Colorless. to Various Color. (May be dyed Red., Light Green., Yellow. )
- **Odor**: Petroleum
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point**: Not available.
- **Boiling point**: Not available.
- **Flash point**: Closed cup: ≥52°C (≥125.6°F) [Pensky-Martens.]
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not applicable. Based on - Physical state
- **Lower and upper explosive (flammable) limits**
  - Lower: 0.6%
  - Upper: 7.5%
- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Density**: 820 to 875 kg/m³ (0.82 to 0.875 g/cm³)
- **Relative density**: <1 [Water = 1]
Section 9. Physical and chemical properties

Solubility
negligible <0.1%

Partition coefficient: n-octanol/water
Not available.

Auto-ignition temperature
257°C (494°F)

 Decomposition temperature
Not available.

Viscosity
Kinematic: 1.7 to 4.1 mm²/s (1.7 to 4.1 cSt) at 40°C

Section 10. Stability and reactivity

Reactivity
No specific test data available for this product. Refer to Conditions to avoid and incompatible materials for additional information.

Chemical stability
The product is stable.

Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid
Avoid all possible sources of ignition (spark or flame).

Incompatible materials
Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis, halogenated compounds.

Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
<th>Exposure</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>diesel no. 2 fuel</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>4.1 mg/l</td>
<td>4 hours</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;4300 mg/kg</td>
<td>-</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;4300 mg/kg</td>
<td>-</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>17900 mg/kg</td>
<td>-</td>
<td>Based on No. 2 Heating Oil.</td>
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<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7600 mg/kg</td>
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<td>Based on Diesel fuel</td>
</tr>
<tr>
<td>naphthalene</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>&gt;340 mg/m²</td>
<td>1 hours</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>20 g/kg</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>490 mg/kg</td>
<td>-</td>
<td>-</td>
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</table>

Conclusion/Summary

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Species</th>
<th>Result</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation Conc.</th>
<th>Remarks</th>
</tr>
</thead>
</table>

Product name: Diesel Fuel No. 2
Product code: 11155
Page: 7/15

Version 1
Date of issue 01/06/2015.
Format US
Language ENGLISH (US)
## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuel, diesel no. 2</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
<td>Based on Diesel fuel</td>
</tr>
</tbody>
</table>

### Sensitizer

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuel, diesel no. 2</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
<td>Based on No. 2 Heating Oil.</td>
</tr>
<tr>
<td></td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
<td>Based on Diesel fuel</td>
</tr>
</tbody>
</table>

### Mutagenicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Experiment</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalent to OECD 476</td>
<td></td>
<td>Experiment: In vitro</td>
<td>Positive</td>
<td>Based on Hydrodesulfurized gas oil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subject: Mammalian-Animal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OECD 471</td>
<td></td>
<td>Experiment: In vitro</td>
<td>Positive</td>
<td>Based on Diesel fuel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subject: Non-mammalian species</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equivalent to OECD 471</td>
<td></td>
<td>Experiment: In vitro</td>
<td>Positive</td>
<td>Based on Cracked gas oil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subject: Non-mammalian species</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equivalent to OECD 476</td>
<td></td>
<td>Experiment: In vitro</td>
<td>Negative</td>
<td>Based on Heating Oil.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subject: Mammalian-Animal Cell: Germ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>not guideline 475</td>
<td></td>
<td>Experiment: In vivo</td>
<td>Negative</td>
<td>Based on Heating Oil.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subject: Unspecified Cell: Somatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equivalent to OECD 475</td>
<td></td>
<td>Experiment: In vivo</td>
<td>Negative</td>
<td>Based on Gas oil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subject: Unspecified Cell: Germ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Conclusion/Summary

Not available.

### Carcinogenicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Dermal</th>
<th>Years</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuel, diesel no. 2</td>
<td></td>
<td>Dermal</td>
<td>2</td>
<td>Positive - Dermal - Unspecified</td>
<td>Based on Heating Oil.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Positive - Dermal - Unspecified</td>
<td>Limited relevance to man. (Based</td>
</tr>
</tbody>
</table>

---

**Product name**: Diesel Fuel No. 2  
**Product code**: 11155  
**Page**: 8/15  
**Version**: 1  
**Date of issue**: 01/06/2015.  
**Format**: US  
**Language**: ENGLISH
Section 11. Toxicological information

Conclusion/Summary
Suspected of causing cancer.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>naphthalene</td>
<td>-</td>
<td>2B</td>
<td>Reasonably anticipated to be a human carcinogen.</td>
</tr>
</tbody>
</table>

OSHA:
+ - Potential occupational carcinogen

IARC:
1 - Carcinogenic to human.
2A - Probable human carcinogen.
2B - Possible carcinogen to human.
3 - Not classifiable as a human carcinogen.
4 - Probably not a human carcinogen.

NTP:
Proven - Known to be human carcinogens.
Possible - Reasonably anticipated to be human carcinogens.

Reproductive toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Maternal toxicity</th>
<th>Fertility</th>
<th>Development toxin</th>
<th>Species</th>
<th>Result</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuel, diesel no. 2</td>
<td>-</td>
<td>-</td>
<td>Negative</td>
<td>Rat</td>
<td>Dermal</td>
<td>20 days</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>Negative</td>
<td>Rat</td>
<td>Dermal</td>
<td>10 days</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>Negative</td>
<td>Rat</td>
<td>Dermal</td>
<td>10 days</td>
</tr>
</tbody>
</table>

Conclusion/Summary
Development: Not classified. Based on available data, the classification criteria are not met.
Fertility: Not classified. Based on available data, the classification criteria are not met.
Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuel, diesel no. 2</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact
No known significant effects or critical hazards.

Skin contact
Causes skin irritation.

Inhalation
Harmful if inhaled.

Ingestion
Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact
Adverse symptoms may include the following:
pain or irritation
watering
redness

Skin contact
Adverse symptoms may include the following:
irritation
redness

Inhalation
Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Product name: Diesel Fuel No. 2
Product code: 11155
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Format: US
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### Section 11. Toxicological information

**Ingestion**  
Adverse symptoms may include the following: nausea or vomiting.

#### Delayed and immediate effects and also chronic effects from short and long term exposure

**Short term exposure**

- **Potential immediate effects**: May be harmful by inhalation if exposure to vapor, mists or fumes resulting from thermal decomposition products occurs. Vapor, mist or fume may irritate the nose, mouth and respiratory tract.
- **Potential delayed effects**: Not available.

**Long term exposure**

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Potential chronic health effects**

- **General**: May be harmful by inhalation if exposure to vapor, mists or fumes resulting from thermal decomposition products occurs. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
- **Carcinogenicity**: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- **Mutagenicity**: No known significant effects or critical hazards.
- **Teratogenicity**: No known significant effects or critical hazards.
- **Developmental effects**: No known significant effects or critical hazards.
- **Fertility effects**: No known significant effects or critical hazards.

#### Numerical measures of toxicity

**Acute toxicity estimates**

Not available.

**Other information**

Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

**Additional information**

Middle distillate: From skin-painting studies of petroleum distillates of similar composition and distillate range, it has been shown that these types of materials often possess weak carcinogenic activity in laboratory animals. In these tests, the material is painted on the shaved backs of mice twice a week for their lifetime. The material is not washed off between applications. Therefore, there may be a potential risk of skin cancer from prolonged or repeated skin contact with this product in the absence of good personal hygiene. This particular product has not been tested for carcinogenic activity, but we have chosen to be cautious in light of the findings with other distillate streams.

Occasional skin contact with this product is not expected to have serious effects, but good personal hygiene should be practiced and repeated skin contact avoided. This product can also be expected to produce skin irritation upon prolonged or repeated skin contact. Personal hygiene measures taken to prevent skin irritation are expected to be adequate to prevent risk of skin cancer.

Diesel exhaust particulates have been classified by the National Toxicological Program (NTP) to be a reasonably anticipated human carcinogen. Exposure should be minimized to reduce potential risk.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.
### Section 12. Ecological information

**Toxicity**

No testing has been performed by the manufacturer.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Micro-organism</th>
<th>Test/Result</th>
<th>Exposure</th>
<th>Effects</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>fuel, diesel no. 2</td>
<td>Micro-organism</td>
<td>EL50 &gt;1000 mg/l Nominal Fresh water</td>
<td>40 hours</td>
<td>growth inhibition</td>
<td>Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel</td>
</tr>
<tr>
<td>Algae</td>
<td>Acute EL50 22 mg/l Nominal Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Daphnia</td>
<td>Acute EL50 210 mg/l Nominal Fresh water</td>
<td>48 hours</td>
<td>Mobility</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Daphnia</td>
<td>Acute EL50 68 mg/l Nominal Fresh water</td>
<td>48 hours</td>
<td>Mobility</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>Acute ErL50 78 mg/l Nominal Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>Acute LL50 65 mg/l Nominal Fresh water</td>
<td>96 hours</td>
<td>Mortality</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>Acute LL50 21 mg/l Nominal Fresh water</td>
<td>96 hours</td>
<td>Mortality</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>Acute NOELR 10 mg/l Nominal Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>Acute NOELR 10 mg/l Nominal Fresh water</td>
<td>72 hours</td>
<td>(growth rate)</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Daphnia</td>
<td>Acute NOELR 46 mg/l Nominal Fresh water</td>
<td>48 hours</td>
<td>Mobility</td>
<td>Based on Diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>Chronic NOELR 0.083 mg/l Nominal Fresh water</td>
<td>14 days</td>
<td>Mortality</td>
<td>Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel</td>
<td></td>
</tr>
<tr>
<td>Daphnia</td>
<td>Chronic NOELR 0.2 mg/l Nominal Fresh water</td>
<td>21 days</td>
<td>Immobilization</td>
<td>Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel</td>
<td></td>
</tr>
<tr>
<td>naphthalene</td>
<td>Algae</td>
<td>EC50 0.4 mg/l</td>
<td>96 hours</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Crustaceans</td>
<td>EC50 2.16 mg/l</td>
<td>48 hours</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Section 12. Ecological information

Conclusion/Summary
Not available.

Persistence and degradability
Not available.

Bioaccumulative potential
This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (Koc)  Not available.

Mobility  Spillages may penetrate the soil causing ground water contamination.

Other ecological information  Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods  The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Status</th>
<th>Reference number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Listed</td>
<td>U165</td>
</tr>
</tbody>
</table>

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>NA1993</td>
<td>UN1202</td>
<td>UN1202</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Diesel fuel</td>
<td>Gas oil</td>
<td>Gas oil</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>Combustible liquid.</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Packing group  III  III  III  III

Product name  Diesel Fuel No. 2  Product code  1155  Page: 12/15
Version  1  Date of issue  01/06/2015.  Format  US  Language  ENGLISH (US)  (ENGLISH)
### Section 14. Transport information

<table>
<thead>
<tr>
<th>Environmental hazards</th>
<th>No.</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity.</td>
</tr>
</tbody>
</table>

**Reportable quantity**

- 100 lbs / 45.4 kg [14.152 gal / 53.569 L]
- Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

- The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- **Emergency schedules** *(EmS)*
  - F-E, S-E

- The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user** Not available.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Proper shipping name MARPOL Annex 1 rules apply for bulk shipments by sea.

Category: gas oils, including ship's bunkers

### Section 15. Regulatory information

**U.S. Federal regulations**

- **United States inventory (TSCA 8b)** All components are listed or exempted.
- **SARA 302/304**
- **Composition/information on ingredients**
  - No products were found.
- **SARA 311/312**
  - **Classification**
    - Fire hazard
    - Immediate (acute) health hazard
    - Delayed (chronic) health hazard
- **SARA 313**

---

**Product name**: Diesel Fuel No. 2  
**Product code**: 11155  
**Version**: 1  
**Date of issue**: 01/06/2015  
**Format**: US  
**Language**: ENGLISH
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>naphthalene</td>
<td>91-20-3</td>
</tr>
<tr>
<td>Supplier notification</td>
<td>naphthalene</td>
<td>91-20-3</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts
The following components are listed: NAPHTHALENE

New Jersey
The following components are listed: NAPHTHALENE; MOTH FLAKES

Pennsylvania
The following components are listed: NAPHTHALENE

California Prop. 65
**WARNING:** This product contains a chemical known to the State of California to cause cancer.
- naphthalene; cumene; ethylbenzene; cumene; Propylene oxide; benzo[a]pyrene

**WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
- Toluene; Methanol

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.
- Benzene

Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including diesel exhaust, a Prop 65 carcinogen, and carbon monoxide, a Prop 65 reproductive toxin.

Other regulations

Australia inventory (AICS)
At least one component is not listed.

Canada inventory
Not determined.

China inventory (IECSC)
At least one component is not listed.

Japan inventory (ENCS)
At least one component is not listed.

Korea inventory (KECI)
At least one component is not listed.

Philippines inventory (PICCS)
At least one component is not listed.

Taiwan inventory (CSNN)
Not determined.

REACH Status
For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

- **Health**
  - Rating: 2

- **Flammability**
  - Rating: 2

- **Physical hazards**
  - Rating: 0

- **Personal protection**
  - Rating: X

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

- Flammability
  - Rating: 4

- Health
  - Rating: 2

- Instability/Reactivity
  - Rating: 0

- Special
Section 16. Other information

History
Date of issue/Date of revision 01/06/2015.
Date of previous issue 01/06/2015.
Key to abbreviations
ACGIH = American Conference of Industrial Hygienists
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS Number = Chemical Abstracts Service Registry Number
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
OEL = Occupational Exposure Limit
SDS = Safety Data Sheet
STEL = Short term exposure limit
TWA = Time weighted average
UN = United Nations
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

 ADVISED INFORMATION THAT HAS CHANGED FROM PREVIOUSLY ISSUED VERSION.

Notice to reader
All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user’s obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.
SAFETY DATA SHEET

1. Identification

Product identifier: WATERSTOP-RX®
Other means of identification: Not available.
Recommended use: Not available.
Recommended restrictions: Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer
Company name: CETCO, an MTI Company
Address: 2870 Forbs Avenue
Hoffman Estates, IL 60192
United States
Telephone: General Information 800 527-9948
Website: http://www.cetco.com/
E-mail: safety.data@amcol.com
Emergency phone number: .

America: 1.866.519.4752 (US, Canada, Mexico) 1 760 476 3962 Access Code 333562

2. Hazard(s) identification

Physical hazards: Not classified.
Health hazards: Not classified.
Environmental hazards: Not classified.
OSHA defined hazards: Not classified.
Label elements:
- Hazard symbol: None.
- Signal word: None.
- Hazard statement: The mixture does not meet the criteria for classification.
  Prevention: Observe good industrial hygiene practices.
  Response: If exposed or concerned: Get medical advice/attention.
  Storage: Store away from incompatible materials.
  Disposal: Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC): None known.
Supplemental information: Not applicable.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBON BLACK</td>
<td></td>
<td>1333-86-4</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

Other components below reportable levels 90 - 100

Impurities

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUARTZ</td>
<td>14808-60-7</td>
<td></td>
</tr>
</tbody>
</table>

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.
### Composition comments

Occupational Exposure Limits for impurities are listed in Section 8. This product contains naturally occurring crystalline silica (not listed in Annex I of Directive 67/548/EEC) in quantities less than 6%.

### 4. First-aid measures

**Inhalation**
Not likely, due to the form of the product. Get medical attention, if needed.

**Skin contact**
No specific first aid measures noted. Wash with water and soap as a precaution.

**Eye contact**
Flush eyes immediately with large amounts of water. If irritation persists get medical attention.

**Ingestion**
Not likely, due to the form of the product. If ingestion of a large amount does occur, seek medical attention.

**Most important symptoms/effects, acute and delayed**
Direct contact with eyes may cause temporary irritation.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically.

**General information**
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

**Suitable extinguishing media**
Water fog. Foam. Dry chemical powder. Dry chemical, CO2, water spray or regular foam. Carbon dioxide (CO2). Use any media suitable for the surrounding fires.

**Unsuitable extinguishing media**
None known.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
In the event of fire, wear self-contained breathing apparatus.

**Fire-fighting equipment/instructions**
In the event of fire, cool tanks with water spray.

**Specific methods**
Cool containers exposed to flames with water until well after the fire is out. In the event of fire and/or explosion do not breathe fumes.

**General fire hazards**
Not a fire hazard. No unusual fire or explosion hazards noted.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
For waste disposal, see section 13 of the SDS.

**Environmental precautions**
None known.

### 7. Handling and storage

**Precautions for safe handling**
Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment.

**Conditions for safe storage, including any incompatibilities**
No special restrictions on storage with other products. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Keep in a cool, well-ventilated place.

### 8. Exposure controls/personal protection

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBON BLACK (CAS 1333-86-4)</td>
<td>PEL</td>
<td>3.5 mg/m³</td>
</tr>
</tbody>
</table>

**Additional components**

| INERT OR NUISANCE DUSTS (CAS SEQ250) | PEL | 5 mg/m³ | Respirable fraction. |

<table>
<thead>
<tr>
<th>US. OSHA Table Z-3 (29 CFR 1910.1000)</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INERT OR NUISANCE</td>
<td>TWA</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>
DUSTS
(CAS SEQ250)

15 mg/m³ Total dust.
50 mppcf Total dust.
15 mppcf Respirable fraction.

<table>
<thead>
<tr>
<th>Impurities</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.3 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Impurities</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUARTZ</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td>QUARTZ</td>
<td>TWA</td>
<td>2.4 mppcf</td>
<td>Respirable.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBON BLACK (CAS 1333-86-4)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBON BLACK (CAS 1333-86-4)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Exposure guidelines
Some of the components of this product are hazardous in the respirable form. However, because of the physical nature of this product, dust generation is not expected.

Appropriate engineering controls
If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment

Eye/face protection
Eye wash fountain is recommended. Wear safety glasses; chemical goggles for fumes which may arise from thermal processing.

Hand protection
For prolonged or repeated skin contact use suitable protective gloves.

Other
When material is heated, wear gloves to protect against thermal burns.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA approved respiratory protection must be provided.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Use good industrial hygiene practices in handling this material.

9. Physical and chemical properties

Appearance

Physical state: Solid.
Form: Solid.
Color: Black or red.
Odor: Not available.
Odor threshold: Not available.

pH: Not available.

Melting point/freezing point: Not available.

Initial boiling point and boiling range: Not available.

Flash point: Not available.

Evaporation rate: Not available.

Flammability (solid, gas): Not available.

Upper/lower flammability or explosive limits:

Flammability limit - lower (%): Not available.

Flammability limit - upper (%): Not available.
Explosive limit - lower (%) Not available.
Explosive limit - upper (%) Not available.

Vapor pressure 0 hPa estimated
Vapor density Not available.
Relative density Not available.

Solubility(ies)
Solubility (water) Not available.
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.

Other information
Density 1.80 g/cm³ estimated
Percent volatile 0 % estimated estimated
Specific gravity 1.8 estimated

10. Stability and reactivity
Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Stable at normal conditions.
Possibility of hazardous reactions Will not occur.
Conditions to avoid Contact with incompatible materials.
Incompatible materials None known.
Hazardous decomposition products At thermal decomposition temperatures, carbon monoxide and carbon dioxide.

11. Toxicological information
Information on likely routes of exposure
Ingestion Expected to be a low ingestion hazard.
Inhalation Prolonged inhalation may be harmful.
Skin contact Not available.
Eye contact Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics
Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBON BLACK (CAS 1333-86-4)</td>
<td>Acute</td>
<td>Oral</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impurities</td>
<td>Species</td>
<td>Test Results</td>
<td></td>
</tr>
<tr>
<td>QUARTZ (CAS 14808-60-7)</td>
<td>Acute</td>
<td>Oral</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye Mild irritant to eyes (according to the modified Kay & Calandra criteria) Mild irritant to eyes irritation (according to the modified Kay & Calandra criteria)
Respiratory or skin sensitization Respiratory sensitization Not available.
Skin sensitization
According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. Risk of cancer cannot be excluded with prolonged exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity
CARBON BLACK (CAS 1333-86-4) 2B Possibly carcinogenic to humans.
QUARTZ (CAS 14808-60-7) 1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens
QUARTZ (CAS 14808-60-7) Known To Be Human Carcinogen.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity
Not classified.

Aspiration hazard
Not available.

Chronic effects
In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003)

According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Some of the components of this product are hazardous in the respirable form. However, because of the physical nature of this product, dust generation is not expected.

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

12. Ecological information

Ecotoxicity
No data available for this product. This material is not expected to be harmful to aquatic life.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Material should be recycled if possible.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to
Not available.

Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US federal regulations
OSHA Process Safety Standard: This material is not known to be hazardous by the OSHA Highly Hazardous Process Safety Standard, 29 CFR 1910.119.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Yes

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

Food and Drug Administration (FDA)
Total food additive
Indirect food additive
GRAS food additive

US state regulations

WARNING: This product contains a chemical known to the State of California to cause cancer.

US. Pennsylvania RTK - Hazardous Substances: Listed substance
CARBON BLACK (CAS 1333-86-4)
QUARTZ (CAS 14808-60-7)

US. Massachusetts RTK - Substance List
CARBON BLACK (CAS 1333-86-4)
QUARTZ (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act
Not regulated.

US. Rhode Island RTK
Not regulated.

US. California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause cancer.

US. California Proposition 65 - CRT: Listed date/Carcinogenic substance
### International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
</tr>
<tr>
<td>China</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

### 16. Other information, including date of preparation or last revision

| Issue date | 13-August-2014 |
| Revision date | 07-May-2015 |
| Version # | 09 |

**Further information**

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

**HMIS® ratings**

- Health: 1*
- Flammability: 0
- Physical hazard: 0

**NFPA ratings**

- Health: 1
- Flammability: 0
- Instability: 0

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use.

Third party materials: Insofar as materials not manufactured or supplied by this manufacturer are used in conjunction with, or instead of this product, it is the responsibility of the customer to obtain, from the manufacturer or supplier, all technical data and other properties relating to these and other materials and to obtain all necessary information relating to them. No liability can be accepted in respect of the use of this product in conjunction with materials from another supplier. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information in the sheet was written based on the best knowledge and experience currently available.
1 Identification

- **Product identifier**
  - **Trade name:** 1107 Advantage™ Grout
  - **Article number:** 83-67435
  - **Relevant identified uses of the substance or mixture and uses advised against:** No further relevant information available.
  - **Application of the substance / the mixture**

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Dayton® Superior
  - **Address:** 4226 Kansas Avenue
  - **City:** Kansas City, KS 66106
  - **Telephone number:** Tel.: (866) 329-8724

- **Emergency Telephone Number:** Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the U.S., Canada, or the U.S. Virgin Islands, call ChemTrec at (800) 424-9300, 24 hours a day. Or, outside these areas, call international number, +1 703 741-5970. Collect calls are accepted.

- **Information department:** Environmental, Health, and Safety department.

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Carc. 1A H350 May cause cancer.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
  - May cause eye and skin irritation. Prolonged contact may cause sensitization.

- **Information concerning particular hazards for human and environment:**
  - The product has to be labelled due to internationally acknowledged calculation procedures using the latest valid versions.

- **Classification system:**
  - The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**

![GHS08]

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - Quartz (SiO2)

- **Hazard statements**
  - May cause cancer.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Use personal protective equipment as required.
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - IF exposed or concerned: Get medical advice/attention.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)
Trade name: 1107 Advantage™ Grout

(Contd. of pag)
Safety Data Sheet
acc. to OSHA HCS

Trade name: 1107 Advantage™ Grout

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 1
    - Fire = 0
    - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - Health = 1
  - Fire = 0
  - Reactivity = 0

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

**Dangerous components:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
<td>50-75%</td>
</tr>
<tr>
<td>65997-15-1</td>
<td>Cement, portland, chemicals</td>
<td>25-50%</td>
</tr>
<tr>
<td>7778-18-9</td>
<td>Calcium sulphate, natural</td>
<td>≤5%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
  - After inhalation:
    - Supply fresh air and to be sure call for a doctor.
    - In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact:
    - If skin irritation continues, consult a doctor.
  - After eye contact:
    - Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing:
    - Seek medical treatment.
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents:
    - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Special hazards arising from the substance or mixture: No further relevant information available.
  - Advice for firefighters
  - Protective equipment:
    - Because fire may produce thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.
6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
  - **Environmental precautions:** No special measures required.
  - **Methods and material for containment and cleaning up:** Ensure adequate ventilation.

- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**
  - Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid breathing vapors or mists of this product. Use with adequate ventilation. Do not take internally.
  - **Information about protection against explosions and fires:** No special measures required.

- **Conditions for safe storage, including any incompatibilities**
  - **Storage:**
    - **Requirements to be met by storerooms and receptacles:** No special requirements.
    - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** Keep receptacle tightly sealed.
  - **Specific end use(s)**: No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Control parameters**

  - **Components with limit values that require monitoring at the workplace:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Substance</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
<td>see Quartz listing</td>
<td>Long-term value: 0.05* mg/m³</td>
<td>Long-term value: 0.025* mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*respirable dust: See Pocket Guide App. A</td>
<td>*as respirable fraction</td>
</tr>
<tr>
<td>65997-15-1</td>
<td>Cement, portland, chemicals</td>
<td>PEL</td>
<td>REL</td>
<td>TLV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term value: 50 mppcf or 15* 5** mg/m³</td>
<td>Long-term value: 10* 5** mg/m³</td>
<td>Long-term value: 1* mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*total dust **respirable fraction</td>
<td>*total dust **respirable fraction</td>
<td>E: *as respirable fraction</td>
</tr>
<tr>
<td>7778-18-9</td>
<td>calcium sulphate, natural</td>
<td>PEL</td>
<td>REL</td>
<td>TLV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term value: 15* 5** mg/m³</td>
<td>Long-term value: 10* 5** mg/m³</td>
<td>Long-term value: 1* mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*total dust **respirable fraction</td>
<td>*total dust **respirable fraction</td>
<td>E: *as respirable fraction</td>
</tr>
</tbody>
</table>
**Safety Data Sheet**

**acc. to OSHA HCS**

**Printing date 01/17/2015**

**Reviewed on 01/17/2015**

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**Trade name: 1107 Advantage™ Grout**

(Contd. of pag. )
Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

Breathing equipment: Suitable respiratory protective device recommended.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Wear appropriate eye protection to prevent eye contact.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

- Appearance: Solid
- Color: According to product specification
- Odor: Characteristic
- Odour threshold: Not determined.
- pH-value: Not applicable.

Change in condition
- Melting point/Melting range: Undetermined.
- Boiling point/Boiling range: > 999 °C (> 1830 °F)

- Flash point: Not applicable.
- Flammability (solid, gaseous): Not determined.

Ignition temperature:
- Decomposition temperature: Not determined.
- Auto igniting: Product is not selfigniting.
- Danger of explosion: Product does not present an explosion hazard.
<table>
<thead>
<tr>
<th>Trade name: 1107 Advantage™ Grout</th>
<th></th>
</tr>
</thead>
</table>
Safety Data Sheet
acc. to OSHA HCS

Trade name: 1107 Advantage™ Grout

Explosion limits:
Lower: Not determined.
Upper: Not determined.

Vapor pressure: Not applicable.

Density at 20 °C (68 °F): 2.8386 g/cm³ (23.688 lbs/gal)
Relative density: Not determined.
Vapour density: Not applicable.
Evaporation rate: Not applicable.

Solubility in / Miscibility with:
Water: Insoluble.

Partition coefficient (n-octanol/water): Not determined.

Viscosity:
Dynamic: Not applicable.
Kinematic: Not applicable.

Solvent content:
Organic solvents: 0.0 %

Solids content: 100.0 %
Other information: No further relevant information available.

Volatile Organic Compounds: Not determined

10 Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
 Possibility of hazardous reactions: No dangerous reactions known.
 Conditions to avoid: No further relevant information available.
 Incompatible materials: No further relevant information available.
 Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects
Acute toxicity:
Primary irritant effect:
on the skin: May cause skin irritation.
on the eye: Irritating effect.
Sensitization: Sensitization possible through skin contact.

Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

Carcinogenic categories
IARC (International Agency for Research on Cancer)

<table>
<thead>
<tr>
<th>Code</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>titanium dioxide</td>
</tr>
</tbody>
</table>

(Contd. on page 6)
<table>
<thead>
<tr>
<th>Trade name: 1107 Advantage™ Grout</th>
</tr>
</thead>
</table>

(Contd. of pag...)
Safety Data Sheet
acc. to OSHA HCS

Trade name: 1107 Advantage™ Grout

1309-37-1, diiron trioxide

NTP (National Toxicology Program)
14808-60-7, Quartz (SiO2)

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

- Toxicty
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.

- Additional ecological information:
  - General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation:
    Must not be disposed of as normal garbage. Do not allow product to reach sewage system.
    It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to Federal, State, and Local regulations.

14 Transport information

- UN-Number
  - DOT, ADR, IMDG, IATA: Not Regulated

- UN proper shipping name
  - ADR: Not Regulated

- Transport hazard class(es)
  - DOT, ADR, IMDG, IATA: N/A

- Packing group
  - ADR: III

- Environmental hazards:
  - Marine pollutant: No
15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Sara

Section 355 (extremely hazardous substances):
None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):
This product may contain 1 or more toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR part 372. If so, the chemicals are listed below.

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical Name</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1</td>
<td>aluminium oxide</td>
<td>≤1%</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
<td></td>
</tr>
<tr>
<td>63997-15-1</td>
<td>Cement, portland, chemicals</td>
<td></td>
</tr>
<tr>
<td>7778-18-9</td>
<td>calcium sulphate, natural</td>
<td></td>
</tr>
<tr>
<td>1344-28-1</td>
<td>aluminium oxide</td>
<td></td>
</tr>
<tr>
<td>65997-16-2</td>
<td>Cement, alumina, chemicals</td>
<td></td>
</tr>
<tr>
<td>9084-06-4</td>
<td>Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td></td>
</tr>
<tr>
<td>13463-67-7</td>
<td>titanium dioxide</td>
<td></td>
</tr>
<tr>
<td>1309-37-1</td>
<td>diuron trioxide</td>
<td></td>
</tr>
</tbody>
</table>

Proposition 65

Chemicals known to the State of California (Prop. 65) to cause cancer:
14808-60-7 Quartz (SiO2)
13463-67-7 titanium dioxide

Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

Carcinogenicity categories

EPA (Environmental Protection Agency)
None of the ingredients is listed.
Trade name: 1107 Advantage™ Grout
Safety Data Sheet
acc. to OSHA HCS

Printing date 01/17/2015
Reviewed on 01/17/2015

Trade name: 1107 Advantage™ Grout

TLV (Threshold Limit Value established by ACGIH)
- 14808-60-7 Quartz (SiO2)  A2
- 1344-28-1 aluminium oxide  A4
- 13463-67-7 titanium dioxide  A4
- 1309-37-1 diiron trioxide  A4

MAK (German Maximum Workplace Concentration)
- 14808-60-7 Quartz (SiO2)  1
- 1344-28-1 aluminium oxide  2
- 13463-67-7 titanium dioxide  3A

NIOSH-Ca (National Institute for Occupational Safety and Health)
- 14808-60-7 Quartz (SiO2)
- 13463-67-7 titanium dioxide

GHS label elements
The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms

Signal word
Danger

Hazard-determining components of labeling:
Quartz (SiO2)

Hazard statements
May cause cancer.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Use personal protective equipment as required.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
The provided information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS: Environmental, Health & Safety Department
Contact: Environmental, Health & Safety Manager
Date of preparation / last revision 01/17/2015 / 236
Abbreviations and acronyms:

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- Carc. IA: Carcinogenicity, Hazard Category 1A
1 Identification

Product identifier

Trade name: Cure & Seal 309 J18

Article number: 83-69223

Relevant identified uses of the substance or mixture and uses advised against: No further relevant information available.

Application of the substance / the mixture

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
Dayton® Superior
4226 Kansas Avenue
Kansas City, KS 66106

Tel.: (866) 329-8724

Emergency Telephone Number: Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the U.S., Canada, or the U.S. Virgin Islands, call ChemTrec at (800) 424-9300, 24 hours a day. Or, outside these areas, call international number, +1 703 741-5970. Collect calls are accepted.

Information department: Environmental, Health, and Safety department.

2 Hazard(s) identification

Classification of the substance or mixture

Eye Irrit. 2B  H320 Causes eye irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

May cause eye and skin irritation. Prolonged contact may cause sensitization.

Information concerning particular hazards for human and environment:
The product has to be labelled due to internationally acknowledged calculation procedures using the latest valid versions.

Classification system:
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Label elements

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms Void

Signal word Warning

Hazard statements

Causes eye irritation.

Precautionary statements

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Wash thoroughly after handling.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Classification system:

NFPA ratings (scale 0 - 4)

Health = 1
Fire = 0
Reactivity = 0

(Contd. on page 2)
3 Composition/information on ingredients

- Chemical characterization: Mixtures
  - Description: Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:
  - 25265-77-4 Trimehyl-1,3-pentanediol, monoisoobutyrate ≤ 10%

- Additional information: For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

- Description of first aid measures
  - After inhalation: Supply fresh air and to be sure call for a doctor.
    - In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: If skin irritation continues, consult a doctor.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: Because fire may produce thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Wear protective equipment. Keep unprotected persons away.
  - Environmental precautions: Dilute with plenty of water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Ensure adequate ventilation.
| Trade name: Cure & Seal 309 J18 |  |
7 Handling and storage

Precautions for safe handling
Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid breathing vapours or mists of this product. Use with adequate ventilation. Do not take internally.

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL Long-term value: 35 mg/m³, 50 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-41-7 ammonia, anhydrous</td>
<td></td>
</tr>
<tr>
<td>REL Short-term value: 27 mg/m³, 35 ppm</td>
<td></td>
</tr>
<tr>
<td>Long-term value: 18 mg/m³, 25 ppm</td>
<td></td>
</tr>
<tr>
<td>TLV Short-term value: 24 mg/m³, 35 ppm</td>
<td></td>
</tr>
<tr>
<td>Long-term value: 17 mg/m³, 25 ppm</td>
<td></td>
</tr>
</tbody>
</table>

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Breathing equipment: Suitable respiratory protective device recommended.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

(Contd. on page 4)
Trade name: Cure & Seal 309 J18
Penetration time of glove material
The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Wear appropriate eye protection to prevent eye contact.

### 9 Physical and chemical properties

**Information on basic physical and chemical properties**

**General Information**

- **Appearance:** Liquid
  - Form: According to product specification
  - Color: White / Dries Clear
- **Odor:** Characteristic
- **Odour threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: 100 °C (212 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:**
  - Decomposition temperature: Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)
- **Density at 20 °C (68 °F):** 1.00636 g/cm³ (8.398 lbs/gal)
- **Relative density:** Not determined.
- **Vapour density**
- **Evaporation rate**
- **Solubility in / Miscibility with**
  - Water: Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Solvent content**
  - Organic solvents: 0.0 %
  - Water: 74.5 %
- **Solids content:** 14.8 %
- **Other information**
  - No further relevant information available.

(Contd. on page 5)
Trade name: Cure & Seal 309 J18
10 Stability and reactivity

- Reactivity
  - Chemical stability
    - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
    - Possibility of hazardous reactions: No dangerous reactions known.
    - Conditions to avoid: No further relevant information available.
    - Incompatible materials: No further relevant information available.
    - Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: May cause skin irritation.
      - on the eye: Irritating effect.
    - Sensitization: Sensitization possible through skin contact.
  - Additional toxicological information:
    - The product shows the following dangers according to internally approved calculation methods for preparations:
    - Irritant

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    - 111-76-2 2-butoxyethanol 3
  - NTP (National Toxicology Program)
    - None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    - None of the ingredients is listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.

- Additional ecological information:
  - General notes:
    - Water hazard class 1 (Self-assessment): slightly hazardous for water
    - Water hazard class 2 (Self-assessment): hazardous for water
    - Do not allow product to reach ground water, water course or sewage system.
    - Danger to drinking water if even small quantities leak into the ground.

- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
13 Disposal considerations

- Waste treatment methods
  Recommendation: It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.
- Uncleaned packaging:
  Recommendation: Disposal must be made according to Federal, State, and Local regulations.

14 Transport information

- UN-Number
  DOT, ADR, IMDG, IATA: Not Regulated
- UN proper shipping name
  ADR: Not Regulated
- Transport hazard class(es)
  DOT, ADR, IMDG, IATA
  Class: N/A
- Packing group
  DOT, ADR, IMDG, IATA: III
- Environmental hazards:
  Marine pollutant: No
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.
- Transport/Additional information:
  ADR
  U.S. Domestic Ground Shipments: Not Regulated by D.O.T.
  U.S. Domestic Ground Non-Bulk (119 gal or less per container) Shipments: Same as listed for Standard Shipments above.
  Emergency Response Guide (ERG) Number: Not determine
  UN "Model Regulation": UN-, -, N/A, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  Sara
  Section 355 (extremely hazardous substances):
  7664-41-7 ammonia, anhydrous
- Section 313 (Specific toxic chemical listings):
  This product may contain 1 or more toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR part 372. If so, the chemicals are listed below.
Trade name: Cure & Seal 309 J18
Trade name: Cure & Seal 309 J18

| 7664-41-7 | ammonia, anhydrous | ≤1% |
| 10124-37-5 | calcium nitrate, containing in the anhydrous state more than 16 per cent by weight of nitrogen | ≤0.01% |
| 111-76-2 | 2-butoxyethanol | ≤0.01% |

TSCA (Toxic Substances Control Act):
All ingredients are listed.

- **Proposition 65**
  - **Chemicals known to the State of California (Prop. 65) to cause cancer:**
    None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for females:**
    None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for males:**
    None of the ingredients is listed.
  - **Chemicals known to cause developmental toxicity:**
    None of the ingredients is listed.

- **Carcinogenity categories**
  - **EPA (Environmental Protection Agency)**
    111-76-2 2-butoxyethanol | NL
  - **TLV (Threshold Limit Value established by ACGIH)**
    111-76-2 2-butoxyethanol | A3
  - **MAK (German Maximum Workplace Concentration)**
    111-76-2 2-butoxyethanol | 4
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    None of the ingredients is listed.

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms** Void
  - **Signal word** Warning
  - **Hazard statements**
    Causes eye irritation.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Wash thoroughly after handling.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - If eye irritation persists: Get medical advice/attention.

- **National regulations:**
  - **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
  - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information
The provided information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Department issuing MSDS: Environmental, Health & Safety Department
Contact: Environmental, Health & Safety Manager
Date of preparation / last revision 01/18/2015 / 115

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B
Trade name: Magic Kote®
1 Identification

- **Product identifier**
  - **Trade name:** Magic Kote®
  - **Article number:** 83-243000
  - **Relevant identified uses of the substance or mixture and uses advised against:** No further relevant information available.

- **Application of the substance / the mixture**

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - Dayton® Superior
    - 4226 Kansas Avenue
    - Kansas City, KS 66106
  - **Tel.:** (866) 329-8724

- **Emergency Telephone Number:** Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the U.S., Canada, or the U.S. Virgin Islands, call ChemTrec at (800) 424-9300, 24 hours a day. Or, outside these areas, call international number, +1 703 741-5970. Collect calls are accepted.

- **Information department:** Environmental, Health, and Safety department.

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Carc. 1B H350 May cause cancer.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable.

- **Information concerning particular hazards for human and environment:**
  - The product has to be labelled due to internationally acknowledged calculation procedures using the latest valid versions.

- **Classification system:**
  - The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**
  - ![GHS08](image)

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - Distillates (petroleum), hydrotreated light naphthenic
  - Distillates (petroleum), solvent-dewaxed heavy paraffinic
  - Residual oils (petroleum), solvent-dewaxed
  - Residual oils (petroleum), hydrotreated

- **Hazard statements**
  - May cause cancer.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Use personal protective equipment as required.
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - IF exposed or concerned: Get medical advice/attention.

(Contd. on page 2)
Trade name: Magic Kote®
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 1
    - Fire = 1
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - HEALTH 1
    - FIRE 1
    - PHYSICAL HAZARD 0

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

### 3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

  - Dangerous components:
    - 64742-53-6 Distillates (petroleum), hydrotreated light napthenic 50-75%
    - 64742-65-0 Distillates (petroleum), solvent-dewaxed heavy paraffinic 10-25%
    - 64742-62-7 Residual oils (petroleum), solvent-dewaxed ≤ 10%
    - 64742-57-0 Residual oils (petroleum), hydrotreated ≤ 10%

  - Additional information: For the wording of the listed risk phrases refer to section 16.

### 4 First-aid measures

- Description of first aid measures
  - After inhalation:
    - Supply fresh air and to be sure call for a doctor.
    - In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact:
    - If skin irritation continues, consult a doctor.
  - After eye contact:
    - Rinse opened eye for several minutes under running water.
  - After swallowing:
    - Seek medical treatment.
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

### 5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.

(Contd. on page 3)
Trade name: Magic Kote®
Trade name: Magic Kote®

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions**: Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up**:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**
  Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid breathing vapors or mists of this product. Use with adequate ventilation. Do not take internally.
- **Information about protection against explosions and fires**: No special measures required.
- **Conditions for safe storage, including any incompatibilities**
  Storage:
  - **Requirements to be met by storerooms and receptacles**: No special requirements.
  - **Information about storage in one common storage facility**: Not required.
  - **Further information about storage conditions**: None.
  - **Specific end use(s)**: No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems**: No further data; see item 7.
- **Control parameters**
  - **Components with limit values that require monitoring at the workplace**:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  - **Additional information**: The lists that were valid during the creation were used as basis.
- **Exposure controls**
  - **Personal protective equipment**:
    - **General protective and hygienic measures**: Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work.
    - **Breathing equipment**: Not required.
    - **Protection of hands**: Protective gloves

(Contd. on page 4)
Trade name: Magic Kote®
9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:**
    - **Form:** Liquid
    - **Color:** According to product specification
    - **Odor:** Characteristic
    - **Odour threshold:** Not determined.
  - **pH-value:** Not determined.
  - **Change in condition**
    - **Melting point/Melting range:** Undetermined.
    - **Boiling point/Boiling range:** > 218 °C (> 424 °F)
  - **Flash point:** 140 °C (284 °F)
  - **Flammability (solid, gaseous):** Not applicable.
  - **Ignition temperature:**
    - **Decomposition temperature:** Not determined.
    - **Auto igniting:** Product is not self-igniting.
    - **Danger of explosion:** Product does not present an explosion hazard.
  - **Explosion limits:**
    - **Lower:** Not determined.
    - **Upper:** Not determined.
  - **Vapor pressure:** Not determined.
  - **Density at 20 °C (68 °F):** 0.89 g/cm³ (7.427 lbs/gal)
  - **Relative density:** Not determined.
  - **Vapour density:** Not determined.
  - **Evaporation rate:** Not determined.
  - **Solubility in / Miscibility with**
    - **Water:** Not miscible or difficult to mix.
  - **Partition coefficient (n-octanol/water):** Not determined.
  - **Viscosity:**
    - **Dynamic:** Not determined.
    - **Kinematic:** Not determined.
  - **Solvent content:**
    - **Organic solvents:** 0.0 %
  - **Solids content:** 65.5 %
  - **Other information**
    - No further relevant information available.
  - **Volatile Organic Compounds:** Contains less than 250 g/L.

(Contd. on page 5)
10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
  - Primary irritant effect:
    - on the skin: No irritant effect known.
    - on the eye: No irritating effect known.
  - Sensitization: Sensitization possible through skin contact.
  - Additional toxicological information:
    The product shows the following dangers according to internally approved calculation methods for preparations:
    Irritant

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    111-42-2 | 2,2'-iminodiethanol 3
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.
Trade name: Magic Kote®
13 Disposal considerations

Waste treatment methods
Recommendation:
It is the generator’s responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.

Uncleaned packaging:
Recommendation: Disposal must be made according to Federal, State, and Local regulations.

14 Transport information

- UN-Number
  DOT, ADR, IMDG, IATA: Not Regulated

- UN Proper shipping name
  ADR: Not Regulated

- Transport hazard class(es)
  DOT, ADR, IMDG, IATA
  Class: N/A

- Packing group
  DOT, ADR, IMDG, IATA
  III

- Environmental hazards:
  Marine pollutant: No

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  Not applicable.

- Transport/Additional information:
  ADR: Not Regulated by D.O.T.
  U.S. Domestic Ground Shipments: Same as listed for Standard Shipments above.
  U.S. Domestic Ground Non-Bulk (119 gal or less per container) Shipments: Not determine
  Emergency Response Guide (ERG) Number: UN-, -, N/A, III

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
Sara

Section 355 (extremely hazardous substances):
None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):
This product may contain 1 or more toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR part 372. If so, the chemicals are listed below.

111-42-2 | 2,2’-iminodietanol | ≤0.1%
Trade name: Magic Kote®
Safety Data Sheet
acc. to OSHA HCS

Trade name: Magic Kote®

(Tcontd. of pag )

(Tcontd. of page 6)

- TSCA (Toxic Substances Control Act):
  All ingredients are listed.

- Proposition 65
  - Chemicals known to the State of California (Prop. 65) to cause cancer:
    111-42-2 | 2,2’-iminodietanol
  - Chemicals known to cause reproductive toxicity for females:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for males:
    None of the ingredients is listed.
  - Chemicals known to cause developmental toxicity:
    None of the ingredients is listed.

- Cancerogenity categories
  - EPA (Environmental Protection Agency)
    None of the ingredients is listed.

- TLV (Threshold Limit Value established by ACGIH)
  111-42-2 | 2,2’-iminodietanol | A3

- MAK (German Maximum Workplace Concentration)
  112-80-1 | oleic acid, pure | 3A
  111-42-2 | 2,2’-iminodietanol | 3B

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  None of the ingredients is listed.

- GHS label elements
  The product is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms
  - GHS08

- Signal word
  Danger

- Hazard-determining components of labeling:
  Distillates (petroleum), hydrorefined light naphthenic
  Distillates (petroleum), solvent-dewaxed heavy paraffinic
  Residual oils (petroleum), solvent-dewaxed
  Residual oils (petroleum), hydrorefined

- Hazard statements
  May cause cancer.

- Precautionary statements
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Use personal protective equipment as required.
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  IF exposed or concerned: Get medical advice/attention.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 8)
16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **National regulations:**
  - Water hazard class: Water hazard class 3 (Self-assessment): extremely hazardous for water.
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

- **Department issuing MSDS:** Environmental, Health & Safety Department
- **Contact:** Environmental, Health & Safety Manager
- **Date of preparation / last revision:** 01/18/2015 / 32

- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - Carc. IB: Carcinogenicity, Hazard Category 1B
1 Identification

- **Product identifier**
  
  **Trade name:** Sure Hard™ Densifier J17

  - **Article number:** 83-68082
  - **Relevant identified uses of the substance or mixture and uses advised against:** No further relevant information available.
  - **Application of the substance / the mixture**

  **Details of the supplier of the safety data sheet**

  **Manufacturer/Supplier:**
  Dayton® Superior  
  4226 Kansas Avenue  
  Kansas City, KS 66106  
  **Tel.:** (866) 329-8724

  **Emergency Telephone Number:** Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the U.S., Canada, or the U.S. Virgin Islands, call ChemTrec at (800) 424-9300, 24 hours a day. Or, outside these areas, call international number, +1 703 741-5970. Collect calls are accepted.

  **Information department:** Environmental, Health, and Safety department.

2 Hazard(s) identification

- **Classification of the substance or mixture**
  
  Eye Dam. 1  H318  Causes serious eye damage.
  
  Acute Tox. 4  H302  Harmful if swallowed.
  
  Skin Irrit. 2  H315  Causes skin irritation.

  **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** May cause skin and eye irritation.

  **Information concerning particular hazards for human and environment:**
  
  The product has to be labelled due to internationally acknowledged calculation procedures using the latest valid versions.

  **Classification system:**
  
  The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **Label elements**
  
  **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  
  **Label pictograms**
  
  GHS05  
  GHS07

- **Signal word** Danger

  **Hazard-determining components of labeling:**
  
  Silicic acid, sodium salt

  **Hazard statements**
  
  Harmful if swallowed.
  
  Causes skin irritation.
  
  Causes serious eye damage.

  **Precautionary statements**
  
  If medical advice is needed, have product container or label at hand.
  
  Keep out of reach of children.
  
  Read label before use.
  
  Wear protective gloves/protective clothing/eye protection/face protection.
**Trade name: Sure Hard™ Densifier J17**

(Contd. of pag )
Trade name: Sure Hard™ Densifier J17

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
Take off contaminated clothing and wash before reuse.
If skin irritation occurs: Get medical advice/attention.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 1
  - Fire = 0
  - Reactivity = 0
- HMIS-ratings (scale 0 - 4)
  - Health = 1
  - Fire = 0
  - Reactivity = 0

Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

3 Composition/information on ingredients
- Description: Mixture of the substances listed below with nonhazardous additions.
- Dangerous components:
  - 1344-09-8 Silicic acid, sodium salt 10-25%
- Additional information: For the wording of the listed risk phrases refer to section 16

4 First-aid measures
- Description of first aid measures
  - General information: Immediately remove any clothing soiled by the product.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: If skin irritation continues, consult a doctor.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures
- Extinguishing media
- Suitable extinguishing agents:
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture: No further relevant information available.
| Trade name: Sure Hard™ Densifier J17 |

(Contd. of pag)
6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.

- Environmental precautions: Dilute with plenty of water.

- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Precautions for safe handling
  Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid breathing vapors or mists of this product. Use with adequate ventilation. Do not take internally.

- Information about protection against explosions and fires: No special measures required.

- Conditions for safe storage, including any incompatibilities

- Storage:
  Requirements to be met by storerooms and receptacles: No special requirements.

- Information about storage in one common storage facility: Not required.

- Further information about storage conditions: None.

- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters
  Components with limit values that require monitoring at the workplace:
  The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
  Personal protective equipment:
  General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
  Avoid contact with the skin.
  Avoid contact with the eyes and skin.

  Breathing equipment: Not required.
**Trade name: Sure Hard™ Densifier J17**
Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Wear appropriate eye protection to prevent eye contact.

9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
</tr>
<tr>
<td>Appearance:</td>
</tr>
<tr>
<td>Form: Liquid</td>
</tr>
<tr>
<td>Color: According to product specification</td>
</tr>
<tr>
<td>Odor: Characteristic</td>
</tr>
<tr>
<td>Odour threshold: Not determined.</td>
</tr>
<tr>
<td>pH-value: Not determined</td>
</tr>
<tr>
<td>Change in condition</td>
</tr>
<tr>
<td>Melting point/Melting range: Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: 100 °C (212 °F)</td>
</tr>
<tr>
<td>Flash point: Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gaseous): Not applicable.</td>
</tr>
<tr>
<td>Ignition temperature</td>
</tr>
<tr>
<td>Decomposition temperature: Not determined.</td>
</tr>
<tr>
<td>Auto igniting: Product is not selfigniting</td>
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<tr>
<td>Danger of explosion: Product does not present an explosion hazard.</td>
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<tr>
<td>Explosion limits:</td>
</tr>
<tr>
<td>Lower: Not determined</td>
</tr>
<tr>
<td>Upper: Not determined</td>
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<tr>
<td>Vapor pressure at 20 °C (68 °F): 23 hPa (17 mm Hg)</td>
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<tr>
<td>Density at 20 °C (68 °F): 1.21933 g/cm³ (10.175 lbs/gal)</td>
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<tr>
<td>Relative density: Not determined.</td>
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<tr>
<td>Vapour density: Not determined.</td>
</tr>
<tr>
<td>Evaporation rate: Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water: Fully miscible.</td>
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<tr>
<td>Partition coefficient (n-octanol/water): Not determined.</td>
</tr>
<tr>
<td>Trade name: Sure Hard™ Densifier J17</td>
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</tbody>
</table>

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Safety Data Sheet
acc. to OSHA HCS

Trade name: Sure Hard™ Densifier J17

Viscosity:
- Dynamic: Not determined.
- Kinematic: Not determined.

Solvent content:
- Organic solvents: 0.0%
- Water: 76.0%

Solids content: 24.0%

Other information:
- No further relevant information available.

Volatile Organic Compounds: Contains 0 g/L.

10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - Primary irritant effect:
    - on the skin: May cause skin irritation.
    - on the eye: No irritating effect known.
  - Sensitization: No sensitizing effects known.
- Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations: Irritant

- Carcinogenic categories
- IARC (International Agency for Research on Cancer)
  None of the ingredients is listed.

- NTP (National Toxicology Program)
  None of the ingredients is listed.

- OSHA-Ca (Occupational Safety & Health Administration)
  None of the ingredients is listed.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.

(Contd. on page 6)
Trade name: Sure Hard™ Densifier J17
13 Disposal considerations

- Waste treatment methods
  Recommendation: Must not be disposed of as normal garbage. Do not allow product to reach sewage system.
  It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.

- Uncleaned packagings:
  Recommendation: Disposal must be made according to Federal, State, and Local regulations.
  Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  DOT, ADR, IMDG, IATA: Not Regulated

- UN proper shipping name
  ADR: Not Regulated

- Transport hazard class(es)
  DOT, ADR, IMDG, IATA
  Class: N/A

- Packing group
  DOT, ADR, IMDG, IATA: III

- Environmental hazards:
  Marine pollutant: No

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

- Transport/Additional information:
  ADR
  U.S. Domestic Ground Shipments: Same as listed for Standard Shipments above.
  U.S. Domestic Ground Non-Bulk (119 gal or less per container) Shipments: Same as listed for Standard Shipments above.
  Emergency Response Guide (ERG) Number: Not determine

- UN "Model Regulation": UN-, -, N/A, III
Trade name: Sure Hard™ Densifier J17
### 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Sara**

**Section 355 (extremely hazardous substances):**
None of the ingredient is listed.

**Section 313 (Specific toxic chemical listings):**
This product may contain 1 or more toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR part 372. If so, the chemicals are listed below.
None of the ingredients is listed.

**TSCA (Toxic Substances Control Act):**
All ingredients are listed.

**Proposition 65**

**Chemicals known to the State of California (Prop. 65) to cause cancer:**
None of the ingredients is listed.

**Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

**Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

**Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

**Carcinogenity categories**

**EPA (Environmental Protection Agency)**
None of the ingredients is listed.

**TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

**MAK (German Maximum Workplace Concentration)**
None of the ingredients is listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**

![GHS05](image) ![GHS07](image)

**Signal word** Danger

**Hazard-determining components of labeling:**
Silicic acid, sodium salt

**Hazard statements**
Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

**Precautionary statements**
If medical advice is needed, have product container or label at hand.
Trade name: Sure Hard™ Densifier J17

Keep out of reach of children.
Read label before use.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
Take off contaminated clothing and wash before reuse.
If skin irritation occurs: Get medical advice/attention.
Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:

- Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The provided information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing MSDS: Environmental, Health & Safety Department
- Contact: Environmental, Health & Safety Manager
- Date of preparation / last revision 01/18/2015 / 137
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACIGH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  Acute Tox. 4: Acute toxicity, Hazard Category 4
  Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
1 Identification

Product identifier

Trade name: Ultra Seal EF

Article number: 83-309454

Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.

Application of the substance / the mixture

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Dayton® Superior

4226 Kansas Avenue

Kansas City, KS 66106

Tel.: (866) 329-8724

Emergency Telephone Number: Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the U.S., Canada, or the U.S. Virgin Islands, call ChemTrec at (800) 424-9300, 24 hours a day. Or, outside these areas, call international number, +1 703 741-5970. Collect calls are accepted.

Information department: Environmental, Health, and Safety department.

2 Hazard(s) identification

Classification of the substance or mixture The product is not classified according to the Globally Harmonized System (GHS).

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Not applicable.

Information concerning particular hazards for human and environment: The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system: The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Label elements

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

Classification system:

NFPA ratings (scale 0 - 4)

\[ \begin{align*}
\text{Health} &= 0 \\
\text{Fire} &= 0 \\
\text{Reactivity} &= 0
\end{align*} \]

HMIS-ratings (scale 0 - 4)

\[ \begin{align*}
\text{Health} &= 0 \\
\text{Fire} &= 0 \\
\text{Reactivity} &= 0
\end{align*} \]

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

(Contd. on page 2)
Trade name: Ultra Seal EF
3 Composition/information on ingredients

**Chemical characterization:** Mixtures
**Description:** Mixture of the substances listed below with nonhazardous additions.

**Dangerous components:**
If this section is blank, there are no Hazardous components listed per OSHA guidelines.

**Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

**Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

**Extinguishing media**
- **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.

6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Not required.
**Environmental precautions:** Do not allow product to reach sewage system or any water course.
**Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
**Reference to other sections**
- No dangerous substances are released.
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

**Precautions for safe handling**
Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid breathing vapors or mists of this product. Use with adequate ventilation. Do not take internally.

**Information about protection against explosions and fires:** No special measures required.

**Conditions for safe storage, including any incompatibilities**

**Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

(Contd. on page 3)
<table>
<thead>
<tr>
<th>Trade name: Ultra Seal EF</th>
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</tr>
</thead>
</table>

(Contd. of pag)
8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures: The usual precautionary measures for handling chemicals should be followed.
- Breathing equipment: Not required.
- Protection of hands:

![Protective gloves]
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- Eye protection: Wear appropriate eye protection to prevent eye contact.

9 Physical and chemical properties

- Information on basic physical and chemical properties
  General Information
  Appearance:
  - Form: Liquid
  - Color: According to product specification
  - Odor: Characteristic
  - Odour threshold: Not determined.
  - pH-value: Not determined.

  - Change in condition
    - Melting point/Melting range: Undetermined.
    - Boiling point/Boiling range: 100 °C (212 °F)

  - Flash point: Not applicable.
  - Flammability (solid, gaseous): Not applicable.

  - Ignition temperature:
    - Decomposition temperature: Not determined.
    - Auto igniting: Product is not selfigniting.

  - Danger of explosion: Product does not present an explosion hazard.

  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
Trade name: Ultra Seal EF
Safety Data Sheet
acc. to OSHA HCS

Printing date 03/11/2015
Reviewed on 03/11/2015

Trade name: Ultra Seal EF

- Vapor pressure at 20 °C (68 °F): 23 hPa (17 mm Hg)
- Density at 20 °C (68 °F): 1.029 g/cm³ (8.587 lbs/gal)
  - Relative density: Not determined.
  - Vapour density: Not determined.
  - Evaporation rate: Not determined.
- Solubility in / Miscibility with
  - Water: Fully miscible.
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- Solvent content:
  - Organic solvents: 0.0 %
  - Water: 73.7 %
- Solids content: 24.5 %
- Other information: No further relevant information available.
- Volatile Organic Compounds: Contains less than 100 g/L.

10 Stability and reactivity

  - Reactivity
  - Chemical stability
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  - Possibility of hazardous reactions: No dangerous reactions known.
  - Conditions to avoid: No further relevant information available.
  - Incompatible materials: No further relevant information available.
  - Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

  - Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: No irritant effect known.
      - on the eye: No irritating effect known.
      - Sensitization: No sensitizing effects known.
    - Additional toxicological information:
      - The product is not subject to classification according to internally approved calculation methods for preparations:
        When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer)
      - None of the ingredients is listed.
    - NTP (National Toxicology Program)
      - None of the ingredients is listed.
<table>
<thead>
<tr>
<th>Trade name: Ultra Seal EF</th>
</tr>
</thead>
</table>

(Contd. of page)
12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation:
    Smaller quantities can be disposed of with household waste.
    It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.
  - Uncleaned packagings:
    - Recommendation: Disposal must be made according to Federal, State, and Local regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - DOT, ADR, IMDG, IATA: Not Regulated

- UN proper shipping name
  - ADR: Not Regulated

- Transport hazard class(es)
  - DOT, ADR, IMDG, IATA
    - Class: N/A

- Packing group
  - DOT, ADR, IMDG, IATA
    - Class: III

- Environmental hazards:
  - Marine pollutant: No

- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
  - Not applicable.
Transport/Additional information:

- **ADR**: Same as listed for Standard Shipments above.
- **U.S. Domestic Ground Shipments**: Same as listed for Standard Shipments above.
- **U.S. Domestic Ground Non-Bulk (119 gal or less per container) Shipments**: Same as listed for Standard Shipments above.
- **Emergency Response Guide (ERG) Number**: Not determined
- **UN "Model Regulation"**: UN-, -, N/A, III

---

**15 Regulatory information**

Safety, health and environmental regulations/legislation specific for the substance or mixture

Sara

- **Section 355 (extremely hazardous substances):**
  - 7664-41-7 ammonia, anhydrous

Section 313 (Specific toxic chemical listings):

This product may contain 1 or more toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR part 372. If so, the chemicals are listed below.

- 7664-41-7 ammonia, anhydrous
- 1336-21-6 ammonia

- **TSCA (Toxic Substances Control Act):**
  - All ingredients are listed.

- **Proposition 65**

- **Chemicals known to the State of California (Prop. 65) to cause cancer:**
  - None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**
  - None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**
  - None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**
  - None of the ingredients is listed.

- **Carcinogenity categories**

- **EPA (Environmental Protection Agency):**
  - None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH):**
  - None of the ingredients is listed.

- **MAK (German Maximum Workplace Concentration):**
  - None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health):**
  - None of the ingredients is listed.

- **GHS label elements**: Void
- **Hazard pictograms**: Void
- **Signal word**: Void
- **Hazard statements**: Void
National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS: Environmental, Health & Safety Department
Contact: Environmental, Health & Safety Manager
Date of preparation / last revision 03/11/2015 / 22

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
MATERIAL SAFETY DATA SHEET

SECTION 1  PRODUCT AND COMPANY IDENTIFICATION

PRODUCT
Product Name:  (see Section 16 for Synonyms)  GASOLINE UNLEADED WITH ETHANOL (GASOHOL)
Product Description:  Hydrocarbons and Additives
Product Code:  12443
Intended Use:  Fuel

COMPANY IDENTIFICATION
Supplier:  Canada Imperial Oil Limited, An Affiliate of Exxon Mobil Corporation
P.O. Box 2480, Station M
Calgary, ALBERTA, T2P 3M9  Canada
24 Hour Health Emergency  519-339-2145
Transportation Emergency Phone  519-339-2145
Supplier General Contact  1-800-567-3776

SECTION 2  COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>5 - 10%</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>86290-81-5</td>
<td>85 - 95%</td>
</tr>
<tr>
<td>METHYL-TERT-BUTYL ETHER</td>
<td>1634-04-4</td>
<td>0 - 7%</td>
</tr>
</tbody>
</table>

Hazardous Constituent(s) Contained in Complex Substance(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>0 - 1.5%</td>
</tr>
<tr>
<td>CUMENE</td>
<td>98-62-8</td>
<td>0 - 1%</td>
</tr>
<tr>
<td>CYCLOHEXANE</td>
<td>110-82-7</td>
<td>0 - 1%</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>0 - 3%</td>
</tr>
<tr>
<td>N-Hexane</td>
<td>110-54-3</td>
<td>0 - 3%</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>91-20-3</td>
<td>0 - 1%</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>0 - 20%</td>
</tr>
<tr>
<td>XYLENES</td>
<td>1330-20-7</td>
<td>0 - 10%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless material is a gas.  Gas concentrations are in percent by volume.

NOTE:  The concentration of the components shown above may vary substantially.  In certain countries, benzene content may be limited to lower levels.  Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl ether, and ethyl-tertiary-butyl ether may be present.  Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline.  The major components of gasoline vapor are: butane, isobutane, pentane, and isopentane.  The reportable component percentages, shown in the composition/information on ingredients section, are based on API's evaluation of a typical gasoline mixture.  Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory.

SECTION 3  HAZARDS IDENTIFICATION
This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

**POTENTIAL PHYSICAL / CHEMICAL EFFECTS**
- Extremely flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

**POTENTIAL HEALTH EFFECTS**
- Irritating to skin. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).

  Target Organs: Lung | Skin |

**ENVIRONMENTAL HAZARDS**
- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

  NFPA Hazard ID:  
  - Health: 1  
  - Flammability: 3  
  - Reactivity: 0

  HMIS Hazard ID:  
  - Health: 1*  
  - Flammability: 3  
  - Reactivity: 0

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

### SECTION 4  FIRST AID MEASURES

**INHALATION**
- Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**SKIN CONTACT**
- Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**EYE CONTACT**
- Flush thoroughly with water. If irritation occurs, get medical assistance.

**INGESTION**
- Seek immediate medical attention. Do not induce vomiting.

**NOTE TO PHYSICIAN**
- If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

**PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE**
Benzene- Individuals with liver disease may be more susceptible to toxic effects.

| S | C | ON 5 | R | G | NG M | ASUR | S |
EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING
Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES
Flash Point [Method]: -40°C (-40°F) [ ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 1.5 UEL: 7.6
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES
In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES
Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT
Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.
Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS
Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7  HANDLING AND STORAGE

HANDLING
Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

Static Accumulator: This material is a static accumulator.

STORAGE
Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

SECTION 8  EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

<table>
<thead>
<tr>
<th>Source</th>
<th>Form</th>
<th>Limit / Standard</th>
<th>Note</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>OSHA Action level</td>
<td>0.5 ppm</td>
<td>N/A</td>
<td>OSHA Sp.Reg.</td>
</tr>
<tr>
<td>BENZENE</td>
<td>STEL</td>
<td>5 ppm</td>
<td>N/A</td>
<td>OSHA Sp.Reg.</td>
</tr>
<tr>
<td>Substance</td>
<td>TWA</td>
<td>STEL</td>
<td>Skin Sensitivity</td>
<td>OSHA Sp. Req.</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------</td>
<td>---------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>BENZENE</td>
<td>1 ppm</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>BENZENE</td>
<td>2.5 ppm</td>
<td>Skin</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>BENZENE</td>
<td>0.5 ppm</td>
<td>Skin</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>CUMENE</td>
<td>245 mg/m³</td>
<td>50 ppm</td>
<td>Skin</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>CUMENE</td>
<td>50 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>CYCLOHEXANE</td>
<td>1050 mg/m³</td>
<td>300 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>CYCLOHEXANE</td>
<td>100 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>1900 mg/m³</td>
<td>1000 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
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<td>1000 ppm</td>
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<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>435 mg/m³</td>
<td>100 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>125 ppm</td>
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<td>ACGIH</td>
<td></td>
</tr>
<tr>
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<td>100 ppm</td>
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<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>GASOLINE</td>
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<td>ExxonMobil</td>
<td></td>
</tr>
<tr>
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<td>100 ppm</td>
<td>N/A</td>
<td>ExxonMobil</td>
<td></td>
</tr>
<tr>
<td>GASOLINE</td>
<td>300 mg/m³</td>
<td>100 ppm</td>
<td>N/A</td>
<td>ExxonMobil</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>GASOLINE</td>
<td>300 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>METHYL-TERT-BUTYL ETHER</td>
<td>50 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>1800 mg/m³</td>
<td>500 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>50 ppm</td>
<td>Skin</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>50 mg/m³</td>
<td>10 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>15 ppm</td>
<td>Skin</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>10 ppm</td>
<td>Skin</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>TOLUENE</td>
<td>Ceiling</td>
<td>300 ppm</td>
<td>N/A</td>
<td>OSHA Z2</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>Maximum concentration</td>
<td>500 ppm</td>
<td>N/A</td>
<td>OSHA Z2</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>200 ppm</td>
<td>N/A</td>
<td>OSHA Z2</td>
<td></td>
</tr>
<tr>
<td>TOLUENE</td>
<td>20 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>XYLENES</td>
<td>435 mg/m³</td>
<td>100 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>XYLENES</td>
<td>150 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>XYLENES</td>
<td>100 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
<td></td>
</tr>
</tbody>
</table>
NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a
level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

**ENVIRONMENTAL CONTROLS**
See Sections 6, 7, 12, 13.

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**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

**GENERAL INFORMATION**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear (May Be Dyed)</td>
</tr>
<tr>
<td>Odor</td>
<td>Petroleum/Solvent</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/D</td>
</tr>
</tbody>
</table>

**IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION**

- **Relative Density (at 15°C):** 0.751
- **Flash Point [Method]:** -40°C (-40°F) [ASTM D-92]
- **Flammable Limits (Approximate volume % in air):** LEL: 1.5 UEL: 7.6
- **Autoignition Temperature:** N/D
- **Boiling Point / Range:** 35°C (95°F) - 225°C (437°F)
- **Vapor Density (Air = 1):** 4 at 101 kPa
- **Vapor Pressure:** 45 kPa (337.5 mm Hg) at 20°C - 74 kPa (555 mm Hg) at 20°C
- **Evaporation Rate (n-butyl acetate = 1):** > 10
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3
Solubility in Water: Appreciable
Viscosity: <1 cSt (1 mm2/sec) at 40°C | 0.8 cSt (0.8 mm2/sec) at 20°C
Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION
Freezing Point: N/D
Melting Point: N/A
Pour Point: < -60°C (-76°F)

SECTION 10  STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Halogens, Strong Acids, Alkalies, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

| S | C | ON 11 | OX | CO | OG | CA | N | ORMA | ON |
### ACUTE TOXICITY

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Conclusion / Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
</tr>
<tr>
<td>Toxicity (Rat): LC50 &gt; 5000 mg/m3</td>
<td>Minimally Toxic. Based on test data for structurally similar materials.</td>
</tr>
<tr>
<td>Irritation: No end point data.</td>
<td>Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td></td>
</tr>
<tr>
<td>Toxicity (Rat): LD50 &gt; 2000 mg/kg</td>
<td>Minimally Toxic. Based on test data for structurally similar materials.</td>
</tr>
<tr>
<td><strong>Skin</strong></td>
<td></td>
</tr>
<tr>
<td>Toxicity (Rabbit): LD50 &gt; 2000 mg/kg</td>
<td>Minimally Toxic. Based on test data for structurally similar materials.</td>
</tr>
<tr>
<td>Irritation: No end point data.</td>
<td>Moderately irritating to skin with prolonged exposure. Based on test data for structurally similar materials.</td>
</tr>
<tr>
<td><strong>Eye</strong></td>
<td></td>
</tr>
<tr>
<td>Irritation: Data available.</td>
<td>May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.</td>
</tr>
</tbody>
</table>

### CHRONIC/OTHER EFFECTS

**For the product itself:**

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies.
with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk.

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

**Contains:**

**BENZENE:** Caused cancer (leukemia), damage to the blood-producing system, and serious blood disorders from prolonged, high exposure based on human epidemiology studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus in laboratory animal studies.

**CUMENE:** Repeated inhalation exposure of cumene vapor produced damage in the kidney of male rats only. These effects are believed to be species specific and are not relevant to humans.

**ETHANOL:** Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring.

**Gasoline unleaded:** Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

**Methyl tertiary butyl ether (MTBE):** Carcinogenic in animal tests. Inhalation exposure to high concentrations resulted in higher than expected mortality in male mice due to urinary tract obstructions and female mice displayed benign liver tumors. Inhalation exposure to high concentrations resulted in higher than expected mortality in male rats due to progressive kidney damage as well as increased benign and malignant kidney tumors, and benign testicular tumors. Did not cause mutations In Vitro or In vivo. Rabbits exposed to high vapor concentrations did not have any offspring with adverse developmental effects. Mice exposed to high vapor concentrations (maternally toxic) had offspring with embryo/fetal toxicity and birth defects. Rats exposed to high vapor concentrations did not display any treatment-related effects in a two generation reproduction study. The significance of the animal findings at high exposures are not believed to be directly related to potential human health hazards in the workplace.

**NAPHTHALENE:** Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

**N-HEXANE:** Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

**TOLUENE:** Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

**ETHYL BENZENE:** Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

**The following ingredients are cited on the lists below:**
<table>
<thead>
<tr>
<th>Chem Name</th>
<th>CAS Number</th>
<th>st C tat ons</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>1, 3, 6</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>5</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>86290-81-5</td>
<td>5</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>91-20-3</td>
<td>2, 5</td>
</tr>
</tbody>
</table>

--REGULATORY LISTS SEARCHED--
1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY
Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY
More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.
Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY
Biodegradation:
Majority of components -- Expected to be inherently biodegradable

Atmospheric Oxidation:
More volatile component -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL
Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.
SECTION 13  DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION
RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.
TCLP (BENZENE)

Empty Container Warning: Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14  TRANSPORT INFORMATION

LAND (DOT)

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>GASOLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class &amp; Division:</td>
<td>3</td>
</tr>
<tr>
<td>ID Number:</td>
<td>1203</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
</tr>
<tr>
<td>ERG Number:</td>
<td>128</td>
</tr>
<tr>
<td>Label(s):</td>
<td>3</td>
</tr>
<tr>
<td>Transport Document Name:</td>
<td>UN1203, GASOLINE, 3, PG II</td>
</tr>
</tbody>
</table>

LAND (TDG)

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>GASOLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class &amp; Division:</td>
<td>3</td>
</tr>
<tr>
<td>UN Number:</td>
<td>1203</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
</tr>
<tr>
<td>Marine Pollutant:</td>
<td>MP: 100 %weight  PP: 0 %weight</td>
</tr>
<tr>
<td>Special Provisions:</td>
<td>17</td>
</tr>
</tbody>
</table>

SEA (IMDG)

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>MOTOR SPIRIT or GASOLINE or PETROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class &amp; Division:</td>
<td>3</td>
</tr>
<tr>
<td>EMS Number:</td>
<td>F-E, S-E</td>
</tr>
<tr>
<td>UN Number:</td>
<td>1203</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
</tr>
<tr>
<td>Label(s):</td>
<td>3</td>
</tr>
<tr>
<td>Transport Document Name:</td>
<td>UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-40°C c.c.)</td>
</tr>
</tbody>
</table>

AIR (IATA)

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>GASOLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class &amp; Division:</td>
<td>3</td>
</tr>
<tr>
<td>UN Number:</td>
<td>1203</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>II</td>
</tr>
<tr>
<td>Label(s) / Mark(s):</td>
<td>3</td>
</tr>
<tr>
<td>Transport Document Name:</td>
<td>UN1203, GASOLINE, 3, PG II</td>
</tr>
</tbody>
</table>
OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, DSL, EINECS, ENCS, KECI, PICCS, TSCA
EPCRA: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.


SARA (313) TOXIC RELEASE INVENTORY:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Typical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUMENE</td>
<td>98-82-8</td>
<td>0 - 1%</td>
</tr>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>0 - 1.5%</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>0 - 20%</td>
</tr>
<tr>
<td>CYCLOHEXANE</td>
<td>110-82-7</td>
<td>0 - 1%</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>110-54-3</td>
<td>0 - 3%</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>91-20-3</td>
<td>0 - 1%</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>0 - 3%</td>
</tr>
<tr>
<td>XYLENES</td>
<td>1330-20-7</td>
<td>0 - 10%</td>
</tr>
<tr>
<td>METHYL-TERT-BUTYL ETHER</td>
<td>1634-04-4</td>
<td>0 - 7%</td>
</tr>
</tbody>
</table>

The Following Ingredients are Cited on the Lists Below:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>List Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19</td>
</tr>
<tr>
<td>CUMENE</td>
<td>98-82-8</td>
<td>1, 4, 13, 16, 17, 18, 19</td>
</tr>
<tr>
<td>CYCLOHEXANE</td>
<td>110-82-7</td>
<td>1, 4, 13, 16, 17, 18, 19</td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>1, 4, 13, 16, 17, 18, 19</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>1, 4, 10, 13, 16, 17, 18, 19</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>86290-81-5</td>
<td>1, 18</td>
</tr>
<tr>
<td>METHYL-TERT-BUTYL ETHER</td>
<td>1634-04-4</td>
<td>1, 16, 17, 18</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>110-54-3</td>
<td>1, 4, 13, 16, 17, 18, 19</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>91-20-3</td>
<td>1, 4, 5, 10, 13, 16, 17, 18, 19</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>1, 4, 11, 13, 15, 16, 17, 18, 19</td>
</tr>
<tr>
<td>XYLENES</td>
<td>1330-20-7</td>
<td>1, 4, 5, 13, 15, 16, 17, 18, 19</td>
</tr>
</tbody>
</table>

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL    6 = TSCA 5a2    11 = CA P65 REPRO    16 = MN RTK
2 = ACGIH A1     7 = TSCA 5e    12 = CA RTK        17 = NJ RTK
3 = ACGIH A2     8 = TSCA 6     13 = IL RTK        18 = PA RTK
4 = OSHA Z       9 = TSCA 12b   14 = LA RTK        19 = RI RTK
5 = TSCA 4       10 = CA P65 CARC 15 = MI 293

Code key: CARC=Carcinogen; REPRO=Reproductive
SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 06: Notification Procedures - Header was modified.
Section 05: Hazardous Combustion Products was modified.
Section 14: Sea (IMDG) - Header was modified.
Section 14: Label(s) - Header was modified.
Composition: Component table was modified.
Section 11: Tox List Cited Table was modified.
Section 15: SARA (313) TOXIC RELEASE INVENTORY - Table was modified.
Section 15: National Chemical Inventory Listing was modified.
Section 16: Synonyms was modified.
Section 06: Notification Procedures was modified.
Composition: Footnotes was modified.
Section 11: Chronic Tox - Component was modified.
Composition: EPA Footnote was added.

SYNONYMS: GASOLINE REGULAR UNLEADED RUL87 DCA DYED WITH ETHANOL, GASOLINE REGULAR UNLEADED RUL87 LDCA WITH ETHANOL, GASOLINE MIDGRADE UNLEADED MUL89 LDCA WITH ETHANOL, GASOLINE MIDGRADE UNLEADED MUL89 DCA WITH ETHANOL, GASOLINE REGULAR UNLEADED RUL87 LDCA DYED WITH ETHANOL, EXXON MIDGRADE GASOLINE WITH ETHANOL, EXXON PREMIUM GASOLINE WITH ETHANOL, EXXON REGULAR GASOLINE WITH ETHANOL, OXYGENATED UNLEADED AUTOMOTIVE GASOLINE CONTAINING ETHANOL, GASOLINE REGULAR UNLEADED RUL87 DCA WITH ETHANOL, GASOLINE REGULAR UNLEADED RUL87 WITH ETHANOL

PRECAUTIONARY LABEL TEXT:
Contains: BENZENE, GASOLINE
DANGER!

HEALTH HAZARDS
Irritating to skin. If swallowed, may be aspirated and cause lung damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).
Target Organs: Lung | Skin |

PHYSICAL HAZARDS
Extremely flammable. Material can accumulate static charges which may cause an incendiary electrical discharge. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

PRECAUTIONS
Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures.

FIRST AID
Inhalation: Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.
Eye: Flush thoroughly with water. If irritation occurs, get medical assistance.

Oral: Seek immediate medical attention. Do not induce vomiting.

Skin: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

FIRE FIGHTING MEDIA
Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

SPILL/LEAK
Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.
SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: GASOLINE, UNLEADED AUTOMOTIVE
Product Description: Hydrocarbons and Additives
Product Code: 123455-20
Intended Use: Fuel, Gasoline

COMPANY IDENTIFICATION

Supplier: Exxon Mobil Corporation
22777 Springwoods Village Parkway
Spring, TX. 77389 USA
24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information 800-662-4525

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 1.

LABEL:

Pictogram:

Signal Word: Danger
Hazard Statements:

Precautionary Statements:

Contains: GASOLINE

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS
Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

HEALTH HAZARDS
High-pressure injection under skin may cause serious damage. May be irritating to the eyes, nose, throat, and lungs. Exposure to benzene is associated with cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Section 11).

ENVIRONMENTAL HAZARDS
Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID: Health: 1 Flammability: 3 Reactivity: 0
NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
<th>GHS Hazard Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>&lt; 11%</td>
<td>H225, H319(2A)</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>86290-81-5</td>
<td>89 - 100%</td>
<td>H224, H304, H336, H340(1B), H350(1B), H315, H401, H411</td>
</tr>
</tbody>
</table>

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
<th>GHS Hazard Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>&lt;= 1.65%</td>
<td>H225, H303, H304, H340(1B), H350(1A), H315, H319(2A), H372, H401</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>1 - 5%</td>
<td>H225, H332, H351</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>110-54-3</td>
<td>1 - 5%</td>
<td>H225, H304, H336, H361(F), H315, H373, H401, H411</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>91-20-3</td>
<td>&lt;1%</td>
<td>H302, H351, H400(M factor 1), H410(M factor 1)</td>
</tr>
<tr>
<td>PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)</td>
<td>95-63-6</td>
<td>1 - 5%</td>
<td>H226, H332, H335, H315, H319(2A), H401, H411</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>5 - 10%</td>
<td>H225, H304, H336, H315, H373, H401, H412</td>
</tr>
<tr>
<td>TRIMETHYL BENZENE</td>
<td>25551-13-7</td>
<td>1 - 5%</td>
<td>H226, H315</td>
</tr>
<tr>
<td>XYLENES</td>
<td>1330-20-7</td>
<td>5 - 10%</td>
<td>H226, H304, H312, H332, H335, H315, H320(2B), H373, H401</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: The concentration of the components shown above may vary substantially. In certain countries, benzene content may be limited to lower levels. Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl ether, and ethyl-tertiary-butyl ether may be present. Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline. The major components of gasoline vapor are: butane, isobutane, pentane, and isopentane. The reportable component percentages, shown in the composition/information on ingredients section, are based on API's evaluation of a typical gasoline mixture. Oxygenates may be present up to the maximum
permitted by European Standard EN228. Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT
Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN
If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This light hydrocarbon material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING
Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Oxides of carbon, Smoke, Fume, Sulfur oxides, Aldehydes, Incomplete combustion products

FLAMMABILITY PROPERTIES
Flash Point [Method]: < -40°C (-40°F) [ASTM D-56]
Flammable Limits (Approximate volume % in air): LEL: 1.4 UEL: 7.6 Autoignition
Temperature: >250°C (482°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES
In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES
Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT
Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.
**Water Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

**ENVIRONMENTAL PRECAUTIONS**

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

**SECTION 7  HANDLING AND STORAGE**

**HANDLING**

Avoid all personal contact. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

**STORAGE**

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Keep away from incompatible materials. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.
### SECTION 8  EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE LIMIT VALUES**

Exposure limits/standards (Note: Exposure limits are not additive)

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>Form</th>
<th>Limit / Standard</th>
<th>NOTE</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>OSHA</td>
<td>Action level</td>
<td>0.5 ppm</td>
<td>N/A</td>
</tr>
<tr>
<td>BENZENE</td>
<td>STEL</td>
<td>5 ppm</td>
<td>N/A</td>
<td>OSHA Sp.Reg.</td>
</tr>
<tr>
<td>BENZENE</td>
<td>TWA</td>
<td>1 ppm</td>
<td>N/A</td>
<td>OSHA Sp.Reg.</td>
</tr>
<tr>
<td>BENZENE</td>
<td>STEL</td>
<td>1 ppm</td>
<td>N/A</td>
<td>ExxonMobil</td>
</tr>
<tr>
<td>BENZENE</td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>N/A</td>
<td>ExxonMobil</td>
</tr>
<tr>
<td>BENZENE</td>
<td>TWA</td>
<td>2.5 ppm Skin</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>TWA</td>
<td>1900 mg/m3 1000 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>STEL</td>
<td>1000 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>TWA</td>
<td>435 mg/m3 100 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>TWA</td>
<td>20 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>STEL</td>
<td>200 ppm</td>
<td>N/A</td>
<td>ExxonMobil</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>TWA</td>
<td>100 ppm</td>
<td>N/A</td>
<td>ExxonMobil</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>STEL</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>TWA</td>
<td>300 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>TWA</td>
<td>1800 mg/m3 500 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>TWA</td>
<td>50 ppm Skin</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>TWA</td>
<td>50 mg/m3 10 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>TWA</td>
<td>10 ppm Skin</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)</td>
<td>TWA</td>
<td>25 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>Ceiling</td>
<td>300 ppm</td>
<td>N/A</td>
<td>OSHA Z2</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>Maximum concentration</td>
<td>500 ppm</td>
<td>N/A</td>
<td>OSHA Z2</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>TWA</td>
<td>200 ppm</td>
<td>N/A</td>
<td>OSHA Z2</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>TWA</td>
<td>20 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>TRIMETHYL BENZENE</td>
<td>TWA</td>
<td>25 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>XYLENES</td>
<td>TWA</td>
<td>435 mg/m3 100 ppm</td>
<td>N/A</td>
<td>OSHA Z1</td>
</tr>
<tr>
<td>XYLENES</td>
<td>STEL</td>
<td>150 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>XYLENES</td>
<td>TWA</td>
<td>100 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>
NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

### Biological limits

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specimen</th>
<th>Sampling Time</th>
<th>Limit</th>
<th>Determinant</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>Creatinine in urine</td>
<td>End of shift</td>
<td>500 ug/g</td>
<td>t,t-Muconic acid</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>BENZENE</td>
<td>Creatinine in urine</td>
<td>End of shift</td>
<td>25 ug/g</td>
<td>S-Phenylmercapturic acid</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>Creatinine in urine</td>
<td>End of shift</td>
<td>0.15 g/g</td>
<td>Sum of mandelic acid and phenylglyoxylic acid</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>Urine</td>
<td>End of shift at end of work wk</td>
<td>0.4 mg/l</td>
<td>2,5-Hexanedion, without hydrolysis</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>No Biological Specimen provided</td>
<td>End of shift</td>
<td>Not Assigned</td>
<td>1-Naphthol, with hydrolysis + 2-Naphthol, with hydrolysis</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>Blood</td>
<td>Prior to last shift of work wk</td>
<td>0.02 mg/l</td>
<td>Toluene</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>Creatinine in urine</td>
<td>End of shift</td>
<td>0.3 mg/g</td>
<td>o-Cresol, with hydrolysis</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>Urine</td>
<td>End of shift</td>
<td>0.03 mg/l</td>
<td>Toluene</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
<tr>
<td>XYLENES</td>
<td>Creatinine in urine</td>
<td>End of shift</td>
<td>1.5 g/g</td>
<td>Methylhippuric acids</td>
<td>ACGIH BELs (BEIs)</td>
</tr>
</tbody>
</table>

### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

- Use explosion-proof ventilation equipment to stay below exposure limits.

### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.
Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

- Chemical resistant gloves are recommended.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

- Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures:

- Always observe good personal hygiene measures, such as washing after handled the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Clear (May Be Dyed)
Odor: Petroleum/Solvent
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.74
Density (at 15 °C): 720 kg/m³ (6.01 lbs/gal, 0.72 kg/dm³) - 758 kg/m³ (6.33 lbs/gal, 0.76 kg/dm³)
Flammability (Solid, Gas): N/A
Flash Point [Method]: < -40°C (-40°F) [ASTM D-56]
Flammable Limits (Approximate volume % in air): LEL: 1.4 UEL: 7.6
Autoignition Temperature: > 250°C (482°F)
Boiling Point / Range: > 20°C (68°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): 3 at 101 kPa
Vapor Pressure: > 26.6 kPa (200 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): > 10 pH:
N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3
Solubility in Water: Negligible
Viscosity: <1 cSt (1 mm²/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION
Freezing Point: N/D
Melting Point: N/A

SECTION 10  STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: None

MATERIALS TO AVOID: Halogens, Strong Acids, Alkalies, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11  TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Conclusion / Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td></td>
</tr>
<tr>
<td>Acute Toxicity: (Rat) 4 hour(s) LC50 &gt; 5000 mg/m³ (Vapor)</td>
<td>Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403</td>
</tr>
<tr>
<td>Irritation: No end point data for material.</td>
<td>Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.</td>
</tr>
<tr>
<td>Ingestion</td>
<td></td>
</tr>
<tr>
<td>Acute Toxicity (Rat): LD50 &gt; 5000 mg/kg</td>
<td>Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401</td>
</tr>
<tr>
<td>Skin</td>
<td></td>
</tr>
<tr>
<td>Acute Toxicity (Rabbit): LD50 &gt; 2000 mg/kg</td>
<td>Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402</td>
</tr>
</tbody>
</table>
### Skin Corrosion/Irritation (Rabbit): Data available.
Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404

### Eye
Serious Eye Damage/Irritation (Rabbit): Data available.
May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405

### Sensitization
Respiratory Sensitization: No end point data for material.
Not expected to be a respiratory sensitizer.

Skin Sensitization: Data available.
Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406

### Aspiration: Data available.
May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.

### Germ Cell Mutagenicity: Data available.
Caused genetic effects in laboratory animals, but the relevance to humans is uncertain. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475 476

### Carcinogenicity: Data available.
Caused cancer in laboratory animals. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451

### Reproductive Toxicity: Data available.
Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 416 421

### Lactation: No end point data for material.
Not expected to cause harm to breast-fed children.

### Specific Target Organ Toxicity (STOT)
Single Exposure: No end point data for material.
May cause drowsiness or dizziness.

Repeated Exposure: Data available.
Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 412 453

## TOXICITY FOR SUBSTANCES

<table>
<thead>
<tr>
<th>NAME</th>
<th>ACUTE TOXICITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL BENZENE</td>
<td>Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor) (Rat); Oral Lethality: LD50 3.5 g/kg (Rat)</td>
</tr>
<tr>
<td>NAPHTHALEN</td>
<td>Inhalation Lethality: 4 hour(s) LC50 &gt; 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)</td>
</tr>
</tbody>
</table>

### OTHER INFORMATION

For the product itself:

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk.
Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias.

Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

Contains:

**BENZENE**: Caused cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies.

**ETHANOL**: Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring.

**NAPHTHALENE**: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

**N-HEXANE**: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

**TOLUENE**: Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

**TRIMETHYLBENZENE**: Long-term inhalation exposure of trimethylbenzene caused effects to the blood in laboratory animals.

**ETHYLBENZENE**: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

---

The following ingredients are cited on the lists below:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>List Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAPHTHALENE</td>
<td>91-20-3</td>
<td>2, 5</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>86290-81-5</td>
<td>5</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>5</td>
</tr>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>1, 3, 6</td>
</tr>
</tbody>
</table>
--REGULATORY LISTS SEARCHED--

1 = NTP CARC  3 = IARC 1  5 = IARC 2B
2 = NTP SUS   4 = IARC 2A  6 = OSHA CARC

**SECTION 12  ECOLOGICAL INFORMATION**

The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**
Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**MOBILITY**
More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.
Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

**PERSISTENCE AND DEGRADABILITY**

*Biodegradation:*
Majority of components -- Expected to be inherently biodegradable

*Atmospheric Oxidation:*
More volatile component -- Expected to degrade rapidly in air

**BIOACCUMULATION POTENTIAL**
Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

**SECTION 13  DISPOSAL CONSIDERATIONS**

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.
REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY. TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)
 Proper Shipping Name: GASOLINE
 Hazard Class & Division: 3
 ID Number: 1203
 Packing Group: II
 Marine Pollutant: Yes
 ERG Number: 128
 Label(s): 3
 Transport Document Name: UN1203, GASOLINE, 3, PG II, MARINE POLLUTANT

LAND (TDG)
 Proper Shipping Name: GASOLINE
 Hazard Class & Division: 3
 UN Number: 1203
 Packing Group: II
 Special Provisions: 17

SEA (IMDG)
 Proper Shipping Name: MOTOR SPIRIT or GASOLINE or PETROL
 Hazard Class & Division: 3
 EMS Number: F-E, S-E
 UN Number: 1203
 Packing Group: II
 Marine Pollutant: Yes
 Label(s): 3
 Transport Document Name: UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-40°C c.c.), MARINE POLLUTANT
AIR (IATA)

Proper Shipping Name: MOTOR SPIRIT or GASOLINE or PETROL
Hazard Class & Division: 3
UN Number: 1203
Packing Group: II
Label(s) / Mark(s): 3
Transport Document Name: UN1203, GASOLINE, 3, PG II

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, KECI, PICCS, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.


SARA (313) TOXIC RELEASE INVENTORY:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Typical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)</td>
<td>95-63-6</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>&lt;= 1.65%</td>
</tr>
<tr>
<td>NAPTHALENE</td>
<td>91-20-3</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>110-54-3</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>XYLENES</td>
<td>1330-20-7</td>
<td>5 - 10%</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>5 - 10%</td>
</tr>
</tbody>
</table>

The following ingredients are cited on the lists below:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>List Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>71-43-2</td>
<td>1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19</td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>1, 4, 13, 16, 17, 18</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>1, 4, 10, 13, 16, 17, 18, 19</td>
</tr>
</tbody>
</table>
This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H224: Extremely flammable liquid and vapor; Flammable Liquid, Cat 1
H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2
H226: Flammable liquid and vapor; Flammable Liquid, Cat 3
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H303: May be harmful if swallowed; Acute Tox Oral, Cat 5
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H312: Harmful in contact with skin; Acute Tox Dermal, Cat 4
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
H320(2B): Causes eye irritation; Serious Eye Damage/Irr, Cat 2B
H332: Harmful if inhaled; Acute Tox Inh, Cat 4
H335: May cause respiratory irritation; Target Organ Single, Resp Irr
H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic
H340(1B): May cause genetic defects; Germ Cell Mutagenicity, Cat 1B
H350(1A): May cause cancer; Carcinogenicity, Cat 1A
H350(1B): May cause cancer; Carcinogenicity, Cat 1B
H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2
H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)
H361(F): Suspected of damaging fertility; Repro Tox, Cat 2 (Fertility)
H372: Causes damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 1
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Updates made in accordance with implementation of GHS requirements.

THIS MSDS COVERS THE FOLLOWING MATERIALS: ESSO EXTRA MIDGRADE UNLEADED | ESSO MIDGRADE UNLEADED | ESSO PREMIUM UNLEADED | ESSO SUPER PREMIUM UNLEADED | EXXON MIDGRADE UNLEADED | EXXON PREMIUM UNLEADED | EXXON REGULAR UNLEADED | GASOLINE | INDOLENE GASOLINE | MIDGRADE UNLEADED | MOBIL EXTRA UNLEADED | MOBIL REGULAR UNLEADED | MOBIL SPECIAL UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED GASOLINE

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Internal Use Only

MHC: 1A, 0B, 0, 0, 4, 1

PPEC: CF

DGN: 2000316XUS (1011203)

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SECTION I - PRODUCT IDENTIFICATION

Product Name: Wood Fiberboard
Synonyms: Fiberboard, Regular Sheathing, Fiber Brace, Fiber Base HD, Sound Choice, TemFibre, Fiberboard, Wood Fiberboard, Low Density Fiberboard, Industrial Fiberboard
Chemical Family: N/A
Chemical Formula: N/A
CAS Number: None
MANUFACTURER'S ADDRESS: Georgia Pacific Panel Prod
133 Peachtree St
Atlanta GA 30303
Ed ID: 46-1699660
24-Hour Emergency Contact: 24 9300 CCN9376
Date Prepared or Revised: 013

SECTION II - HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS #</th>
<th>EXPOSURE LIMIT (OSHA)</th>
<th>EXPOSURE LIMIT (ACGIH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td>8052-42-4</td>
<td>5.0 mg/m TWA</td>
<td>5.0 mg/m³ TWA</td>
</tr>
<tr>
<td>PNOR-Wood Fiber/Dust/Ligno cellulose fibers (1, 2, 3)</td>
<td>None</td>
<td>15.0 mg/m Total Dust</td>
<td>All other species 1.0 mg/m³ Inhalable particulate mass</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mg/m Respirable</td>
<td>Western Red Cedar 0.5 mg/m³ Inhalable particulate mass</td>
</tr>
</tbody>
</table>

(1) In AFL-CIO v. OSHA 955 F. 2d 962 (11th Cir 1992) the court overturned OSHA's 1989 Air Contaminants Rule, including the specific PELs for wood dust. The 1989 PELs were: TWA-5.0 mg/m³, STEL(15min)-1.0.0 mg/m³ (all soft and hardwoods, except Western red cedar). Western red cedar: TWA-2.5 mg/m³.

(2) Wood dust is regulated by OSHA as an organic dust under Particulates Not Otherwise Regulated (PNOR). It is not a Nuisance Dust category utilizing the PELs in Section II. Some States have incorporated provisions of the 1989 standard into their state plans. Additionally, OSHA has announced that the may cite companies under the General Duty Clause under inappropriate circumstances for non-compliance with the 1989 PELs.

(3) The Company manufactures this product using locally available materials. The composition of wood types will vary depending on the location of the manufacturing facility and available wood species. The ACGIH TLV for Western red cedar is 0.5 mg/m³ inhalable particulate mass. The ACGIH TLV for all other wood species is 1.0 mg/m³ inhalable particulate mass. The Company does not intentionally use Western red cedar in the manufacturing process. Various hardwoods are used at some manufacturing locations.

SECTION III - PHYSICAL PROPERTIES

DESCRIPTION

Composite panel product composed of naturally occurring binders, wax and wood fibers/lingo cellulose fibers of varying percent (dependent on properties and thickness) pressed into panels of various sizes (normally 4 ft. X 8 ft.). Light tan to dark brown or black with an asphalt coating.
PHYSICAL DATA

Boiling Point - Not Applicable
Specific Gravity - < 1
Vapor Density - Not Applicable
Vapor Pressure - Not Applicable
Solubility in Water (H₂O) (% BY WT.) - Insoluble
Evaporation Rate (Butyl Acetate = 1) - Not Applicable
pH - Not Applicable
Appearance And Odor - Light to dark colored solid or black. Color and odor are dependent on the wood species and time since board was manufactured.

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point - Not Applicable
Auto Ignition Temperature - 425 - 475 degrees F
Flammable Limits - Wood Panel, Piloted flame - 500 degrees F
Fire Extinguishing Media - Water Spray, Carbon Dioxide
Special Fire Fighting Procedures - Use Class A firefighting procedures for wood products are well known. Water and Class A foam should firefighting help as necessary

Unusual Fire And Explosion Hazards - This product does not present a fire or explosion hazard. Sanding or machining this product could result in the creation of wood dust and or the dust may present a strong fire hazard contained in NFPA Standard

SECTION V - HEALTH HAZARD DATA

EXPOSURE ACUTE AND CHRONIC

Wood Dust/Fiber May cause nasal dryness, irritation and mucostasis. Coughing, wheezing, sneezing, sinusitis and prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or irritation. If irritation persists, seek medical attention.

Signs and Symptoms of Exposure to Wood Dust Acute May cause eye irritation, nasal dryness, irritation and obstruction. Certain species may cause allergic dermatitis to certain individuals. If irritation persists, seek medical attention. Chronic Depending on species of wood, wood dust may cause allergic dermatitis from repetitive contact at elevated levels. Certain elevated levels and prolonged exposures to wood dust have been associated with nasal cancer. IARC classifies wood dust, depending on species, as a carcinogen to humans (group 1). This classification is primarily based on studies showing an association between occupational exposure to wood dust and adenocarcinoma of the nasal cavities and paranasal sinuses. IARC did not find sufficient evidence of an association between occupational exposure to wood dust and cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum. NTP classifies wood dust as a known human carcinogen.

EXPOSURE AND PERSONAL PROTECTION INFORMATION

Engineering Controls Wood Dust Due to the potential explosive nature of wood dust/fiber when suspended in air, adequate precaution should be taken during pneumatic/conveyor moving, sawing, sanding, drilling, machining, etc. of wood products to prevent sparks or other sources of ignition near these activities. Provide adequate general and local ventilation to keep airborne contaminant concentration levels below the OSHA PEL. Employ good safety and personal hygiene practices.
Respiratory protection- Use of a NIOSH/MSHA approved respirator when the permissible exposure limits for wood fiber/dust may be exceeded.
Eye Protection- Wear side shield safety glasses or goggles during handling or remanufacturing this product
Skin Protection- Wear gloves when handling this product. Wear protective clothing/outer garments as needed to prevent exposure.
General Hygiene- Practice proper personal hygiene.

EMERGENCY FIRST AID PROCEDURES

Inhalation- Remove to fresh air. If irritation or other symptoms persist, seek medical attention.
Eyes - Wash material from eyes with clean running water. If irritation persists, seek medical attention.
Skin - If skin is abraded, utilize proper first aid procedures and seek medical attention.
Ingestion - N/A

TOXICOLOGICAL

Wood Dust - OSHA hazard rating for oral ingestion is moderately toxic for both softwood and hardwood. The OSHA suggested oral lethal dose is 0.5 to 5 g/kg or about 1 pound (dry) for an approximately 150 pound person. Activities that could generate wood dust (sawing, drilling, grinding, sanding, machining, etc.) should be avoided and or dust control methods employed. If wood fiber/dust is generated, steps should be taken to reduce exposure. Good Industrial Hygiene procedures should be implemented.

SECTION VI - REACTIVITY AND STABILITY DATA

Stability - Stable
Conditions To Avoid - Avoid product contact with any temperature sources that could induce thermal decomposition.
Incompatibility (materials to avoid) - Strong oxidizing agents, strong acids
Hazardous Decomposition Products - Thermal and/or thermal-oxidative decomposition can produce irritating and potentially toxic fumes and gases, including carbon monoxide, hydrogen cyanide, polynuclear aromatic hydrocarbons, aldehydes and organic acids.
Hazardous Polymerization - Will not occur

SECTION VII - HANDLING AND STORAGE

STORAGE

Storage- This product should not be stored where exposure to water could occur or near a source of ignition. Avoid storing in areas of high relative humidity and temperature. It is recommended that the product be stored in an area that reflects the temperature and relative humidity of the end use of this product.

HANDLING

Precautions and Safe Handling: Provide adequate dry storage area.
Steps to Be Taken If Spilled or Released: See storage and recycle/disposal section
Waste Disposal Method: Incinerate, recycle or landfill in accordance with local, state, provincial and federal regulations.
RECYCLE/DISPOSAL CONSIDERATIONS

Recycle- This panel product is recyclable
Disposal- It is the user’s responsibility to determine whether your product meets any applicable criteria for waste disposal whether hazardous or non hazardous. All recycle and or disposal activities must meet applicable federal, provincial, state and local regulations.

ACCIDENTAL RELEASE

Steps to Be Taken If Product Is Spilled or Released Should not be applicable for product in purchased form. Fibers/dust generated from any remanufacturing activity should be vacuumed, etc. and recycled or used for energy recovery, etc. Any disposal must comply with all applicable requirements (see above).

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION

Respirator- The wearing of NIOSH approved breathing protection for exposure to wood dust/fiber. Respirators are required if air contaminant(s) exceed OSHA PEL.

VENTILATION

Local Exhaust Necessary to remove dust/fiber in sanding, sawing, drilling, machining, etc. processes. As necessary to maintain contaminant levels below applicable levels.
Mechanical: As necessary to remove and or reduce contaminant levels below applicable levels.

EYE PROTECTION

Eye Protection- Wear appropriate eye protection or safety goggles to prevent potential contaminate exposure.

SECTION IX - REGULATORY INFORMATION

TSCA- This product complies with TSCA inventory requirements.
OSHA- While the panel product does not meet the criteria of 29 CFR 1910.1200 (Hazcom), wood dust/fiber emissions from this product, when the product is stored and or sanded, sawed, drilled, broken machined, etc. may be hazardous by definition and trigger Hazcom requirements. It is the responsibility of the purchaser and subsequent users/remanufacturers to determine applicability.

WHMIS- This product is not considered a controlled product.

DOT (Department of Transportation) The user should comply with all applicable DOT requirements. Federal, Provincial, State, Local regulations and labels.

SARA/CERCLA - This product does not contain chemical(s) in concentrations that should require reporting under SARA 313.

ODS- During the manufacture of this product there is no intended use of listed ozone depleting chemicals as defined in applicable EPA regulations.

CALIFORNIA PROPOSITION 65 Safe Drinking Water and Toxic Enforcement Act: Title 22 California Code of Regulations

California Proposition 65 provides for labeling and disclosure of the presence of a chemical(s) known to the State of California to cause cancer or reproductive toxicity. This product should not present a significant risk to users. This product may emit wood fiber/dust while handling the product and or during remanufacturing, nailing, drilling, sanding, etc. of this product.

PENNSYLVANIA- Wood Dust is a substance that appears on the States Appendix A Hazardous Substance List. This product may emit wood fiber/dust while handling the product and or during remanufacturing, nailing, drilling, sanding, etc. of this product.
DISCLAIMER: The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Georgia Pacific and its affiliates make no warranty of any kind, expressed or implied, concerning the accuracy or completeness of the information and data herein. The implied warranties of merchantability and fitness for a particular purpose are specifically excluded. Georgia Pacific and its affiliates will not be liable for claims relating to any party’s use of or reliance on information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading.
SECTION I - PRODUCT IDENTIFICATION

Product Name: Wood Fiberboard
Synonyms: Fiberboard, Regular Sheathing, Fiber Brace, Fiber Base HD, Sound Choice, TemFibre, Fiberboard, Wood Fiberboard, Low Density Fiberboard, Industrial Fiberboard
Chemical Family: N/A
Chemical Formula: N/A
CAS Number: None
MANUFACTURER'S ADDRESS: Georgia Pacific Panel Prod
133 Peachtree St
Atlanta GA 30303
Fed ID: 46-1699660
24-Hour Emergency Contact: 249300 CCN9976
Date Prepared or Revised: 

SECTION II HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS #</th>
<th>EXPOSURE LIMIT (OSHA)</th>
<th>EXPOSURE LIMIT (ACGIH)</th>
</tr>
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<td>Asphalt</td>
<td>8052-42-4</td>
<td>5.0 mg/m³ TWA</td>
<td>5.0 mg/m³ TWA</td>
</tr>
<tr>
<td>PNOR-Wood Fiber/Dust/Ligno cellulose fibers (1, 2, 3)</td>
<td>None</td>
<td>15.0 mg/m³ Total Dust</td>
<td>All other species</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mg/m³ Respirable</td>
<td>1.0 mg/m³ Inhalable particulate mass</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Western Red Cedar</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.5 mg/m³ Inhalable particulate mass</td>
</tr>
</tbody>
</table>

(1) In AFL-CIO v. OSHA 965 F. 2d 962 (11th Cir 1992) the court overturned OSHA's 1989 Air Contaminants Rule, including the specific PELs for wood dust. The 1989 PELs were: TWA: 5.0 mg/m³ STEL: 15.0 mg/m³ 10.0 mg/m³ (all soft and hardwoods, except Western red cedar). Western red cedar: TWA: 2.5 mg/m³.

(2) Wood dust is regulated by OSHA as an organic dust under Particulates Not Otherwise Regulated (PNOR). Inert or Nuisance Dust categories utilizing the PELs in Section II. Some States have incorporated provisions of the 1989 standard into their state plans. Additionally, OSHA has announced that the company may be companies operating the OSHA Act General Duty Clause under appropriate circumstances for non-compliance with the 1989 PELs.

(3) The Company manufactures this product using locally available materials. The composition of wood types will vary depending on the location of the manufacturing facility and available wood species. The ACGIH TLV for Western red cedar is 0.5 mg/m³ inhalable particulate mass. The ACGIH TLV for all other wood species is 10 mg/m³ inhalable particulate mass. The Company does not intentionally use Western red cedar in the manufacturing process. Various hardwoods are used at some manufacturing locations.

SECTION III PHYSICAL PROPERTIES

DESCRIPTION

Composite panel product composed of naturally occurring binders wax and wood fibers/ligno cellulose fibers of varying percent (dependent on properties and thickness) pressed into panels of various sizes (normally 4 ft. x 8 ft.) Light tan to dark brown or black with an asphalt coating.
PHYSICAL DATA

Boiling Point - Not Applicable  
Specific Gravity - < 1  
Vapor Density - Not Applicable  
Vapors by Volume - Not Applicable  
Melting Point - Not Applicable  
Vapor Pressure - Not Applicable  
Solubility in Water (H₂O) (% BY WT.) - Insoluble  
Evaporation Rate (Butyl Acetate = 1) - Not Applicable  
PH - Not Applicable  
Appearance And Odor - Light to dark colored solid or black  
Color and odor are dependent on the wood species and  
time since board was manufactured.

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point - Not Applicable  
Auto Ignition Temperature - 425 - 475 degrees F  
Flammable Limits – Wood Panel, Piloted flame – 500 degrees F  
Fire Extinguishing Media – Water Spray, Carbon Dioxide  
Special Fire Fighting Procedures – Use Class A firefighting procedures for  
procedures for wood products are well known. Water and Class A foam should  
fighting help as necessary  
Unusual Fire And Explosion Hazards –This product does not present a fire or ex  
sanding or machining this product could result in the creation of wood dust and or  
dust may present a strong contained in NFPA Standard

SECTION V - HEALTH HAZARD DATA

EXPOSURE ACUTE AND CHRONIC

Wood Dust/Fiber May cause nasal dryness, irritation and mucostasis Coughing, wheezing, sneezing, sinusitis and  
prolonged colds have also been reported. Depending on wood species may cause respiratory sensitization and/or  
inflammation. If irritation persists seek medical attention.  
Signs and Symptoms of Exposure to Wood Dust Acute May cause eye irritation, nasal dryness, irritation and  
obstruction. Certain species may cause allergic dermatitis to certain individuals. If irritation persists, seek medical  
attention. Chronic—Depending on species of wood, wood dust may cause allergic dermatitis from repetitive contact at  
elevated levels. Certain elevated levels and prolonged exposures to wood dust have been associated with nasal cancer  
IARC classified wood dust, depending on species as a carcinogen to humans (group 1). This classification is primarily  
based on studies showing an association between occupational exposure to wood dust and adenocarcinoma of the nasal  
cavities and paranasal sinuses. IARC did not find sufficient evidence of an association between occupational exposure  
to wood dust and cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon  
or rectum. NTP classifies wood dust as a known human carcinogen.

EXPOSURE AND PERSONAL PROTECTION INFORMATION

Engineering Controls Wood Dust Due to the potential explosive nature of wood dust/fiber when suspended in air,  
adequate precaution should be taken during pneumatic/conveyor moving, sawing, sanding, drilling, machining, etc. of  
wood products to prevent sparks or other sources of ignition near these activities. Provide adequate general and local  
ventilation to keep airborne contaminant concentration levels below the OSHA PEL. Employ good safety and personal  
hygiene practices.
Respiratory protection- Use of a NIOSH/MSHA approved respirator when the permissible exposure limits for wood fiber/dust may be exceeded.
Eye Protection- Wear side shield safety glasses or goggles during handling or remanufacturing this product
Skin Protection- Wear gloves when handling this product. Wear protective clothing/outer garments as needed to prevent exposure.
General Hygiene- Practice proper personal hygiene.

EMERGENCY FIRST AID PROCEDURES

Inhalation- Remove to fresh air. If irritation or other symptoms persist, seek medical attention.
Eyes - Wash material from eyes with clean running water. If irritation persists, seek medical attention.
Skin - If skin is abraded, utilize proper first aid procedures and seek medical attention.
Ingestion - N/A

TOXICOLOGICAL

Wood Dust- OSHA hazard rating for oral ingestion is moderately toxic for both softwood and hardwood. The OSHA suggested oral lethal dose is 0.5 to 5 g/kg or about 1 pound (dry) for an approximately 150 pound person. Activities that could generate wood dust (sawing, drilling, grinding, sanding, machining, etc.) should be avoided and dust control methods employed. If wood fiber/dust is generated, steps should be taken to reduce exposure. Good Industrial Hygiene procedures should be implemented.

SECTION VI - REACTIVITY AND STABILITY DATA

Stability - Stable
Conditions To Avoid - Avoid product contact with any temperature sources that could induce thermal decomposition.
Incompatibility (materials to avoid) - Strong oxidizing agents, strong acids
Hazardous Decomposition Products - Thermal and/or thermal-oxidative decomposition can produce irritating and potentially toxic fumes and gases, including carbon monoxide, hydrogen cyanide, polynuclear aromatic hydrocarbons, aldehydes and organic acids.
Hazardous Polymerization - Will not occur

SECTION VII - HANDLING AND STORAGE

STORAGE

Storage- This product should not be stored where exposure to water could occur or near a source of ignition. Avoid storing in areas of high relative humidity and temperature. It is recommended that the product be stored in an area that reflects the temperature and relative humidity of the end use of this product.

HANDLING

Precautions and Safe Handling: Provide adequate dry storage area.
Steps to Be Taken If Spilled or Released: See storage and recycle/disposal section
Waste Disposal Method: Incinerate, recycle or landfill in accordance with local, state, provincial and federal regulations.
RECYCLE/DISPOSAL CONSIDERATIONS

Recycle- This panel product is recyclable
Disposal: It is the user's responsibility to determine whether your product meets any applicable criteria for waste disposal whether hazardous or non hazardous. All recycle and or disposal activities must meet applicable federal, provincial, state and local regulations.

ACCIDENTAL RELEASE

Steps to Be Taken If Product Is Spilled or Released Should not be applicable for product in purchased form. Fibers/dust generated from any remanufacturing activity should be vacuumed, etc. and recycled or used for energy recovery, etc. Any disposal must comply with all applicable requirements (see above).

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION

Respirator- The wearing of NIOSH approved breathing protection for exposure to wood dust/fiber. Respirators are required if air contaminant(s) exceed OSHA PEL.

VENTILATION

Local Exhaust Necessary to remove dust/fiber in sanding, sawing, drilling, machining, etc. processes. As necessary to maintain contaminant levels below applicable levels
Mechanical: As necessary to remove and or reduce contaminant levels below applicable levels.

EYE PROTECTION

Eye Protection- Wear appropriate eye protection or safety goggles to prevent potential contaminate exposure.

SECTION IX - REGULATORY INFORMATION

TSCA- This product complies with TSCA inventory requirements.
OSHA- While the panel product does not meet the criteria of 29 CFR 1910.1200 (Hazcom), wood dust/fiber emissions from this product, when the product is stored and or sanded, sawed, drilled, broken machined, etc. may be hazardous by definition and trigger Hazcom requirements. It is the responsibility of the purchaser and subsequent users/remanufacturers to determine applicability.

WHMIS- This product is not considered a controlled product.

DOT (Department of Transportation) The user should comply with all applicable DOT requirements. Federal, Provincial, State, Local regulations and labels.

SARA/CERCLA - This product does not contain chemical(s) in concentrations that should require reporting under SARA 313.

ODS- During the manufacture of this product there is no intended use of listed ozone depleting chemicals as defined in applicable EPA regulations.

CALIFORNIA PROPOSITION 65 Safe Drinking Water and Toxic Enforcement Act: Title 22 California Code of Regulations
California Proposition 65 provides for labeling and disclosure of the presence of a chemical(s) known to the State of California to cause cancer or reproductive toxicity. This product should not present a significant risk to users. This product may emit wood fiber/dust while handling the product and or during remanufacturing, nailing, drilling, sanding, etc. of this product.

PENNSYLVANIA- Wood Dust is a substance that appears on the States Appendix A Hazardous Substance List. This product may emit wood fiber/dust while handling the product and or during remanufacturing, nailing, drilling, sanding, etc. of this product.
DISCLAIMER. The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Georgia Pacific and its affiliates make no warranty of any kind, expressed or implied, concerning the accuracy or completeness of the information and data herein. The implied warranties of merchantability and fitness for a particular purpose are specifically excluded. Georgia Pacific and its affiliates will not be liable for claims relating to any party’s use of or reliance on information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading.
WOOD AND WOOD PRODUCTS

Building Materials - Structural, Industrial or Decorative

Solid wood, such as lumber and wood products, such as softwood plywood, hardboard, oriented strand board and engineered wood products bonded with resin (phenol, phenol resorcinol, melamine formaldehyde-based, or polyvinyl acetate).

See Product List found in Section 16

Softwood Plywood * Oriented Strand Board (OSB) * Hardboard (Standard, Tempered, Perforated, Paneling) * Lumber Products * Engineered Lumber (LVL, Wood-I-joists, Rimboard)

Georgia-Pacific Wood Products LLC
133 Peachtree Street, NE
Atlanta, GA 3030
MSDS Request 404.652.5119
Technical Information 800.284.5347
Chemetrec - Emergency 800.424.9300

Sawing, sanding or machining wood or wood products can generate dust. Wood dust may ignite or form explosive mixture with air in the presence of an ignition source. Product dust may be irritating to eyes, skin or respiratory system.

Dust or splinters may cause irritation or injury to the eyes.
Contact with skin may cause irritation.
Dusts of this product may cause irritation to the nose, throat, or respiratory tract.
Due to material form and application, ingestion is considered unlikely. May result in irritation of the digestive tract.

Eyes, skin, gastrointestinal tract, and respiratory system
3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>Not Assigned</td>
<td>60 - 100</td>
</tr>
</tbody>
</table>

**Composition comments** Some lumber products may be sprayed with sap stain control coatings. The lumber is air or kiln dried. No chemical residue is left on the surface of the board. Wood products are bonded with phenol, phenol resorcinol, melamine formaldehyde-based, or polyvinyl acetate resin. Some wood products may be coated with finishes, sealants and or overlays.

4. First Aid Measures

**First aid procedures**

- **Eye contact** In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes. Do not rub the eyes. Get medical attention immediately.
- **Skin contact** If irritation develops, wash with soap and water. Get medical attention if irritation persists.
- **Inhalation** Remove from area of exposure. If the affected person is not breathing, apply artificial respiration. If persistent irritation, severe coughing or breathing difficulty occurs, seek medical attention.
- **Ingestion** If wood or wood dust is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

5. Fire Fighting Measures

**Extinguishing media**

Suitable extinguishing media Use methods for the surrounding fire.

1. Product and Company Identification
Fire fighting equipment/instructions: Firefighters should wear full protective clothing including self contained breathing apparatus. Partially burned dust is especially hazardous if dispersed into the air. Wet down to reduce likelihood of ignition or dispersion. Remove burned or wet dust to open, secure area after fire is extinguished.

Explosion data:
- Sensitivity to static discharge: Not available
- Sensitivity to mechanical impact: Not available

Hazardous combustion products: Hazardous decomposition products may include irritating fumes or gases including carbon monoxide, aldehydes or organic acids.

6. Accidental Release Measures

Personal precautions: Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Avoid inhalation of dust during clean up.

Methods for cleaning up: Vacuum or wet sweep small wood pieces and dust; place in appropriate container for disposal. Gather larger pieces by an appropriate method. Reduce airborne dust by use of wet methods and prevent scattering by moistening with water.

7. Handling and Storage

Handling: Dust can form an explosive mixture in air. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Use personal protective equipment as required. Avoid frequent or prolonged inhalation of wood dust. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling. Keep away from heat and sources of ignition. Keep formation of airborne dusts to a minimum.

Storage: Store flat, supported and protected from direct contact with the ground. Keep in a well-ventilated place away from incompatible materials. Store in a cool dry place.

8. Exposure Controls / Personal Protection

Occupational exposure limits:

<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOOD/WOOD DUST (Not Assigned)</td>
<td>TWA</td>
<td>0.5 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 mg/m3</td>
<td>(Inhalable)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U.S. - OSHA Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOOD/WOOD DUST (Not Assigned)</td>
<td>STEL</td>
<td>10 mg/m3</td>
<td>(Vacated)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>(Total dust) (Vacated)</td>
</tr>
</tbody>
</table>

Exposure guidelines: Georgia-Pacific Wood Products LLC voluntarily elects to adhere to exposure limits contained in OSHA's 1989 Air Contaminants Standard although certain limits were vacated in 1992. The present OSHA exposure limits governing wood dust is 15 mg/m3 (Total Dust) and 5 mg/m3 (Respirable Fraction).

Engineering controls: Due to the explosive potential of dust when suspended in air, precautions should be taken when sawing, sanding, or machining wood or wood products to prevent sparks or other ignition sources in ventilation equipment. Local exhaust ventilation is recommended when sawing, sanding, or machining this product. General dilution ventilation is recommended in processing and storage areas. Use wet methods, if appropriate, to reduce generation of dust.

Personal protective equipment:
- Eye / face protection: Safety glasses or goggles are recommended when using this product. Ensure compliance with OSHA’s PPE standard (29 CFR 1910.132 and .133) for eye and face protection.
- Skin protection: Impervious protective clothing and gloves recommended to prevent drying or irritation of skin. Ensure compliance with OSHA’s PPE standards (29 CFR 1910.132 (general) and 138 (hand protection)). Safety shower/eye wash fountain is recommended in the workplace area (29 CFR 1910.151 (c)).
Respiratory protection  A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

9. Physical & Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Rigid boards or panels</td>
</tr>
<tr>
<td>Color</td>
<td>Various</td>
</tr>
<tr>
<td>Form</td>
<td>Solid wood</td>
</tr>
<tr>
<td>Odor</td>
<td>Resinous wood</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>Combustible</td>
</tr>
<tr>
<td>Flammability limits in air, upper, % by volume</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability limits in air, lower, % by volume</td>
<td>&gt;= 40 g/m3 for wood dust</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Variable</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>399.2 - 500 °F (204.4 - 260 °C) for wood</td>
</tr>
</tbody>
</table>

10. Chemical Stability & Reactivity Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable at normal conditions.</td>
</tr>
<tr>
<td>Conditions of reactivity</td>
<td>None known.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Strong acids, alkalis, oxidizing agents and drying oils.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Thermal decomposition may emit irritating fumes or gases of carbon monoxide, carbon dioxide, aldehydes, or organic acids.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

11. Toxicological Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicological information</td>
<td>No toxicological data available for this product. Toxicological information for components of this product is listed below. Repeated inhalation of dust from this product may result in respiratory irritation. WOOD DUST. Wood dust may cause dryness, irritation, coughing or sinusitis. IARC and NTP classify wood dust as a carcinogen. This classification is based on the increased occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation noted insufficient evidence to associate cancer of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust. WOOD DUST. Wood dust may cause dryness, irritation, coughing or sinusitis. IARC and NTP classify wood dust as a carcinogen due to cancers of the upper respiratory system.</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Not applicable for softwoods.</td>
</tr>
<tr>
<td>ACGIH Sensitizer</td>
<td>WOOD/WOOD DUST (CAS Not Assigned)</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>US ACGIH Threshold Limit Values: Sensitiser</td>
</tr>
</tbody>
</table>
ACGIH Carcinogens
WOOD/WOOD DUST (CAS Not Assigned)  US ACGIH Threshold Limit Values: A1 carcinogen
US ACGIH Threshold Limit Values: A2 carcinogen

IARC Monographs Overall Evaluation of Carcinogenicity
WOOD/WOOD DUST (CAS Not Assigned)  1 Volume 62, Volume 100C
US NTP Report on Carcinogens: Known carcinogen
WOOD/WOOD DUST (CAS Not Assigned)  US NTP Report on Carcinogens: Known carcinogen

Mutagenicity  Not available.
Reproductive effects  Not available.
Teratogenicity  Not available.
Synergetic materials  Not applicable.

12. Ecological Information
Ecotoxicity  Not available.
Environmental effects  Not available.

13. Disposal Considerations
Disposal instructions  Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of material according to Local, State, Federal, and Provincial Environmental Regulations.

14. Transport Information
DOT  Not regulated as dangerous goods.
TDG  Not regulated as dangerous goods.

15. Regulatory Information
Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance  No
Section 311 hazardous chemical  Yes
Section 313 hazardous chemical  No

US federal regulations
Wood and wood products are considered manufactured articles and are exempt under OSHA’s Hazard Communication Standard 29 CFR 1910.1200. Wood dust, a by-product generated from sawing, sanding or machining wood and wood products, is considered hazardous and is regulated under the Hazard Communication Standard 29 CFR 1910.1200.

California Proposition 65. WARNING: This product contains chemicals known to the state of California to cause cancer. Drilling, sawing, sanding or machining wood products generates wood dust and titanium dioxide particles, both chemicals are known to the state of California to cause cancer. Avoid inhaling such dust and particles; use a dust mask or other safeguards for personal protection.

WHMIS status
Exempt

Inventory status
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA)</td>
<td>Yes</td>
</tr>
</tbody>
</table>
A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Product list
Engineered Lumber Wood I Beam™ Joists and Broadspan™ I-Joists, GP Lam® LVL and Broadspan™ LVL, Fiberstrong® Rim Board

Product list
Lumber Sta-Strait™ Finger-Jointed Southern Yellow Pine Lumber, Solid Sawn Wood


Oriented Strand Board (OSB) Oriented Strand Board (OSB), OSB Sturd-I-Floor®, OSB Rated Sheathing, Home Advantage® OSB Sturd-I-Floor®, DryGuard® OSB Sturd-I-Floor, Nautilus™ Wall Sheathing, Thermostat® OSB Radiant Barrier Roof Sheathing

Engineered Boards Hardboard, Hushboard® Sound Deadening Board, Coreboard, Uncoated Container Pack, Table Pad Substrate, Jubilee® RTP and White Ice Beadboard Paneling, Lionite® Tileboard Paneling, SuperWood® Industrial Panels, Mark-R Board, Chalk Board, Clutter Cutter™ Panels, UltraStrate® Industrial Panels

® is a Registered Trademark of Georgia-Pacific Wood Products LLC
™ is a Trademark of Georgia-Pacific Wood Products LLC

HMIS® ratings
Health: 1*
Flammability: 1
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

Other information
WOOD PRODUCTS
CAUTION!
SAWING, SANDING OR MACHINING WOOD PRODUCTS CAN PRODUCE WOOD DUST, WHICH CAN CAUSE A FLAMMABLE OR EXPLOSIVE HAZARD.

WOOD DUST MAY CAUSE LUNG, UPPER RESPIRATORY TRACT, EYE OR SKIN IRRITATION. SOME WOOD SPECIES MAY CAUSE DERMATITIS AND/OR RESPIRATORY ALLERGIC EFFECTS. EXPOSURE TO WOOD DUST MAY CAUSE CANCER.

PRECAUTIONS
Avoid dust contact with ignition source. Avoid frequent or prolonged inhalation of wood dust. Protect eyes from flying particles. Avoid dust contact with skin and wash exposed areas.

FIRST AID
If inhaled, remove to fresh air. In case of contact, flush eyes and skin with water. If irritation persists, call a physician.

HANDLING AND STORAGE
Avoid frequent or prolonged inhalation of wood dust. Protect eyes from flying particles. Avoid contact with skin and wash exposed areas thoroughly. Change protective clothing and gloves when signs of contamination appear.
Wood products are combustible and, therefore, should not be subjected to temperatures exceeding the autoignition temperature. Wet down wood dust generated by sawing, sanding, or machining to reduce the likelihood of ignition or dispersion of dust into the air.

For additional information, see the Georgia-Pacific Wood Products LLC Material Safety Data Sheet for this product.

Product Safety and Health Information
Georgia-Pacific LLC
P. O. Box 105605
Atlanta, GA  30348-5605

Disclaimer
The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Georgia-Pacific and its subsidiaries make no warranty of any kind, expressed or implied, concerning the accuracy or completeness of the information and data herein. The implied warranties of merchantability and fitness for a particular purpose are specifically excluded. Georgia-Pacific and its subsidiaries will not be liable for claims relating to any party's use of or reliance on information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading.

Effective Date
19-Oct-2012
Prepared by
Georgia-Pacific LLC
404.652.5119
SAFETY DATA SHEET

1. Identification

Product identifier
WOOD AND WOOD PRODUCTS

Engineered Lumber (LVL, Wood-I-Joists, Rimboard): Wood I Beam™ Joists and Broadspan™ I-Joists, GP Lam® LVL and Broadspan™ LVL, Fiberstrong® Rim Board

Lumber Products: Sta-Strait™ Finger-Jointed Southern Yellow Pine Lumber, Solid Sawn Wood

Plywood: Plytanium® Plywood, Plytanium® DryPly® Plywood, Sanded Pine Plywood, Cargo Panel Plywood, Plywood Sturd-I-Floor®, plywood rated Sheathing, plywood exterior siding, Ply-Bead® Panels, Sanded Plywood Project Panels, PlyFrame® Panels, Plywood Underlayment, CDX Plywood; Plyform, T1-11 textured plywood siding, Craftsman® Primer/Sealer plywood siding, Craftsman® Sanded plywood

Oriented Strand Board (OSB): Oriented Strand Board (OSB), OSB Sturd-I-Floor®, OSB rated sheathing, Home Advantage® OSB Sturd-I-Floor®, Nautilus™ wall sheathing, Thermostat® OSB radiant Barrier roof sheathing (Mill# 500), FiberStrong HD™ (Mill#s 500, 451), Blue Ribbon® (Mill#s 500, 451), Camouflage panel featuring Mossy Oak® (Mill# 500), Realtree Camouflage Panel® (Mill# 500)

Engineered Boards: Hardboard (Standard, Tempered, perforated, paneling), Hushboard® sound deadening board, coreboard, uncoated container pack, table pad substrate, Jubilee® RTP and white ice beadboard paneling, Lionite® tileboard paneling, SuperWood® Industrial Panels, Mark-R board, chalk board, clutter cutter™ panels, UltraStrate® Industrial Panels

Other means of identification
Door Core, Greenlite, Door Core & SoundChoice

SDS number
GP-31A

Recommended use
Building Materials - Structural, Industrial or Decorative

Recommended restrictions
None known.

Manufacturer/Importer/Supplier/Distributor information
Company name: Georgia-Pacific Wood Products LLC
Address: 133 Peachtree Street, NE
Atlanta, GA 30303

Telephone
Technical Information 800.284.5347
MSDS Request 404.652.5119
E-mail
Not available.
Emergency phone number
Chemtrec - Emergency 800.424.9300

2. Hazard(s) identification

Emergency overview
This product is not hazardous in the form in which it is shipped by the manufacturer but may become hazardous by downstream activities (e.g., grinding, sanding, cutting, pulverizing) that reduce its particle size. Those hazards are described below.

Physical hazards
Not classified.

Health hazards
Serious eye damage/eye irritation Category 2B
Sensitization, respiratory Category 1
Sensitization, skin Category 1
Carcinogenicity Category 1A
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards
Not classified.

OSHA defined hazards
Combustible dust

Label elements

Signal word  Danger

Hazard statement  Causes eye irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause cancer. If small particles of wood dust are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

Precautionary statement

Prevention  Do not handle until all safety precautions have been read and understood. Wear protective gloves. In case of inadequate ventilation wear respiratory protection. Avoid breathing dust. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Prevent dust accumulation and airborne dispersion of dust to minimize flash fire and explosion hazard.

Response  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor or other qualified medical professional. In case of fire: Use appropriate media to extinguish.

Storage  Store away from strong acids, alkalis, oxidizing agents and drying oils.

Disposal  Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)  None known.

Supplemental information  None.

### 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Mixtures</th>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>Not Assigned</td>
<td>60 - 100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other components below reportable levels  15 - 40
The specific chemical identity and/or percentage of composition has been withheld as a trade secret.

**Composition comments**

Some lumber products may be sprayed with sap stain control coatings. The lumber is air or kiln dried. No chemical residue is left on the surface of the board. Wood products are bonded with phenol, phenol resorcinol, melamine formaldehyde-based, or polyvinyl acetate resin. Some wood products may be coated with finishes, sealants and or overlays.

**4. First-aid measures**

- **Inhalation**
  Remove from area of exposure. If the affected person is not breathing, apply artificial respiration. If persistent irritation, severe coughing or breathing difficulty occurs, seek medical attention.

- **Skin contact**
  If irritation develops, wash with soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

- **Eye contact**
  Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

- **Ingestion**
  If wood or wood dust is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

- **Most important symptoms/effects, acute and delayed**
  Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause an allergic skin reaction. Dermatitis. Rash. May cause respiratory irritation. Difficulty in breathing.

- **Indication of immediate medical attention and special treatment needed**
  Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

- **General information**
  If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

**5. Fire-fighting measures**

- **Suitable extinguishing media**
  Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Apply extinguishing media carefully to avoid creating airborne dust.

- **Unsuitable extinguishing media**
  Heavy water (or jet) stream may cause dust to become airborne and create a flash fire hazard or an explosive atmosphere.

- **Specific hazards arising from the chemical**
  Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.

- **Special protective equipment and precautions for firefighters**
  Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

- **Fire fighting equipment/instructions**
  In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

- **Specific methods**
  To avoid dust clouds, responders should use the extinguisher from as far away as possible and apply the extinguishing agent as gently as possible. The main considerations with hose stream operation are to avoid creating combustible dust clouds or introducing more air. In particular, the use of solid streams and direct dust pile hits can disperse dust into the air creating a potential flash fire hazard. The best way to apply water is in a medium to wide-pattern, as gently as possible. Responders should use a low nozzle pressure and loft the stream onto the burning material from as far away as the stream will reach. The use of wide-pattern (or “fog”) streams at pressures typically used.

- **General fire hazards**
  May form combustible dust concentrations in air.

**6. Accidental release measures**

- **Personal precautions**
  Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as protective equipment and these may form an explosive mixture if they are released into the atmosphere in sufficient emergency procedures concentration. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. For personal protection, see section 8 of the SDS.

- **Methods and materials for containment and cleaning up**
  Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Vacuum dust with dust ignition proof vacuum or wet sweep small wood pieces and dust; place in appropriate container for disposal. Gather larger pieces by an appropriate method. Reduce airborne dust by use of wet methods (e.g. water mist) and prevent scattering by moistening with water. For waste disposal, see section 13 of the SDS.
Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage
Precautions for safe handling
Dust can form an explosive mixture in air. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. If flash fire or explosion hazard is present, wear flame resistant clothing and face/head protection. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Use personal protective equipment as required. Ensure dust collection systems used for conveying combustible wood dusts are protected with and equipped with fire and explosion prevention and protection equipment. See NFPA 664 and NFPA 69 for further requirements, information and guidance.

Conditions for safe storage, Store flat, supported and protected from direct contact with the ground. Store away from including any incompatibilities incompatible materials (see Section 10 of the SDS). Store in a cool dry place.

8. Exposure controls/personal protection
Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>WOOD/WOOD DUST</td>
<td>TWA</td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

ACGIH

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Dust.</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Exposure guidelines
Georgia-Pacific Wood Products LLC voluntarily elects to adhere to exposure limits contained in OSHA's 1989 Air Contaminants Standard although certain limits were vacated in 1992. The present OSHA exposure limits governing wood dust is 15 mg/m³ (Total Dust) and 5 mg/m³ (Respirable Fraction).

Appropriate engineering controls
Due to the fire and explosive potential of dust when suspended in air, precautions should be taken when material is used in any operation which may generate dust. Local exhaust, general dilution ventilation in enclosed areas, and explosion proof equipment is recommended. Use wet methods, if appropriate, to reduce airborne dust concentrations.

Individual protection measures, such as personal protective equipment
Eye/face protection
Safety glasses or goggles are recommended when using this product. Ensure compliance with OSHA's PPE standard (29 CFR 1910.132 and .133) for eye and face protection.

Skin protection
Hand protection
Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other
Impervious protective clothing and gloves recommended to prevent drying or irritation of skin. Ensure compliance with OSHA's PPE standards (29 CFR 1910.132 (general) and 138 (hand protection)). Safety shower/eye wash fountain is recommended in the workplace area (29 CFR 1910.151 (c)).
Respiratory protection

A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

Thermal hazards

Wear appropriate thermal protective clothing (i.e. flame resistant clothing and head/face protection), when potential flash fire or explosion hazards are present.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance
Rigid boards or panels

Physical state
Solid.

Form
Solid wood

Color
Various

Odor
Not available.

Odor threshold
Not available.

pH
Not applicable

Melting point/freezing point
Not available.

Initial boiling point and boiling range
Not applicable

Flash point
Not applicable

Evaporation rate
Not applicable

Flammability (solid, gas)
Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)
> 40 g/m³ for wood dust. Note: The LEL is equivalent to the Minimum Explosive Concentration (%) dust. The MEC will vary with particle size of the wood dust. Recommend MEC testing for specific wood dust particle sizes generated or handled.

Flammability limit - upper (%)
Not available

Explosive limit - lower (%)
Not available.

Explosive limit - upper (%)
Not available.

Vapor pressure
Not applicable

Vapor density
Not applicable

Relative density
Variable

Solubility(ies)

Solubility (water)
Insoluble

Partition coefficient (n-octanol/water)
Not applicable

Auto-ignition temperature
399.92 - 500 °F (204.4 - 260 °C) for wood

Decomposition temperature
Not available

Viscosity
Not available.

Other information

Bulk density
Not applicable

Flash point class
Combustible

10. Stability and reactivity

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Material is stable under normal conditions.

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use. reactions
Conditions to avoid: Dust accumulation, dispersion of dust in air, high temperatures, open flame, sparks, or other sources of ignition.

Incompatible materials: Strong acids, alkalies, oxidizing agents and drying oils.

Hazardous decomposition: Thermal decomposition may emit irritating fumes or gases of carbon monoxide, carbon dioxide, aldehydes, or organic acids.

11. Toxicological information

Information on likely routes of exposure
- Inhalation: Inhalation of dusts may cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if dust inhaled. Prolonged inhalation may be harmful.
- Skin contact: May cause an allergic skin reaction.
- Eye contact: Causes eye irritation.
- Ingestion: Not applicable under normal conditions of use. May result in obstruction or temporary irritation of the digestive tract.

Symptoms related to the physical, chemical and toxicological characteristics:
- Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause an allergic skin reaction. Dermatitis. Rash. May cause respiratory irritation. Difficulty in breathing.

Information on toxicological effects
- Acute toxicity: May cause an allergic skin reaction. May cause respiratory irritation.
- Skin corrosion/irritation: Prolonged skin contact may cause temporary irritation. Serious eye damage/eye irritation: Causes eye irritation.
- Respiratory or skin sensitization:
  - Respiratory sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - Skin sensitization: May cause an allergic skin reaction.
- Germ cell mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- Carcinogenicity: Wood dust generated from sawing, sanding or machining this product may cause nasal dryness, irritation, coughing and sinusitis. The International Agency for Research on Cancer (IARC), and National Toxicology Program (NTP) classifies wood dust as a carcinogen. This classification is based on the increased occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation noted insufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon, or rectum with exposure to wood dust.

IARC Monographs. Overall Evaluation of Carcinogenicity
- WOOD/WOOD DUST (CAS Not Assigned): 1 Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
- Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens
- WOOD/WOOD DUST (CAS Not Assigned): Known To Be Human Carcinogen.

Reproductive toxicity: This product is not expected to cause reproductive or developmental effects.
- Specific target organ toxicity - single exposure: May cause respiratory irritation.
- Specific target organ toxicity - repeated exposure: Not classified.
- Aspiration hazard: Not an aspiration hazard.
- Chronic effects: Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability: No data is available on the degradability of this product.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.
Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions

Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations.

Contaminated packaging

Empty packaging/container can be disposed in accordance with all applicable regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to

Not applicable. Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance
Safe Drinking Water Act
(SDWA)

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
WOOD/WOOD DUST (CAS Not Assigned)

US. Pennsylvania Worker and Community Right-to-Know Law
WOOD/WOOD DUST (CAS Not Assigned)

US. Rhode Island RTK
Not regulated.

US. California Proposition 65
California Proposition 65. WARNING: This product contains chemicals known to the state of California to cause cancer. Drilling, sawing, sanding or machining wood products generates wood dust and titanium dioxide particles, both chemicals are known to the state of California to cause cancer. Avoid inhaling such dust and particles; use a dust mask or other safeguards for personal protection.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance
WOOD/WOOD DUST (CAS Not Assigned) Listed: December 18, 2009

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date         May-21-2015
Revision date       May-28-2015
Version #           02

Further information
® is a Registered Trademark of Georgia-Pacific Wood Products LLC
™ is a Trademark of Georgia-Pacific Wood Products LLC

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

HMIS® ratings
Health: 2*
Flammability: 1
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

Disclaimer
This SDS is intended to quickly provide useful information to the user(s) of this material or product.

It is not intended to serve as a comprehensive discussion of all possible risks or hazards, and it assumes a reasonable use of the product. The information contained in this SDS is believed to be accurate as of the date of preparation of this SDS and has been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. The user or
handler (or their employer) should consider the specific conditions in which this material will be used, handled, or stored and determine what specific safety or other precautions are required. Employers should ensure that their employees, agents, contractors, and customers who will use the product receive adequate warnings and safe handling procedures, including a current SDS. Product users or handlers (or their employer) who are unsure of what specific precautions are required should consult their employer, product supplier, or safety or health professionals before handling or working with this product. Please notify us immediately if you believe this SDS or other safety and health information about this product is inaccurate or incomplete.

**Revision Information**

Product and Company Identification: Synonyms
WOOD AND WOOD PRODUCTS

Hazard statement
Causes eye irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause cancer. If small particles of wood dust are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

Precautionary statement
Prevention
protective gloves. In case of inadequate ventilation wear respiratory protection. Avoid breathing dust. Wash thoroughly after handling. Contaminated work clothing must not Do not handle until all safety precautions have been read and understood. Wear be allowed out of the workplace. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Prevent dust accumulation and airborne dispersion of dust to minimize flash fire and explosion hazard.

Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor or other qualified medical professional. In case of fire: Use appropriate media to extinguish.

Storage
Store away from strong acids, alkalis, oxidizing agents and drying oils.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.
Danger

Product list:

**Engineered Lumber (LVL, Wood-I-Joists, Rimboard):**- Wood I Beam™
Joists and Broadspan™ I-Joists, GP Lam® LVL and
Broadspan™ LVL,
Fiberstrong® Rim Board

**Lumber Products:**- Sta-Straight™ Finger-Jointed Southern
Yellow Pine
Lumber, Solid Sawn Wood

**Plywood:** - Plytanium® Plywood, Plytanium® DryPly®
Plywood, Sanded
Pine plywood, Cargo Panel plywood, Plywood Sturd-I-
Floor®, Plywood
Rated Sheathing, Plywood Exterior Siding, Ply-Bead®
Panels, Sanded
Plywood Project Panels, PlyFrame® Panels, Plywood
Underlayment, CDX
Plywood; Plyform, T1-11 Textured plywood siding,
Craftsman® Primer/
Sealer plywood siding, Craftsman® Sanded plywood

**Oriented Strand Board (OSB):**- Oriented Strand Board
(OSB), OSB Sturd-I-Floor®, OSB Rated Sheathing, Home
Advantage® OSB Sturd-I-Floor®, Nautilus® Wall Sheathing,
Thermostat® OSB Radiant Barrier Roof
Sheathing (Mill# 500), FiberStrong HD™ (Mill#s 500, 451), Blue Ribbon®
(Mill#s 500, 451), Camouflage Panel Featuring Mossy Oak ® (Mill# 500),
Realtree Camouflage Panel® (Mill# 500)

**Engineered Boards:**- Hardboard (Standard, Tempered, Perforated,
Paneling), Hushboard® Sound Deadening Board, Coreboard, Uncoated
Container Pack, Table Pad Substrate, Jubilee® RTP and White Ice
Beadboard Paneling, Lionite® Tileboard Paneling, SuperWood® Industrial
Panels, Mark-R Board, Chalk Board, Clutter Cutter™ Panels, UltraStrate®
Industrial Panels

Door Core, Greenlite, Door Core & SoundChoice
1. Product and Company Identification

Material name: ACQ Pressure Treated Lumber
Synonym(s): ACQ Treated * ACQ Treated Wood * ACQ Type D
Product use: Fungicide Treated Lumber. Water repellant products may contain hydrocarbon wax.
Chemical description: See Product List found in Section 16
Product List: See Product List found in Section 16
Chemical name: Alkaline Copper and Quaternary Ammonium Compounds Type D
Manufacturer information: Georgia-Pacific Treated Lumber LLC
133 Peachtree Street, NE
Atlanta, GA 3030
MSDS Request 404.652.5119
Technical Information 888.427.4778
Chemtrec - Emergency 800.424.9300

2. Hazards Identification

Emergency overview: Sawing, sanding or machining wood or wood products can generate dust. Wood dust may ignite or form explosive mixture with air in the presence of an ignition source. Dust may be irritating to eyes, skin and respiratory system.
Target organs: Eyes, skin and respiratory system
Potential health effects:
- Eyes: Dust or splinters may cause irritation or injury to the eyes.
- Skin: Contact with skin may cause irritation.
- Inhalation: Dusts of this product may cause irritation to the nose, throat, or respiratory tract.
- Ingestion: Not applicable under normal conditions of use. May result in obstruction or temporary irritation of the digestive tract.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent/Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>Not Assigned</td>
<td>60 - 100</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Copper complex expressed as Copper oxides</td>
<td>Proprietary</td>
<td>0.5 - 1.5</td>
</tr>
<tr>
<td>Didecyl dimethyl ammonium carbonate</td>
<td>Proprietary</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

Composition comments: Some lumber products may be sprayed with sap stain control coatings.

4. First Aid Measures

First aid procedures:
- Eye contact: In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes. Do not rub the eyes. Get medical attention immediately.
  For skin contact, wash immediately with soap and water. Get medical attention if irritation develops or persists.
- Skin contact: Get medical attention immediately.
5. Fire Fighting Measures

General fire hazards
Wood is combustible when exposed to heat or flame. Wood dusts may form explosive mixtures with air in the presence of an ignition source. An airborne dust concentration of 40 g/m3 of air is often used as the lower explosion limit (LEL) for wood dust. Avoid prolonged breathing of wood dust or decomposition products.

Flammable properties
Not available

Extinguishing media
Suitable extinguishing media
Use methods for the surrounding fire.

Protection of firefighters
Firefighters should wear protective clothing including self-contained breathing apparatus (SCBA) to avoid breathing combustion products. Partially burned dust is especially hazardous if dispersed into the air. Wet down dust to reduce likelihood of ignition or dispersion. Remove burned or wet dust to open, secure area after fire is extinguished.

Explosion data
Sensitivity to static discharge
Not available

Sensitivity to mechanical impact
Not available

Hazardous combustion products
Combustion products may yield irritating and toxic fumes or gases including organic chloride, aldehydes, amines, hydrogen chloride, ammonia, copper compounds, oxygen, boric oxide, oxides of carbon or nitrogen.

6. Accidental Release Measures

Personal precautions
Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Avoid inhaling dust during clean up.

Methods for cleaning up
Vacuum or wet sweep small wood pieces and dust; place in appropriate container for disposal. Gather larger pieces by an appropriate method. Reduce airborne dust by use of wet methods and prevent scattering by moistening with water.

7. Handling and Storage

Handling
Caution. Do not burn treated wood. Do not use pressure treated wood as mulch. Use only with adequate ventilation. Use personal protective equipment as required. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling. Dust can form an explosive mixture in air. Keep formation of airborne dusts to a minimum. Keep away from heat and sources of ignition.

Storage
Store flat, supported and protected from direct contact with the ground. Keep in a well-ventilated place away from incompatible materials. Store in a cool dry place. Keep away from heat and sources of ignition.

8. Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>WOOD/WOOD DUST (CAS # Not Assigned)</th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>1 mg/m3 TWA (Inhalable)</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>OSHA</td>
<td>5 mg/m3 TWA (Total Dust) (Vacated)</td>
<td>10 mg/m3 (Vacated)</td>
<td>Not established</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monoethanolamine (CAS # 141-43-5)</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEL</td>
<td></td>
</tr>
<tr>
<td>Ceiling</td>
<td></td>
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<tr>
<td>Material name: ACQ Pressure Treated Lumber</td>
<td></td>
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<td>--------------------------------------------</td>
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</tbody>
</table>

**ID: GP-33Q    Effective date: 09-29-2010**

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 ppm TWA</td>
<td>3 ppm TWA; 6 mg/m3 TWA</td>
</tr>
<tr>
<td></td>
<td>6 ppm STEL</td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

**ACGIH**

<table>
<thead>
<tr>
<th>Copper complex expressed as Copper oxides (CAS # Proprietary)</th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist, as Cu)</td>
<td>Not established</td>
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<tr>
<td>OSHA</td>
<td>0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)</td>
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<td>Not established</td>
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</tbody>
</table>

**OSHA**

<table>
<thead>
<tr>
<th>Didecyl dimethyl ammonium carbonate / bicarbonate (CAS # Proprietary)</th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>OSHA</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

**Exposure guidelines**

Georgia-Pacific Wood Products LLC voluntarily elects to adhere to exposure limits contained in OSHA’s 1989 Air Contaminants Standard although certain limits were vacated in 1992. The present OSHA exposure limits governing wood dust is 15 mg/m3 (Total Dust) and 5 mg/m3 (Respirable Fraction).

Due to the explosive potential of dust when suspended in air, precautions should be taken when sawing, sanding, or machining wood or wood products to prevent sparks or other ignition sources in ventilation equipment. Local exhaust ventilation is recommended when sawing, sanding, or machining this product. General dilution ventilation is recommended in processing and storage areas.

**Engineering controls**

**Personal protective equipment**

**Eye / face protection**

Safety glasses or goggles are recommended when using this product. Ensure compliance with OSHA’s PPE standard (29 CFR 1910.132 and .133) for eye and face protection.

**Skin protection**

Impervious protective clothing and gloves recommended to prevent drying or irritation of skin. Ensure compliance with OSHA’s PPE standards (29 CFR 1910.132 (general) and 138 (hand protection)). Safety shower/eye wash fountain is recommended in the workplace area (29 CFR 1910.151 (c)). Ensure compliance with OSHA’s PPE standard 29 CFR 1910.132 (general) and .138 (hand protection).

**Respiratory protection**

A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA’s respirator standard (29 CFR 1910.134) and ANSI’s standard for respiratory protection (Z88.2).

**9. Physical & Chemical Properties**

**Appearance**

Rigid board

**Color**

Various

**Physical State**

Solid wood

**Odor**

Resinous

**Odor threshold**

wood

Not available

**pH**

Not applicable

**Freezing point**

Not applicable

**Boiling point**

Not applicable

**Flash point**

Not applicable
Evaporation rate
Not applicable

Flammability
Combustible

Flammability limits in air, upper, % by volume
40 g/cm³ Wood dust

Flammability limits in air, lower, % by volume
Not applicable

Vapor pressure
Not applicable

Vapor density
Not applicable

Specific gravity
<1.0

Octanol/H₂O coeff
Not applicable

Solubility (water)
Insoluble

Auto-ignition temperature
400 - 500 °F (204.4 - 260 °C) for Wood

10. Chemical Stability & Reactivity Information
Chemical stability
This is a stable material.

Conditions to avoid
Contact with incompatible materials. High temperatures. Heat, flames and sparks. Dust may form explosive mixture in air.

Conditions of Reactivity
None known.

Incompatible materials
Strong acids, alkalies, oxidizing agents and drying oils.

Hazardous decomposition products
Combustion products may yield irritating and toxic fumes or gases including organic chloride, aldehydes, amines, hydrogen chloride, ammonia, copper compounds, oxygen, boric oxide, oxides of carbon or nitrogen.

Possibility of hazardous reactions
Will not occur.

11. Toxicological Information
Toxicological information
WOOD DUST. Wood dust may cause dryness, irritation, coughing or sinusitis. IARC and NTP classify wood dust as a carcinogen. This classification is based on the increased occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation noted insufficient evidence to associate cancer of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust.

MONOETHANOLAMINE. Inhalation of high concentrations of monoethanolamine has been reported to cause pulmonary, liver, kidney and skin damage in experimental animals. Monoethanolamine may be corrosive to the eyes, skin, respiratory system and gastrointestinal tract, and may cause permanent damage to the eyes. Monoethanolamine may be absorbed through the skin in harmful amounts and may cause allergic skin reactions.

Monoethanolamine exposures may cause damage to the nervous system, lungs, liver or kidneys.

COPPER COMPLEX EXPRESSED AS COPPER OXIDE. Copper complex expressed as copper oxide in this product contains copper salts which, upon ingestion of high oral doses, can cause gastrointestinal disturbances, anemia, and secondary liver and kidney damage.

Toxicological information (Ingredients)
Mutagenicity
Not expected to be hazardous by OSHA/WHMIS criteria.

Reproductive effects
Not expected to be hazardous by OSHA/WHMIS criteria.

Teratogenicity
Not expected to be hazardous by OSHA/WHMIS criteria.

Synergistic materials
Not expected to be hazardous by OSHA/WHMIS criteria.

Monoethanolamine (CAS # 141-43-5)
Toxicology Data - Selected LD₅₀s and LC₅₀s
Oral LD₅₀ Rat 1720 mg/kg; Dermal LD₅₀ Rabbit 1 mL/kg:
Dermal LD₅₀ Rabbit 1025 mg/kg
Sensitization

Not expected to be hazardous by OSHA/WHMIS criteria.

Carcinogenicity

WOOD/WOOD DUST (CAS # Not Assigned)

<table>
<thead>
<tr>
<th>Agency/Program</th>
<th>Status</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC Group 1</td>
<td>Carcinogenic to Humans</td>
<td>Monograph 62 (1995)</td>
</tr>
<tr>
<td>NTP</td>
<td>Known Human Carcinogen</td>
<td>Human Carcinogens</td>
</tr>
<tr>
<td>U.S. - OSHA</td>
<td>Hazard Communication</td>
<td>Present</td>
</tr>
</tbody>
</table>

12. Ecological Information

Ecotoxicity

This product is not expected to leach harmful amounts of preservative into the environment. The wood preservative contains fungicides and insecticides, which, when released into the environment, may adversely affect plants and wildlife.

Copper complex expressed as Copper oxides (CAS # Proprietary)

<table>
<thead>
<tr>
<th>Test</th>
<th>EC50 (mg/L)</th>
<th>LC50 (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>72 Hr</td>
<td>0.0426-0.0535</td>
<td></td>
</tr>
<tr>
<td>96 Hr</td>
<td>&lt;0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>96 Hr</td>
<td>0.0522-0.054</td>
<td></td>
</tr>
</tbody>
</table>

Monoethanolamine (CAS # 141-43-5)

<table>
<thead>
<tr>
<th>Test</th>
<th>EC50 (mg/L)</th>
<th>LC50 (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>72 Hr</td>
<td>227</td>
<td></td>
</tr>
<tr>
<td>96 Hr</td>
<td>3684</td>
<td></td>
</tr>
<tr>
<td>96 Hr</td>
<td>114-196</td>
<td></td>
</tr>
</tbody>
</table>

Environmental effects

Pressure treated wood should not be used where it may come in direct or indirect contact with drinking water. Pressure treated wood should not be used in circumstances where preservative may become a component of food, animal feed or beehives.

13. Disposal Considerations

Disposal instructions

Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of material according to Local, State, Federal, and Provincial Environmental Regulations.

14. Transport Information

General

This product is not regulated as a hazardous material by the United States (DOT) or Canadian (TDG) transportation regulations.

Department of Transportation (DOT) Requirements

This product is not regulated as a hazardous material by the United States (DOT) transportation regulations.

Canadian Transportation of Dangerous Goods (TDG) Requirements

Not regulated as dangerous goods.

15. Regulatory Information

Superfund Amendments and Reauthorization Act of 1986 (SARA)

<table>
<thead>
<tr>
<th>Hazard category</th>
<th>SARA categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>Hazard category</td>
</tr>
<tr>
<td>Delayed</td>
<td>Hazard category</td>
</tr>
<tr>
<td>Fire</td>
<td>Hazard category</td>
</tr>
<tr>
<td>Pressure</td>
<td>Hazard category</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Hazard category</td>
</tr>
</tbody>
</table>

Material name: ACQ Pressure Treated Lumber

ID: GP-33Q   Effective date: 09-29-2010
Section 302 extremely hazardous substance: No
Section 311 hazardous chemical: Yes
Section 313 hazardous chemical: No

US federal regulations: ACQ Pressure Treated Wood Products contains a quaternary ammonium compound, an EPA registered product. This product is pressure treated with a FIFRA registered wood preservative.

California Proposition 65. WARNING: This product may generate wood dust, a chemical known to the state of California to cause cancer. **Copper complex expressed as Copper oxides (CAS # Proprietary)**

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities:
- 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers);
- 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

U.S. - CERCLA/SARA - Section 313 - Emission Reporting: 1.0 % de minimis concentration

Canadian regulations: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**Canada - WHMIS - Ingredient Disclosure List**
- Copper complex expressed as Proprietary 1 %
- Copper oxides
- Monoethanolamine 141-43-5 1 %

**Inventory status**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>Compliant w/inventory requirements (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

16. Other Information

**Product list**

Pressure Treated Lumber

Premium Southern Gold® Pressure Treated Lumber

Premium Southern Gold® Plus Water-Repellent Pressure Treated Lumber

**HMIS® ratings**

Health: 1*
Flammability: 1
Physical hazard: 0
Personal protection: X

**NFPA ratings**

Health: 1
Flammability: 1
Instability: 0

**Other information**

WOOD PRODUCTS
CAUTION!

SAWING, SANDING OR MACHINING WOOD PRODUCTS CAN PRODUCE WOOD DUST, WHICH CAN CAUSE A FLAMMABLE OR EXPLOSIVE HAZARD.

WOOD DUST MAY CAUSE LUNG, UPPER RESPIRATORY TRACT, EYE OR SKIN IRRITATION. SOME WOOD SPECIES MAY CAUSE DERMATITIS AND/OR RESPIRATORY ALLERGIC EFFECTS. EXPOSURE TO WOOD DUST MAY CAUSE CANCER.

PRECAUTIONS

Avoid dust contact with ignition source. Avoid frequent or prolonged inhalation of wood dust.

Protect eyes from flying particles. Avoid dust contact with skin and wash exposed areas.

FIRST AID

If inhaled, remove to fresh air. In case of contact, flush eyes and skin with water. If irritation persists, call a physician.

HANDLING AND STORAGE

Avoid frequent or prolonged inhalation of wood dust. Protect eyes from flying particles. Avoid contact with skin and wash exposed areas thoroughly. Change protective clothing and gloves when signs of contamination appear.

Wood products are combustible and, therefore, should not be subjected to temperatures exceeding the autoignition temperature. Wet down wood dust generated by sawing, sanding, or machining to reduce the likelihood of ignition or dispersion of dust into the air.

For additional information, see the Georgia-Pacific Treated Lumber LLC Material Safety Data Sheet for this product.

Product Safety and Health Information

Georgia-Pacific LLC
P. O. Box 105605
Atlanta, GA 30348-5605

Disclaimer

The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Georgia-Pacific and its subsidiaries make no warranty of any kind, expressed or implied, concerning the accuracy or completeness of the information and data herein. The implied warranties of merchantability and fitness for a particular purpose are specifically excluded. Georgia-Pacific and its subsidiaries will not be liable for claims relating to any party's use of or reliance on information and data contained herein regardless of whether it is claimed that the information and data are...
# SAFETY DATA SHEET

## 1. Identification

### Product identifier

**ACQ Pressure Treated Lumber**

### Product list

- Pressure Treated Lumber
- Premium Southern Gold® Pressure Treated Lumber
- Premium Southern Gold® Plus Water-Repellent Pressure Treated Lumber

### Other means of identification

- **SDS number**: GP-33Q
- **Synonyms**: ACQ Treated * ACQ Treated Wood * ACQ Type D

### Recommended use

Not available.

### Recommended restrictions

None known.

### Manufacturer/Importer/Supplier/Distributor information

- **Company name**: Georgia-Pacific Treated Lumber LLC
- **Address**: 133 Peachtree Street, NE
  Atlanta, GA 30303
- **Telephone**
  - Technical Information: 888.427.4778
  - MSDS Request: 404.652.5119
- **E-mail**: Not available.
- **Emergency phone number**: Chemtrec - Emergency 800.424.9300

## 2. Hazard(s) identification

### Physical hazards

Not classified.

### Health hazards

- **Serious eye damage/eye irritation** Category 2B
- **Sensitization, respiratory** Category 1
- **Sensitization, skin** Category 1
- **Carcinogenicity** Category 1A
- **Specific target organ toxicity, single exposure** Category 3 respiratory tract irritation

### Environmental hazards

- **Hazardous to the aquatic environment, acute** Category 3

### OSHA defined hazards

Not classified.

### Label elements

- **Signal word**: Danger
- **Hazard statement**: Causes eye irritation. May cause an allergic skin reaction. Wood dust generated from sawing, sanding or machining this product, may cause allergy or asthma symptoms or breathing difficulties if inhaled, may cause respiratory irritation, may cause cancer. If small particles of wood dust are generated during further processing, handling or by other means, may form combustible...
dust concentrations in air. Harmful to aquatic life.

**Precautionary statement**

**Prevention**  Do not handle until all safety precautions have been read and understood. Wear protective gloves. In case of inadequate ventilation wear respiratory protection. Avoid breathing dust. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Do not eat, drink or smoke when using this product. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Prevent dust accumulation and airborne dispersion of dust to minimize flash fire and explosion hazard. Avoid release to the environment.

**Response**  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor or other qualified medical professional. Specific treatment (see section 4 on the SDS). In case of fire: Use appropriate media to extinguish.

**Storage**  Store away from strong acids, alkalies, oxidizing agents and drying oils.

**Disposal**  Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)**  None known.

**Supplemental information**  None.

### 3. Composition/information on ingredients

#### Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>Not Assigned</td>
<td>90 - 100</td>
<td></td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td></td>
<td>141-43-5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Copper complex expressed as</td>
<td></td>
<td>Proprietary</td>
<td>0.3 - 2.1</td>
</tr>
<tr>
<td>Copper oxides</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Azo Dye</td>
<td></td>
<td>Proprietary</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Alkyl dimethyl benzyl ammonium chloride**</td>
<td></td>
<td>68391-01-5</td>
<td>0 - 1</td>
</tr>
<tr>
<td>Dialkyl dimethyl Ammonium carbonate/bicarbonate**</td>
<td></td>
<td>Proprietary</td>
<td>0 - 1</td>
</tr>
<tr>
<td>Didecyl dimethyl ammonium chloride**</td>
<td></td>
<td>7173-51-5</td>
<td>0 - 1</td>
</tr>
<tr>
<td>BORIC ACID (H3BO3)</td>
<td></td>
<td>10043-35-3</td>
<td>0 - 0.1</td>
</tr>
</tbody>
</table>

**Composition comments**  **This product contains one of the given quaternary ammonium compounds depending on the type of ACQ Wood Preservative used.**

### 4. First-aid measures

**Inhalation**  Remove from area of exposure. If the affected person is not breathing, apply artificial respiration. If persistent irritation, severe coughing or breathing difficulty occurs, seek medical attention.

**Skin contact**  Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. If irritation develops, wash with soap and water. Get medical attention if irritation persists.

**Eye contact**  Do not rub the eyes. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Ingestion
If wood or wood dust is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

Most important symptoms/effects, acute and delayed
Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause an allergic skin reaction. Dermatitis. Rash. May cause allergic respiratory reaction. Difficulty in breathing.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Use methods for the surrounding fire. Apply extinguishing media carefully to avoid creating airborne dust.

Unsuitable extinguishing media
Heavy water (or jet) stream may cause dust to become airborne and create a flash fire hazard or an explosive atmosphere.

Specific hazards arising from the chemical
Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
In case of fire and/or explosion do not breathe fumes. Firefighters should wear full protective clothing including self contained breathing apparatus. Move containers from fire area if you can do so without risk. Partially burned dust is especially hazardous if dispersed into the air. Wet down to reduce likelihood of ignition or dispersion. Remove burned or wet dust to open, secure area after fire is extinguished.

Specific methods
To avoid dust clouds, responders should use the extinguisher from as far away as possible and apply the extinguishing agent as gently as possible. The main considerations with hose stream operation are to avoid creating combustible dust clouds or introducing more air. In particular, the use of solid streams and direct dust pile hits can disperse dust into the air creating a potential flash fire hazard. The best way to apply water is in a medium to wide-pattern, as gently as possible. Responders should use a low nozzle pressure and loft the stream onto the burning material from as far away as the stream will reach. The use of wide-pattern (or "fog") streams at pressures typically used.

General fire hazards
May form combustible dust concentrations in air. Wood is combustible when exposed to heat or flame. Wood dusts may form explosive mixtures with air in the presence of an ignition source. An airborne dust concentration of 40 g/m3 of air is often used as the lower explosion limit (LEL) for wood dust. Avoid prolonged breathing of wood dust or decomposition products.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Avoid inhalation of dust during clean up. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Vacuum dust with dust ignition proof vacuum or wet sweep small wood pieces and dust; place in appropriate container for disposal. Gather larger pieces by an appropriate method. Reduce airborne dust by use of wet methods (e.g. water mist) and prevent scattering by moistening with water. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Material name: ACQ Pressure Treated Lumber  sds us 4502  Version #: 01  Issue date: May-21-2015  3 / 10
Precautions for safe handling

Do not burn treated wood. Do not use pressure treated wood as mulch. Dust can form an explosive mixture in air. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. If flash fire or explosion hazard is present, wear flame resistant clothing and face/head protection. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Use personal protective equipment as required. Ensure dust collection systems used for conveying combustible wood dusts are protected with and equipped with fire and explosion prevention and protection equipment. See NFPA 664 and NFPA 69 for further requirements, information and guidance.

Conditions for safe storage, including any incompatibilities

Store flat, supported and protected from direct contact with the ground. Store away from incompatible materials (see Section 10 of the SDS). Store in a cool dry place.

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</th>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper complex expressed as Copper oxides</td>
<td>PEL</td>
<td>1 mg/m³</td>
<td>Dust and mist.</td>
<td></td>
</tr>
<tr>
<td>Monoethanolamine (CAS 141-43-5)</td>
<td>PEL</td>
<td>6 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOOD/WOOD DUST</td>
<td>PEL</td>
<td>3 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
<td></td>
</tr>
</tbody>
</table>

ACGIH

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD/WOOD DUST</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>US ACGIH Threshold Limit Values: Short Term Exposure Limit (STEL): mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Components</td>
<td>Type</td>
<td>Value</td>
<td>Form</td>
</tr>
<tr>
<td>BORIC ACID (H₃BO₃)</td>
<td>STEL</td>
<td>6 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>(CAS 10043-35-3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m³, non-standard units

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>BORIC ACID (H₃BO₃)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>(CAS 10043-35-3)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Copper complex expressed as Copper oxides</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Dust and mist.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine (CAS 141-43-5)</td>
<td>STEL</td>
<td>6 ppm</td>
<td></td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper complex expressed as Copper oxides</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td>Monoethanolamine (CAS 141-43-5)</td>
<td>STEL</td>
<td>15 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>6 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 ppm</td>
<td></td>
</tr>
</tbody>
</table>
WOOD/WOOD DUST  TWA  1 mg/m³  Dust.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Georgia-Pacific Wood Products LLC voluntarily elects to adhere to exposure limits contained in OSHA's 1989 Air Contaminants Standard although certain limits were vacated in 1992. The present OSHA exposure limits governing wood dust is 15 mg/m³ (Total Dust) and 5 mg/m³ (Respirable Fraction).

Appropriate engineering controls

Due to the fire and explosive potential of dust when suspended in air, precautions should be taken when material is used in any operation which may generate dust. Local exhaust, general dilution ventilation in enclosed areas, and explosion proof equipment is recommended. Use wet methods, if appropriate, to reduce airborne dust concentrations.

Individual protection measures, such as personal protective equipment

Eye/face protection

Safety glasses or goggles are recommended when using this product. Ensure compliance with OSHA's PPE standard (29 CFR 1910.132 and .133) for eye and face protection.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other

Impervious protective clothing and gloves recommended to prevent drying or irritation of skin. Ensure compliance with OSHA's PPE standards (29 CFR 1910.132 (general) and 138 (hand protection)). Safety shower/eye wash fountain is recommended in the workplace area (29 CFR 1910.151 (c)).

Respiratory protection

A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

Thermal hazards

Wear appropriate thermal protective clothing (i.e. flame resistant clothing and head/face protection), when potential flash fire or explosion hazards are present.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Rigid board

Physical state

Solid.

Form

Solid wood

Color

Various

Odor

Resinous wood

Odor threshold

Not available.

pH

Not applicable

Melting point/freezing point

Not applicable

Initial boiling point and boiling range

Not applicable

Flash point

Not available.

Evaporation rate

Not applicable

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not applicable

Flammability limit - upper (%)

<= 40 g/cm³ Wood dust

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

Not applicable
Vapor density Not applicable
Relative density Not available.
Solubility(ies)
  Solubility (water) Insoluble
Partition coefficient (n-octanol/water) Not applicable
Auto-ignition temperature 400 - 500 °F (204.44 - 260 °C) for Wood
Decomposition temperature Not available
Viscosity Not available.
Other information
  Flash point class Combustible
  Specific gravity <1.0

10. Stability and reactivity
Reactivity None known.
Chemical stability Stable at normal conditions.
Possibility of hazardous reactions Will not occur.
Conditions to avoid Dust may form explosive mixture in air. Keep away from heat, sparks and open flame. Dust accumulation, dispersion of dust in air, high temperatures, open flame, sparks, or other sources of ignition. Contact with incompatible materials.
Incompatible materials Strong acids, alkalies, oxidizing agents and drying oils.
Hazardous decomposition Thermal decomposition may emit irritating fumes or gases of carbon monoxide, carbon dioxide, aldehydes, or organic acids.

11. Toxicological information
Information on likely routes of exposure
  Inhalation Dusts of this product may cause irritation to the nose, throat, or respiratory tract. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  Skin contact May cause an allergic skin reaction.
  Eye contact Causes eye irritation.
  Ingestion Due to material form and application, ingestion is considered unlikely. May cause irritation of the gastrointestinal tract.
Symptoms related to the physical, chemical and toxicological characteristics
Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects
Acute toxicity May cause an allergic skin reaction. May cause respiratory irritation.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACQ Pressure Treated Lumber</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>30790 mg/kg estimated</td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>5000 mg/l, 4 Hours estimated</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>12851 mg/kg estimated</td>
</tr>
<tr>
<td>Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BORIC ACID (H3BO3) (CAS 10043-35-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Acute**

**Dermal**
- LD50: Rabbit, 2730 mg/kg
- Oral: LD50: Rabbit, 268 mg/kg
- Oral: Mouse, 84 mg/kg

**Skin corrosion/irritation**
- Prolonged skin contact may cause temporary irritation. **Serious eye damage/eye irritation**
- Causes eye irritation. **Irritation**

**Respiratory or skin sensitization**
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause an allergic skin reaction. **Germ cell mutagenicity**
- Not classified.

**Carcinogenicity**
- Wood dust generated from sawing, sanding or machining this product may cause nasal dryness, irritation, coughing and sinusitis. The International Agency for Research on Cancer (IARC), and National Toxicology Program (NTP) classifies wood dust as a carcinogen. This classification is based on the increased occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation noted insufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon, or rectum with exposure to wood dust.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
- WOOD/WOOD DUST (CAS Not Assigned) 1 Carcinogenic to humans.

- Not listed.

**US. National Toxicology Program (NTP) Report on Carcinogens**
- WOOD/WOOD DUST (CAS Not Assigned) Known To Be Human Carcinogen.

**Reproductive toxicity**
- Not classified.

**Specific target organ toxicity**
- Single exposure: May cause respiratory irritation.
- Repeated exposure: Not classified.

**Aspiration hazard**
- Not available.

**Chronic effects**
- Prolonged inhalation may be harmful.

**Further information**
- MONOETHANOLAMINE. Inhalation of high concentrations of monoethanolamine has been reported to cause pulmonary, liver, kidney and skin damage in experimental animals. Monoethanolamine may be corrosive to the eyes, skin, respiratory system and gastrointestinal tract, and may cause permanent damage to the eyes. Monoethanolamine may be absorbed through the skin in harmful amounts and may cause allergic skin reactions. Monoethanolamine exposures may cause damage to the nervous system, lungs, liver or kidneys.

**COPPER COMPLEX EXPRESSED AS COPPER OXIDE.** Copper complex expressed as copper...
oxide in this product contains copper salts which, upon ingestion of high oral doses, can cause gastrointestinal disturbances, anemia, and secondary liver and kidney damage.

12. Ecological information

Ecotoxicity

This product contains small amounts of fungicides, which when released into the environment, may adversely affect plants and wildlife. Harmful to aquatic life.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACQ Pressure Treated Lumber</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fish 88.1062 mg/l, 96 hours estimated</td>
</tr>
<tr>
<td>Components</td>
<td>Species</td>
<td>Test Results</td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia 766.5 mg/L, 48 Hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Razorbback sucker (Xyrauchen texanus) &gt; 100 mg/l, 96 hours</td>
</tr>
<tr>
<td>Copper complex expressed as Copper oxides</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna) 0.036 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas) 0.0319 - 0.0544 mg/l, 96 hours</td>
</tr>
<tr>
<td>Didecyl dimethyl ammonium chloride** (CAS 7173-51-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>White sturgeon (Acipenser transmontanus) 0.001 - 0.01 mg/l, 96 hours</td>
</tr>
<tr>
<td>Components</td>
<td>Species</td>
<td>Test Results</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Rainbow trout,donaldson trout (Oncorhynchus mykiss) 114 - 196 mg/l, 96 hours</td>
</tr>
<tr>
<td>Monoethanolamine (CAS 141-43-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>IC50</td>
<td>Algae 15 mg/L, 72 Hours</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia 65 mg/L, 48 Hours</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

No data available.

Partition coefficient n-octanol / water (log Kow)

Monoethanolamine -1.31

Mobility in soil

No data available.

Other adverse effects

Pressure treated wood should not be used where it may come in direct or indirect contact with drinking water. Pressure treated wood should not be used in circumstances where preservative may become a component of food, animal feed or beehives.

13. Disposal considerations

Disposal instructions

Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of material according to Local, State, Federal, and Provincial Environmental Regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Material name: ACQ Pressure Treated Lumber

Waste from residues / unused products
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT
Not regulated as dangerous goods.

Transport in bulk according to
Not applicable.
Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
ACQ Pressure Treated Wood Products contains a quaternary ammonium compound, an EPA registered product.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Copper complex expressed as Copper oxides (CAS Proprietary)
Listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)

Chemical name
Copper complex expressed as Copper oxides

<table>
<thead>
<tr>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary</td>
<td>0.3</td>
</tr>
<tr>
<td>-</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

(a))  
BORIC ACID (H3BO3) (CAS 10043-35-3)  
Copper complex expressed as Copper oxides (CAS Proprietary)  

US. Massachusetts RTK - Substance List  
Copper complex expressed as Copper oxides (CAS Proprietary)  
Monoethanolamine (CAS 141-43-5)  

US. New Jersey Worker and Community Right-to-Know Act  
Copper complex expressed as Copper oxides (CAS Proprietary)  
Monoethanolamine (CAS 141-43-5)  
WOOD/WOOD DUST (CAS Not Assigned)  

US. Pennsylvania Worker and Community Right-to-Know Law  
Copper complex expressed as Copper oxides (CAS Proprietary)  
Monoethanolamine (CAS 141-43-5)  
WOOD/WOOD DUST (CAS Not Assigned)  

US. Rhode Island RTK  
Copper complex expressed as Copper oxides (CAS Proprietary)  

US. California Proposition 65  
California Proposition 65. WARNING: This product may generate wood dust, a chemical known to the state of California to cause cancer.  

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance  
WOOD/WOOD DUST (CAS Not Assigned) Listed: December 18, 2009  

International Inventories  
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)  
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).  

16. Other information, including date of preparation or last revision  
Issue date May-21-2015  
Version # 01  
Further information Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.  

HMIS® ratings  
Health: 2*  
Flammability: 1  
Physical hazard: 0  
Personal protection: X  

NFPA ratings  
Health: 2  
Flammability: 1  
Instability: 0  

Disclaimer This SDS is intended to quickly provide useful information to the user(s) of this material or product.  
It is not intended to serve as a comprehensive discussion of all possible risks or hazards, and it assumes a reasonable use of the product. The information contained in this SDS is believed to be accurate as of the date of preparation of this SDS and has been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. The user or
handler (or their employer) should consider the specific conditions in which this material will be used, handled, or stored and determine what specific safety or other precautions are required. Employers should ensure that their employees, agents, contractors, and customers who will use the product receive adequate warnings and safe handling procedures, including a current SDS. Product users or handlers (or their employer) who are unsure of what specific precautions are required should consult their employer, product supplier, or safety or health professionals before handling or working with this product. Please notify us immediately if you believe this SDS or other safety and health information about this product is inaccurate or incomplete.

**Revision Information**

- Composition / Information on Ingredients: Ingredients
- Physical & Chemical Properties: Multiple Properties
- Toxicological Information: Toxicological Data
- Ecological Information: Ecotoxicity
- Transport Information: Material Transportation Information
- Regulatory Information: United States
- HazReg Data: North America
- GHS: Classification
1 Identification of Products and Company

Products
Kingspan GreenGuard® IV XPS Insulation Board Kingspan
GreenGuard® VI XPS Insulation Board
Kingspan GreenGuard® IV 4 XPS Insulation Board

Company
Kingspan Insulation LLC
2100 RiverEdge Parkway, Suite 175
Atlanta, GA
USA, 30328
Tel: 1-800-241-4402
Email: info@kingspaninsulation.us
Website: www.kingspaninsulation.us

2 Hazards Identification

Classification of the substance or mixture according to GHS Classifications:
Not classified as a hazardous chemical according to GHS.

Label Elements: No hazard classifications.

Other Hazards: Board Product does not present an inhalation, ingestion, or contact health hazard unless subjected to operations such as cutting, sawing or machining which result in the generation of airborne particulate.

Other Hazards Classifications:

USA: This product conforms to the U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard’s definition of an “Article,” i.e., “…a manufactured item: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent upon its shape or design …; and (iii) which does not release, or otherwise result in exposure to, a hazardous chemical, under normal conditions of use.” [29 CFR 1910.1200 (b) (6) (iv)].

This product is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement.

Canada: This is not a controlled product under WHMIS. This product meets the definition of a “Manufactured Article” and is not subject to the regulations of the
Hazardous Products Act.

While this product is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) and under WHMIS, this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

3 Composition

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS NO.</th>
<th>% WEIGHT RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexabromocyclododecane flameretardant additive</td>
<td>3194-55-6</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

4 First-Aid Measures

Description of first aid measures:

Inhalation: If symptoms are experienced, remove source of contamination or have person move to fresh air. Obtain medical advice.

Skin: If irritation does occur, wash with plenty of water. If irritation persists, obtain medical advice.

Eyes: If particulate contacts the eyes, rinse cautiously with water while holding the eyelids open. If irritation persists obtain medical attention. DO NOT attempt to manually remove anything stuck to the eye.

Ingestion: Not acutely toxic if swallowed. If swallowed, call a POISON CENTER or doctor.

Most important symptoms and effects, both acute and delayed:

High concentrations of dust may cause coughing and mild, temporary irritation following a short-term exposure. Heavy prolonged industrial exposure to high airborne concentrations of dust may cause impaired lung function. Chronic bronchitis, pulmonary fibrosis and respiratory tract lesions have also been reported with high level inhaled dust exposures.

5 Fire-Fighting Measures

Extinguishing media: Use extinguishing agents approved for Class A hazards e.g. water spray, foam, carbon dioxide or dry chemical.

Special hazards arising from the substance: Not flammable. Product can burn if involved in a fire. During a fire, combustion can generate toxic fumes which may include resin fragments, smoke, carbon monoxide and carbon dioxide.
Advice for firefighters: As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Prevent water runoff from fire control from entering natural waterways, sewers and drinking water supplies.

6 Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:**
Wear proper personal protective equipment as indicated in Section 8.

**Environmental precautions:** It is good practice to prevent release of this product into the environment.

**Methods and material for containment and cleaning up:**
Sweep, scoop or vacuum product for recovery, recycling or disposal. Avoid raising dusts during cleaning.

**Additional information:** See Section 8 for information on selection of personal protective equipment. See Section 13 for information on disposal of spilled product.

7 Handling and Storage

**Precautions for safe handling:**
During cutting machining operations, avoid contact with eyes and skin. Wear protective gloves. Avoid breathing dusts. Do not eat, drink or smoke in work areas. Wash hands thoroughly after handling this material.

**Conditions for safe storage, including any compatibilities:**
KEEP OUT OF REACH OF CHILDREN. Protect from water and moisture. See Section 13 for disposal considerations.

8 Exposure Controls / Personal Protection

**Occupational exposure Limits:**
Consult local authorities for acceptable exposure limits.

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>ACGIH TWA</th>
<th>U.S OSHA TWA</th>
<th>ONTARIO (Canada) TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 mg/m³ (respirable)</td>
<td>Otherwise Specified (PNOS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 mg/m³ (inhalable)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalable dust Particles (insoluble or poorly soluble) Not</td>
<td>Exposure Controls:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Engineering controls: Provide good general ventilation or local exhaust ventilation when necessary to control dust concentrations below exposure limits.

Personal protection: Follow the directions for personal protective equipment for the worksite. Appropriate protective footwear is recommended when handling boards.

Inhalation: When dust concentrations in air exceed the occupational exposure guidelines, wear an approved particulate respirator equipped with an N95, R95 or P95 filter.

A respiratory protection program that meets the regulatory requirements, such as OSHA’s 29 CFR 1910.134 and ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator’s use.

Eyes / Face: Wear safety glasses or goggles for all cutting operations.

Skin: Not required for normal use of this product, however it is good practice to wear gloves and clean body-covering clothing.

<table>
<thead>
<tr>
<th>(respirable)</th>
<th>(PNOR)</th>
<th>(inhalable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 mg/m³ (total dust)</td>
<td>3 mg/m³ (respirable)</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Particles (insoluble or poorly soluble) Not Otherwise Regulated</td>
<td>Particles (insoluble or poorly soluble) Not Otherwise Specified (PNOS)</td>
<td></td>
</tr>
</tbody>
</table>

9 Physical and Chemical Properties

Information on basic physical and chemical properties:

**Appearance:** Solid; Green extruded polystyrene insulation board.

**Odor:** Odorless.

**Odor threshold:** Not applicable.

**pH:** Not applicable.

**Melting point:** >93°C (200°F).

**Evaporation Rate:** Not applicable.

**Flash point:** Not applicable.

**Flammability:** >260°C (500°F) ASTM D 1929.

**Explosive properties:** Not applicable.

**Oxidizing properties:** Not applicable.

**Sensitivity to mechanical impact:** Not applicable.

**Ignition temperature:** >482°C (900°F).

**Lower flammability or explosive limits:** Not applicable.
Sensitivity to static discharge:  
Not available.

Vapor pressure:  
Not applicable.

Vapor Density:  
Not applicable.

Relative density:  
0.07 (water=1).

Solubility (is):  
Insoluble in water.

Partition coefficient (n-octane / water):  
Not applicable.

Decomposition temperature:  
Not available.

VOC Content:  
Not available.

Viscosity:  
Not applicable.

10 Stability and Reactivity

Reactivity:  
Not classified for reactivity hazards.

Chemical stability:  
Stable at normal ambient and anticipated storage and handling conditions.

Possibility of hazardous reactions:  
None known.

Conditions to avoid:  
Do not use in conditions of extreme heat or near open flames.

Incompatible materials:  
Strong oxidizers, aromatic and chlorinated hydrocarbons.

Hazardous decomposition products:  
Thermal decomposition and incomplete combustion can produce toxic fumes containing the following: acids, acrolein, aldehydes, halogens, ketones, monomers, possible hydrocarbons, carbon monoxide and carbon dioxide.

11 Toxicological Information

Information on toxicological effects:

Acute health effects:  
Acute toxicity data are not available for this article.
Irritation: Worker experience with this material indicates the product is non-irritating. Animal test data indicates the material is non-irritating. Dusts of this product may cause mild, temporary skin irritation by mechanical abrasion. Dusts may cause temporary irritation as a foreign objection in the eye.

Chronic health effects: None known.

Sensitization: None known.

Neurological effects: None known.

Genetic effects: None known.

Reproductive effects: Data not available.

Developmental effects: For the flame retardant additive listed in section 3: NOAEL for teratogenic effects = 1,000 mg/kg bw (rat, gavage).

Target organ effects: None known.

Carcinogenicity: The component substances are not classified as carcinogens in humans as described by ACGIH (American Conference of Governmental Industrial Hygienists) and IARC (International Agency for Research on Cancer).

Medical conditions aggravated by exposure: None known.

Interactions with other chemicals: Tobacco smoking in combination with long-term high dust exposures may increase both smoking and dust-related pulmonary health problems.

12 Ecological Information

Toxicity: Not available.

Persistence and degradability: This product is not readily bio-degradable. Plastic components will photodegrade with prolonged exposures to UV light (e.g. sunlight). Product is treated with a flame retardant substance which is known to be persistent, bioaccumulative and toxic in the aquatic environment. Prevent releases to the environment and ensure proper disposal.

Bioaccumulative potential: Not available.

Mobility in soil: Not available.

13 Disposal Considerations

Waste treatment methods: Where facilities exist, the product and packaging can be recycled. Dispose in accordance with local regulations. Store material for disposal as indicated in Section 7 Handling and Storage. Proper incineration in state-of-the-art incinerators equipped with after-burners, yields carbon dioxide and water. Polymer materials may not decompose.
in modern sanitary landfills. Materials may be recycled where adequate collection and recycling facilities exist.

14 Transport Information

**UN Number:** Not regulated as a dangerous good for transport.

**UN proper shipping name:** Not regulated as a dangerous good for transport.

**Transport hazard class(es):** Not applicable.

**Packing group:** Not applicable.

**Environmental hazards:** Not applicable.

**Special precautions for user:** None known.

15 Regulatory Information

**Safety, health and environmental regulations / legislation specific for the substance or mixture:**

**USA:**
OSHA: Article, Non-Hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.120 (2012). TSCA Inventory: All component substances are listed on the TSCA 8(b) inventory. Contains: Hexabromocyclododecane as flame-retardant TSCA Section 8(a) PAIR reporting list; Section 8(d) health and safety reporting list of substances. SARA Title III: Sec.302 / 304: None. Sec. 313: None.

**Canada:**
WHMIS Classification: Not controlled. Product meets definition of a “manufactured article and is not subject to the regulations of the Hazardous Products Act. DSL: Component substances are listed on the DSL.

**RoHS Compliance:** Restricted substances Cadmium, Lead, Mercury, Chromium VI, Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) were below RoHS limits.

16 Other Information

**Revision Date:** October 1, 2014.

**References and sources for data:**
Supplier MSDS for component materials.

**Legend to abbreviations:**
ACGIH: American Conference of Governmental Industrial Hygienists.
IARC: International Agency for Research on Cancer.
OSHA: United States, Occupational Safety and Health Administration.
NOAEL: No observed adverse effect level.
NTP: National Toxicology Program.

**Additional information:**

For additional product and / or MSDS information, please contact Kingspan Insulation LLC at (800) 241-4402.

Information provided by sources external to our company and set forth herein is offered in good faith as accurate, but without guarantee. Safety precautions contained herein cannot anticipate all individual and unique situations. Conditions of use and suitability of the product for particular uses are beyond our control. All risks of use of the product are, therefore, assumed by the user, and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing herein is intended as recommendation for uses which infringe valid patents or as extension of license under valid patents. Appropriate warnings and safe handling procedures should be provided to users.
SECTION 1: IDENTIFICATION

1.1 **Product Identification:**

1.1.1 **Product Name:** HASA MURIATIC ACID

1.1.2 **CAS # (Chemical Abstracts Service):** 7647-01-0

1.1.3 **RTECS (Registry of Toxic Effects of Chemical Substances):** MW4025000

1.1.4 **EINECS (European Inventory of Existing Chemical Substances):** 231-595-7

1.1.5 **Synonym:** Hydrochloric Acid, Spirits of Salt

1.1.6 **Chemical Name:** Hydrochloric Acid

1.1.7 **Chemical Formula:** HCl

1.2 **Recommended Uses:** Household cleaning, swimming pool water pH control and neutralization.

1.3 **Company Identification:** Hasa Inc.
P.O. Box 802736
Santa Clarita, CA 91355

1.4 **Emergency Telephone Number:** CHEMTREC:
1-800-424-9300 (24 hour)

1.5 **Non-Emergency Assistance:** 661-259-5848
(8 AM – 5 PM PST / PDT)

SECTION 2: HAZARD(S) IDENTIFICATION

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Acute Toxicity (Oral): Category 4</th>
<th>Skin corrosion / irritation: Category 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Serious eye damage / irritation: Category 1</td>
<td>Specific Target Organ Toxicity (Single exposure) Category 3 (respiratory tract irritation)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Hazard</th>
<th>Corrosive to metals. Category 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbols</td>
<td>![DANGER]</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>Signal Word</td>
<td><strong>DANGER</strong></td>
</tr>
</tbody>
</table>
| Hazard Statement | Causes severe skin burns & eye damage.  
               Harmful if swallowed.  
               May cause respiratory irritation.  
               Maybe corrosive to metals. |
| Precautionary Statement | **Prevention** |
| Prevention | Wear protective gloves/protective clothing/eye protection/face protection.  
               Do not eat, drink or smoke when using this product.  
               Do not breathe mist or vapor.  
               Use only outdoors or in a well-ventilated area.  
               Wash hands thoroughly after handling.  
               Keep only in original container. |
| Response | If swallowed: Rinse mouth. Do NOT induce vomiting.  
               If inhaled: Remove person to fresh air and keep comfortable for breathing.  
               If on skin (or hair): Take off immediately all contaminated clothing.  
               Rinse skin with water/shower.  
               If in eyes: Rinse cautiously with water for several minutes.  
               Remove contact lenses, if present and easy to do.  
               Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. |
| Storage | Store locked up. Store in a corrosive resistant container. Store in a well-ventilated place. Keep container tightly closed. |
| Disposal | Dispose of container/contents in accordance with local, regional, national, international regulations as specified. |
SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Weight % (Approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Hydrochloric Acid</td>
<td>7647-01-0</td>
<td>31.45%</td>
</tr>
<tr>
<td>3.2 Water</td>
<td>7732-18-5</td>
<td>68.55%</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST-AID MEASURES

4.1. IF IN EYES
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

4.2. IF ON SKIN OR CLOTHING
- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

4.3. IF INHALED
- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

4.4. IF SWALLOWED
- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage.
SECTION 5: FIRE-FIGHTING MEASURES

5.1 **Products of Combustion:** Hydrogen and chlorine

5.2 **Fire Hazards in Presence of Various Substances:** Reacts with many metals to liberate hydrogen gas which can form explosive mixtures with air.

5.3 **Explosion Hazards:** Not sensitive.

5.4 **Fire Fighting Media and Instructions:**

<table>
<thead>
<tr>
<th>5.4.1</th>
<th>Extinguishing Media:</th>
<th>Use extinguishing measures appropriate to local circumstances and the surrounding environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4.2</td>
<td>Small Fires:</td>
<td>Use carbon dioxide, dry chemical, dry sand, alcohol-resistant foam or water spray.</td>
</tr>
<tr>
<td>5.4.3</td>
<td>Large Fires:</td>
<td>Water spray, fog or alcohol-resistant foam. Move containers from fire area if you can do it without risk. Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material.</td>
</tr>
</tbody>
</table>

5.5 **Fire Involving Tank Cars / Trailer Loads:**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 **Small Spill:**

Gather up with a squeegee and place in pool and spa. If this is not possible, absorb with sand, diatomaceous earth or similar products and securely bag, and place in trash for collection.

6.2 **Large Spill:**

Steps to be taken in case material is released or spilled: Spills or discharges into the environment involving large quantities of Hydrochloric Acid should be controlled and cleaned-up according to a pre-determined, affirmative written Spill Prevention and Control Program. Refer to Section 15 for spill/release reporting information. Spills should be handled immediately by neutralization and dilution of the spilled product by the use of Soda Ash (Sodium Carbonate), Lime (Calcium Hydroxide), or Limestone (Calcium Carbonate) with large amounts of water. For an interior (inside a closed space) spill be aware that the use of Soda Ash, Lime and Limestone will evolve heat and carbon dioxide and that ample ventilation must be provided.

If possible without personal risk, stop leak. Try to prevent the materials from entering drains, waterways, or sewers and dispose of in accordance with local regulations. Rinse exposed area with dilute sodium carbonate solution.
### SECTION 7: HANDLING AND STORAGE

7.1 **Handling:**
Keep away from skins and eyes. Do not inhale or swallow. Do not mix with chlorine type bleaches or other household chemicals. Whenever handling muriatic acid, wear protective clothing (goggles, old clothing and rubber gloves). Remove protective clothing and wash before reuse.

7.2 **Storage and Disposal:**
Store muriatic acid in a clean, dry place in the upright position. Keep out of reach of children, pets and other animals. Rinse empty container thoroughly before discarding.

### SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 **Engineering Controls:**
Local exhaust to maintain levels below Permissible Exposure Limit (PEL).

8.2 **Personal Protection:**
When necessary, wear splash goggles or safety glasses and gloves.

8.3 **Personal Protection in case of a Large Spill:**
Wear splash goggles or safety glasses and gloves. If natural ventilation is insufficient, wear a NIOSH approved respirator.

8.4 **Exposure Guidelines:**

<p>| 8.4.1 ACGIH (American Conference of Governmental and Industrial Hygienists) TLV (Threshold Limit Value) | 5 ppm (7 mg/m³) Ceiling |
| 8.4.2 PEL (OSHA Permissible Exposure Limit) | 5 ppm (7 mg/m³) Ceiling Limit |
| 8.4.3 IDLH (NIOSH Immediate Danger to Life &amp; Health) | 50 ppm (75 mg/m³) |
| 8.4.4 AIHA (American Industrial Hygiene Association) | ERPG – 1 (The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to one hour without experiencing other than mild transient adverse health effects or perceiving a clearly defined objectionable odor.): 3 ppm ERPG – 2 (The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual’s ability to take protective action.): 20 ppm ERPG – 3 (The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to one hour without experiencing or developing life-threatening health effects.): 150 ppm |</p>
<table>
<thead>
<tr>
<th>9.1 Appearance:</th>
<th>Colorless liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.2 Odor:</td>
<td>Irritating and pungent odor.</td>
</tr>
<tr>
<td>9.3 Odor Threshold:</td>
<td>4.7 ppm @ at 25 °C</td>
</tr>
<tr>
<td>9.4 pH:</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>9.5 Melting Point:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>9.6 Freezing point:</td>
<td>-46.9°C (-52.5°F)</td>
</tr>
<tr>
<td>9.7 Boiling Point &amp; Boiling Range:</td>
<td>85°C (185°F)</td>
</tr>
<tr>
<td>9.8 Flash Point:</td>
<td>No information available.</td>
</tr>
<tr>
<td>9.9 Evaporation Rate:</td>
<td>No information available.</td>
</tr>
<tr>
<td>9.10 Flammability (solid, gas):</td>
<td>Nonflammable and noncombustible.</td>
</tr>
<tr>
<td>9.11 Upper / Lower Flammability or Explosive Limits:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>9.12 Vapor Pressure:</td>
<td>40 mm Hg @ 30°C (86°F)</td>
</tr>
<tr>
<td>9.13 Vapor Density:</td>
<td>No information available.</td>
</tr>
<tr>
<td>9.14 Relative Density (Specific Gravity):</td>
<td>1.16 @ 15.5°C (60°F)</td>
</tr>
<tr>
<td>9.15 Solubility in Water:</td>
<td>Mixes with water in all concentrations.</td>
</tr>
<tr>
<td>9.16 Partition Coefficient: (n-octanol / water):</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>9.17 Auto-ignition Temperature:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>9.18 Decomposition Temperature:</td>
<td>85°C. Rate of decomposition increases with heat.</td>
</tr>
<tr>
<td>9.19 Molecular Weight:</td>
<td>36.46 g/mole</td>
</tr>
<tr>
<td>9.20 Viscosity:</td>
<td>1.55 centipoises @ 30°C (86°F)</td>
</tr>
</tbody>
</table>
### SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>10.1 Stability:</th>
<th>Stable under normal conditions of storage, handling, and use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2 Instability Temperature:</td>
<td>85°C. Rate of decomposition increases with heat.</td>
</tr>
<tr>
<td>10.3 Conditions of Instability:</td>
<td>High heat, ultraviolet light.</td>
</tr>
<tr>
<td>10.4 Incompatibility with Various Substances:</td>
<td>Oxidizing agents, acids, nitrogen containing organic, metals, iron, copper, nickel, cobalt, organic materials, and ammonia. Corrosive to most metals with evolution of hydrogen gas, which may form explosive mixtures with air.</td>
</tr>
<tr>
<td>10.5 Special Remarks on Reactivity:</td>
<td>Rate of decomposition increases with heat.</td>
</tr>
<tr>
<td>10.6 Hazardous Polymerization:</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

### SECTION 11: TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>11.1 Routes of Entry:</th>
<th>Eyes, skin, ingestion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.2 Eye damage &amp; skin corrosion:</td>
<td>Causes eye burns. Contact with this material will cause burns to the skin, eyes and mucous membranes. Permanent eye damage including blindness could result.</td>
</tr>
<tr>
<td>11.3 Acute Oral Toxicity (LD₅₀):</td>
<td>NIOSH: 900 mg/kg (rabbit)</td>
</tr>
<tr>
<td>11.4 Acute Inhalation Toxicity (LC₅₀):</td>
<td>3124 mg/l, 1 Hour (rat)</td>
</tr>
<tr>
<td>11.5 Toxic Effects on Humans:</td>
<td>Harmful if swallowed. Causes digestive tract burns. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.</td>
</tr>
<tr>
<td>11.6 Carcinogenic [Cancer Potential] Information:</td>
<td></td>
</tr>
<tr>
<td>Proposition 65, California only: (Safe Drinking Water and Toxic Enforcement Act of 1986):</td>
<td>Not Listed.</td>
</tr>
<tr>
<td>11.7 Mutagenic Effects:</td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
</tr>
<tr>
<td>11.8 Signs and Symptoms of Exposure:</td>
<td>Exposure to hydrochloric acid may cause severe burns at the contact points.</td>
</tr>
<tr>
<td>11.9 Medical Conditions Generally Aggravated by Exposure:</td>
<td>Exposure to fumes may aggravate dermatitis and breathing disorders.</td>
</tr>
<tr>
<td>11.10</td>
<td><strong>Health Hazards (Acute and Chronic):</strong></td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Hydrogen Chloride, both as a gas and in a solution as Hydrochloric Acid, is a corrosive substance and can cause severe and painful burns on contact with any part of the body or if taken internally. The mucous membranes of the eyes and the upper respiratory tract are especially susceptible to the irritating effects of high atmospheric concentrations of Hydrogen Chloride. The gas or vapor is so penetrating and pungent that when high concentrations do occur, those exposed should immediately leave the contaminated area.</td>
</tr>
</tbody>
</table>
## SECTION 12: ECOLOGICAL INFORMATION

| 12.1 | **Ecotoxicity**<br>**General:** | This product is toxic to fish and aquatic organisms. Do not contaminate water containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. |
| 12.2 | **Ecotoxicological**<br>**Information:**<br>\( \text{LC}_{50} \) Shrimp 100 to 330 ppm/48 hr (salt water)<br>\( \text{LC}_{50} \) Mosquito Fish 282 mg/L (24 to 96 hours)<br>\( \text{LC}_{50} \) Green crabs 100 mg/L (96 hr produced no stress effects)<br>\( \text{LC}_{50} \) Gold fish 180 mg/L (96 hours)<br>Aquatic Hazard Concern Level: moderate |
| 12.3 | **Persistence and Degradation:** | When hydrochloric acid is spilled onto soil, it will begin to infiltrate. The presence of water in the soil will influence the rate of chemical movement in the soil. During transport through the soil, hydrochloric acid will dissolve some of the soil material, in particular those of a carbonate base. The acid will be expected to remain for transport down toward the ground water table. Hydrogen chloride in water dissociates almost completely, with the hydrogen ion captured by the water molecules to form the hydronium ion. |
| 12.4 | **Products of Biodegradation:** | Not pertinent. |
SECTION 13: DISPOSAL CONSIDERATIONS

Do not contaminate food or feed by storage, disposal, or cleaning of equipment. Product or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination system (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Dispose of in accordance with all applicable local, county, State, and Federal regulations.

SECTION 14: TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>14.1 Shipping Name:</th>
<th>Hydrochloric Acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 Hazard Class / Division:</td>
<td>8</td>
</tr>
<tr>
<td>14.3 Identification No.:</td>
<td>UN 1789</td>
</tr>
<tr>
<td>14.4 Packing Group:</td>
<td>PG II</td>
</tr>
<tr>
<td>14.5 Reportable Quantity (RQ):</td>
<td>5,000 lb (1643 gallons)</td>
</tr>
</tbody>
</table>
| 14.6 DOT Special Permit 6614: | Hydrochloric acid may be shipped in deposit 1 gallon polyethylene bottles secured 4 per case in a plastic crate in accordance with DOT-SP-6614. In these cases, the special permit number “DOTSP-6614” is included in the shipping description. The shipping description for return of empty deposit bottles and crates is “RESIDUE: LAST CONTAINED UN1789, HYDROCHLORIC ACID, 8, PGII, DOT-SP 6614”.
| 14.7 Deposit Pails, Carboys and Drums: | The shipping description for return of empty deposit pails, carboys, and drum is “RESIDUE: LAST CONTAINED UN1789, HYDROCHLORIC ACID, 8, PGII”. |
| 14.8 Materials of Trade (MOT) Exceptions. | Certain hazardous materials transported in small quantities as part of a business are subject to less regulation, because of the limited hazard they pose. These materials are known as Materials of Trade. The regulations that apply to MOTs are found in 49 CFR § 173.6. |

This information is not intended to convey all specific regulatory or operational requirements / information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.
# SECTION 15: REGULATORY INFORMATION

## 15.1 U.S. Regulations:

<table>
<thead>
<tr>
<th>Section</th>
<th>Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.1.1</td>
<td>OSHA HAZCOM (Hazard Communication)</td>
<td>This material is considered hazardous under the HAZCOM standard (29 CFR 1910.1200).</td>
</tr>
<tr>
<td>15.1.3</td>
<td>EPA EPCRA (EPA Emergency Planning and Community Right-to-know Act)</td>
<td>Not listed on Extremely Hazardous Substances and Their Threshold Planning Quantities. (Appendix A to 40 CFR Part 355)</td>
</tr>
<tr>
<td>15.1.4</td>
<td>EPA TSCA (Toxic Substance Control Act)</td>
<td>All components are listed or exempted. TSCA 12(b): This product is not subject to export notification.</td>
</tr>
<tr>
<td>15.1.5</td>
<td>EPA CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)</td>
<td>Reportable Quantity (RQ) under CERCLA: 5000 lbs. (1643 gallons).</td>
</tr>
<tr>
<td>15.1.6</td>
<td>EPA FIFRA (Federal Insecticide, Fungicide, Fungicide, and Rodenticide Act)</td>
<td>Not regulated under FIFRA standard.</td>
</tr>
<tr>
<td>15.1.7</td>
<td>EPA RMP (Risk Management Plan)</td>
<td>Not regulated under RMP. (40 CFR 68.130)</td>
</tr>
</tbody>
</table>

## 15.2 State of California Regulations:

<table>
<thead>
<tr>
<th>Section</th>
<th>Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.2.1</td>
<td>CDPR (California Department of Pesticide Regulation)</td>
<td>Registration No: 10897-50008-AA (spray adjuvant)</td>
</tr>
<tr>
<td>15.2.2</td>
<td>CalARP (California Accidental Release Prevention)</td>
<td>Not regulated.</td>
</tr>
</tbody>
</table>

## 15.3 Canada Regulations:

<table>
<thead>
<tr>
<th>Section</th>
<th>Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.3.1</td>
<td>WHMIS (Workplace Hazardous Materials Information System)</td>
<td>WHMIS classification: D1A - Poisonous and infectious material - Immediate and serious effects - Very toxic E - Corrosive Materials</td>
</tr>
<tr>
<td>15.3.2</td>
<td>DSL (Domestic Substances List)</td>
<td>All components of this product are on the DSL.</td>
</tr>
</tbody>
</table>

## 15.4 International Inventory:

<table>
<thead>
<tr>
<th>Section</th>
<th>Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.4.1</td>
<td>AICS (Australian Inventory of Chemical Substances)</td>
<td>On inventory or in compliance with inventory.</td>
</tr>
<tr>
<td>15.4.2</td>
<td>KECI (Korean Existing Chemicals Inventory)</td>
<td>On inventory or in compliance with inventory.</td>
</tr>
<tr>
<td>15.4.3</td>
<td>PICCS (Philippine Inventory of Chemicals and Chemical Substances)</td>
<td>On inventory or in compliance with inventory.</td>
</tr>
<tr>
<td>15.4.4</td>
<td>IECSC (Inventory of Existing Chemical Substances in China)</td>
<td>On inventory or in compliance with inventory.</td>
</tr>
<tr>
<td>15.4.5</td>
<td>NZIoC (New Zealand Inventory of Chemicals)</td>
<td>On inventory or in compliance with inventory.</td>
</tr>
</tbody>
</table>
### SECTION 16: OTHER INFORMATION

#### 16.1 HMIS III (Hazardous Materials Identification System):

| 16.1.1 HEALTH | 3 |
| 16.1.2 FLAMMABILITY | 0 |
| 16.1.3 PHYSICAL HAZARD | 0 |
| 16.1.4 PERSONAL PROTECTION | See Section 8 |

#### 16.2 NFPA 704 (National Fire Protection Association):

| 16.2.1 Health | 3 |
| 16.2.2 Flammability | 0 |
| 16.2.3 Instability | 0 |
| 16.2.4 Special | None |

#### 16.3 International Fire Code / International Building Code:

Corrosive Liquid.

#### 16.4 ANSI (American National Standards Institute):

| 16.4.1 Hazardous Industrial Chemicals - MSDSs-Preparation: | Complies with ANSI Z400.1 – 2004. |

**Note:** To convert concentrations in air (at 25°C) from ppm to mg/m³:

\[
mg/m^3 = (ppm) \times \text{(molecular weight of the compound)} / (24.45) \text{ For hydrochloric acid: } 1 \text{ ppm} = 1.49 \text{ mg/m}^3.
\]
Disclaimer of Liability:

The information contained herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge and belief. NO WARRANTY OR GUARANTEE, express or implied, is made regarding the product performance, product stability, or as to any other condition of use, handling, transportation, and storage. Customer use, handling, transportation, and storage may involve additional safety and/or performance considerations. Our technical personnel will be happy to respond to questions regarding safe handling, storage, transportation, and use procedures. The safe handling, storage, transportation, and use procedures remain the sole responsibility of the customer. No suggestions for handling, storage, transportation, or use are intended as or to be construed as recommendations which may infringe on any existing patents or violate any Federal, State, and/or local law and/or regulation, ordinance, standard, etc. This Safety Data Sheet has been prepared by Hasa, Inc. staff from test reports and other information available in the public domain.
1 Identification

- **Product identifier**
  - **Trade name:** Hilti HIT-RE 500-SD
  - **Container size:** 330 ml, 500 ml
  - **Relevant identified uses of the substance or mixture and uses advised against**
  - **Sector of Use** Building and construction work
  - **Application of the substance / the mixture** Adhesive mortar for rebar and anchor fastenings in solid concrete

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    Hilti, Inc.
    5400 South 122nd East Ave.
    US-Tulsa, OK 74146
    Phone: (800) 879-8000
    Fax: (800) 879-7000
    Español: (800) 879-5000

- **Information department:**
  anchor.hse@hilti.com
  see section 16

- **Emergency telephone number:**
  Chem-Trec
  Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
  Tel.: 703 527 3887 (Other countries)
## 2 Hazard(s) identification

- **Classification of the substance or mixture**
  - Skin Corr. 1A  H314 Causes severe skin burns and eye damage.
  - Eye Dam. 1   H318 Causes serious eye damage.
  - Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.
  - Sens. 1   H317 May cause an allergic skin reaction.

- **Label elements**
  - **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS05
    - GHS07
    - GHS09

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - m-Xylylenediamine
  - Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)
  - Reaction product: bisphenol-F epichlorhydrin resin, MW 700

- **Hazard statements**
  - H314 Causes severe skin burns and eye damage.
  - H317 May cause an allergic skin reaction.
  - H411 Toxic to aquatic life with long lasting effects.

- **Precautionary statements**
  - **P260** Do not breathe vapours.
  - **P280** Wear protective gloves/protective clothing/eye protection/face protection.
  - **P303+P361+P353** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - **P305+P351+P338** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - **P333+P313** If skin irritation or rash occurs: Get medical advice/attention.
  - **P337+P313** If eye irritation persists: Get medical advice/attention.

(Contd. on page 2)
Trade name: Hilti HIT-RE 500-SD

- Classification system
- NFPA ratings (scale 0-4)
  
  Health = 3  
  Fire = 1  
  Reactivity = 0

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

- Additional information:

  A  B  
  Hilti HIT

- Information pertaining to particular dangers for man and environment: A
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H317 May cause an allergic skin reaction.
  H411 Toxic to aquatic life with long lasting effects.

- Information pertaining to particular dangers for man and environment: B
  H314 Causes severe skin burns and eye damage.
  H317 May cause an allergic skin reaction.
  H412 Harmful to aquatic life with long lasting effects.
3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description:
  2-component-foilpack, contains:
  Component A: Epoxy resin, Reactive diluent, inorganic filler
  Component B: Amine hardener, inorganic filler

Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:

<table>
<thead>
<tr>
<th>Component ID</th>
<th>Description</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>25068-38-6</td>
<td>Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)</td>
<td>25-50%</td>
</tr>
<tr>
<td>28064-14-4</td>
<td>Reaction product: bisphenol-F epichlorhydrin resin, MW 700</td>
<td>10-30%</td>
</tr>
<tr>
<td>16096-31-4</td>
<td>1,6-bis(2,3-epoxypropoxy)hexane</td>
<td>10-25%</td>
</tr>
<tr>
<td>30499-70-8</td>
<td>Trimethylolpropane, (chloromethyl)oxirane polymer</td>
<td>2.5-10%</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
<td>25-50%</td>
</tr>
</tbody>
</table>

- Dangerous components B:

<table>
<thead>
<tr>
<th>Component ID</th>
<th>Description</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1477-55-0</td>
<td>m-Xylylenediamine</td>
<td>25-40%</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz (SiO2)</td>
<td>15-30%</td>
</tr>
<tr>
<td>1344-28-1</td>
<td>Aluminium oxide</td>
<td>5-10%</td>
</tr>
</tbody>
</table>

- Additional information For the wording of the listed risk phrases refer to section 16.

4 First-aid measures

- Description of first aid measures
- General information Immediately remove any clothing soiled by the product.
  
- After inhalation
  Take affected persons into fresh air and keep quiet.
  Seek medical treatment in case of complaints.
  
- After skin contact Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 3)
### 5 Fire-fighting measures

- **Extinguishing media**
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Suitable extinguishing agents**
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
- Nitrogen oxides (NOx)
- Carbon monoxide (CO)

In certain fire conditions, traces of other toxic gases cannot be excluded.

- **Advice for firefighters**
  - **Protective equipment:** Wear self-contained respiratory protective device.
  - **Additional information**
    - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
  - Wear protective clothing.
  - Ensure adequate ventilation

- **Environmental precautions:**
  - Do not allow product to reach sewage system or any water course.
  - Do not allow to penetrate the ground/soil.

- **Methods and material for containment and cleaning up:**
  - Pick up mechanically.
  - Clean the affected area carefully; suitable cleaners are:
    - organic solvent
  - Ensure adequate ventilation.
  - Dispose contaminated material as waste according to item 13.

- **Reference to other sections**
  - See Section 7 for information on safe handling
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
### 7 Handling and storage

#### Trade name: Hilti HIT-RE 500-SD

- **Precautions for safe handling**
  - The usual precautionary measures for handling chemicals should be followed.
  - Use only in well ventilated areas.
  - Take note of emission threshold.
  - Check the expiry date: see imprint on manifold (month/year). Do not use expired mortar!

- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

- **Conditions for safe storage, including any incompatibilities**

- **Storage**
  - **Requirements to be met by storerooms and receptacles:**
    - Keep in a cool, dry and dark place; 41 °F / 5 °C to 77 °F / 25 °C.
  - **Information about storage in one common storage facility:** Store away from foodstuffs.

- **Storage class** As per VCI (1991) storage classification concept.

- **Specific end use(s)** Adhesive mortar for rebar and anchor fastenings in solid concrete

(Contd. on page 4)
8 Exposure controls/personal protection

- Control parameters
- Components with limit values that require monitoring at the workplace:
  The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.

<table>
<thead>
<tr>
<th>1477-55-0 m-Xylylenediamine (25-50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL</td>
</tr>
<tr>
<td>Skin</td>
</tr>
<tr>
<td>TLV</td>
</tr>
<tr>
<td>Skin</td>
</tr>
</tbody>
</table>

- Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
- Personal protective equipment
  - General protective and hygienic measures
    The usual precautionary measures for handling chemicals should be followed.
    Do not eat, drink, smoke or sniff while working.
    Do not inhale gases / fumes / aerosols.
    Avoid contact with the eyes and skin.
    Clean skin thoroughly immediately after handling the product.
    Ensure that washing facilities are available at the work place.
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing
    Store protective clothing separately.
    Wash hands before breaks and at the end of work.
    Use skin protection cream for skin protection.
    Do not carry product impregnated cleaning cloths in trouser pockets.
  - Breathing equipment:
    Not necessary if room is well-ventilated.
    In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
  - Recommended filter device for short term use: Filter AX
  - Protection of hands:
    Protective gloves.
    Only use chemical-protective gloves with CE-labeling of category III.
    EN 374
    Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.
    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Material of gloves
    Nitrile rubber, NBR
    Recommended thickness of the material: ≥ 0.4 mm
    The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
  - Penetration time of glove material
    Value for the permeation: Level 6 (> 480 min)
    The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  - As protection from splashes gloves made of the following materials are suitable: Nitrile rubber, NBR
    Not suitable are gloves made of the following materials:
    Natural rubber, NR
    Leather gloves
    Strong gloves

(Contd. on page 5)
Eye protection:

- Tightly sealed goggles.
- Gauze goggles
- Face protection
  - EN 166 / EN 170

Body protection:

- Protective work clothing.
9 Physical and chemical properties

- Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Pasty</td>
</tr>
<tr>
<td>Color</td>
<td>Component A: grey</td>
</tr>
<tr>
<td></td>
<td>Component B: red</td>
</tr>
<tr>
<td></td>
<td>Mixture: red</td>
</tr>
<tr>
<td>Odor</td>
<td>Amine-like</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH-value</td>
<td>Component A: 7</td>
</tr>
<tr>
<td></td>
<td>Component B: 11.5</td>
</tr>
<tr>
<td></td>
<td>Mixture: 11.5</td>
</tr>
<tr>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Change in condition</td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Not determined</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>&gt; 200 °C (&gt; 392 °F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;100 °C (&gt;212 °F) (DIN EN ISO 1523)</td>
</tr>
<tr>
<td>Flammability (solid, gaseous)</td>
<td>Not determined</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor pressure at 20 °C (68 °F)</td>
<td>0.04 hPa</td>
</tr>
<tr>
<td>Density</td>
<td>Component A: 1.5 g/cm³ (DIN 51757)</td>
</tr>
<tr>
<td></td>
<td>Component B: 1.4 g/cm³ (DIN 51757)</td>
</tr>
<tr>
<td></td>
<td>Not determined</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not determined</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic at 20 °C (68 °F):</td>
<td>50 Pa.s (DIN 53019)</td>
</tr>
<tr>
<td></td>
<td>kinematic</td>
</tr>
<tr>
<td>at 20 °C (68 °F):</td>
<td>&gt; 20 s (ISO 2431)</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
</tbody>
</table>

10 Stability and reactivity

- Reactivity                                  |                                           |
- Chemical stability                           |                                           |
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications. |
- Possibility of hazardous reactions: No dangerous reactions known. |
- Conditions to avoid: No further relevant information available. |
- Incompatible materials: No further relevant information available. |
- Hazardous decomposition products: No dangerous decomposition products known |
Trade name: Hilti HIT-RE 500-SD

12 Ecological information

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: Strong caustic effect on skin and mucous membranes.
      - on the eye:
        Strong caustic effect.
        Strong irritant with the danger of severe eye injury.
    - Sensitization: Sensitization possible through skin contact.
    - Additional toxicological information:
      The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
      - Harmful
      - Corrosive
      - Irritant
    - Carcinogenic categories
      - NTP (National Toxicology Program)
        - 14808-60-7 Quartz (SiO2)
· Persistence and degradability No further relevant information available.
· Behavior in environmental systems:
  · Bioaccumulative potential No further relevant information available.
  · Mobility in soil No further relevant information available.
· Ecotoxical effects:
  · Remark: Toxic for fish
· Additional ecological information:
  · According to the formulation contains the following heavy metals and compounds from the EU guideline NO. 2006/11/EC: None
· General notes:
  Avoid transfer into the environment.
  The product contains materials that are harmful to the environment.
  Also poisonous for fish and plankton in water bodies.
  Toxic for aquatic organisms
  Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.
· Results of PBT and vPvB assessment
  · PBT: Not applicable.
  · vPvB: Not applicable.
  · Other adverse effects No further relevant information available.

13 Disposal considerations
· Waste treatment methods
· Recommendation
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  Hand over to hazardous waste disposers.
  Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations.
· European waste catalogue:
  · 08 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances
  · 20 01 27* paint, inks, adhesives and resins containing dangerous substances
· Uncleaned packagings:
  · Recommendation:
    Disposal must be made according to official regulations.
    Dispose of packaging according to regulations on the disposal of packagings.
### 14 Transport information

<table>
<thead>
<tr>
<th><strong>UN-Number</strong></th>
<th>UN3259</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>AMINES, SOLID, CORROSIVE, N.O.S. (m-Xylylenediamine)</td>
</tr>
<tr>
<td><strong>DOT Class</strong></td>
<td>8 Corrosive substances</td>
</tr>
<tr>
<td><strong>ADR, IMDG, IATA Class</strong></td>
<td>8 Corrosive substances</td>
</tr>
<tr>
<td><strong>EMS Number</strong></td>
<td>F-A,S-B</td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>UN &quot;Model Regulation&quot;:</strong></td>
<td>UN3259 AMINES, SOLID, CORROSIVE, N.O.S. (m-Xylylenediamine), 8, II</td>
</tr>
<tr>
<td><strong>HS-Code:</strong></td>
<td>3214 10 10: Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics</td>
</tr>
</tbody>
</table>

*Limited quantities (LQ) 1 kg*
## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - Proposition 65:
    - None of the ingredients is listed.
  - TLV (Threshold Limit Value established by ACGIH)
    - 14808-60-7 Quartz (SiO2) A2
    - 1344-28-1 aluminium oxide A4
  - MAK (German Maximum Workplace Concentration)
    - 14808-60-7 Quartz (SiO2) 1
    - 1344-28-1 aluminium oxide 2
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    - 14808-60-7 Quartz (SiO2)
  - National regulations
    - Information about limitation of use: Employment restrictions concerning young persons must be observed.
    - Chemical safety assessment: not required.
Trade name: Hilti HIT-RE 500-SD

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases** H318 Causes serious eye damage.
- **Department issuing SDS:**
  Hilti Entwicklungsgesellschaft mbH
  Hiltistrasse 6
  D-86916 Kaufering

(Contd. of page 9)

Tel.: +49 8191 906310 Fax:
+49 8191 90176310 e-mail:
anchor.hse@hilti.com

- **Contact:** Mechthild Krauter
- **Date of preparation / last revision** 05/18/2015 / 7
- **Abbreviations and acronyms:**
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
  Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

* Data compared to the previous version altered.
PRODUCT SAFETY DATA SHEET

The product referenced in this PSDS document is a consumer product. Under OSHA regulations vapor retarder / barrier is considered an “article” and is not subject to OSHA Hazard Communication Standard MSDS/SDS requirements which apply for “hazardous chemicals in the workplace.” Additionally, vapor retarder / barrier is considered an “article” under the Global Harmonized System and is exempted from the GHS labeling and SDS classification criteria.

Section 1  Product and Company Identification

<table>
<thead>
<tr>
<th>Product Description:</th>
<th>Vapor Retarder / Barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock:</td>
<td>Various</td>
</tr>
<tr>
<td>Formula:</td>
<td>Various</td>
</tr>
<tr>
<td>Company:</td>
<td>Poly-America, LP</td>
</tr>
<tr>
<td></td>
<td>2000 W Marshall Drive</td>
</tr>
<tr>
<td></td>
<td>Grand Prairie, TX 75051</td>
</tr>
<tr>
<td>Emergency Phone Number:</td>
<td>1-800-527-3322 ext. 7411</td>
</tr>
<tr>
<td>Notice:</td>
<td>This product is not FDA, CPSC or NSF compliant. It is unsuitable for use in applications such as direct or indirect food contact, toys, medical device or pharmaceutical applications or for potable water application.</td>
</tr>
</tbody>
</table>

Section 2  Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>% by wt.</th>
<th>95 -100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene</td>
<td></td>
</tr>
</tbody>
</table>

Section 3  Hazards Identification

This product is an inert, non-hazardous solid article.

Exposure to vapors and fumes from heating the polymer to decomposition may cause eye, mucous membrane and respiratory irritation.

Vapor retarder / barrier can create a suffocation hazard when placed over the nose and mouth.

KEEP OUT OF REACH OF CHILDREN

Section 4  First Aid Measures

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Swallowing: No adverse effects are expected, however, if this material is swallowed call a physician or poison control center.

Skin: No adverse effects are expected from normal contact. Molten or heated vapor retarder/barrier may cause serious burns. For contact with molten vapor retarder/barrier material, flush area with large amounts of cold water. Do not attempt to remove material that adheres to the skin. Get prompt medical attention.

Inhalation: No adverse effects are expected from normal use of this product. Breathing vapors and fumes from heating the polymer to decomposition may cause eye, mucous membrane and respiratory irritation. If exposure to decomposition of product occurs and irritation develops, remove to fresh air. If irritation persists, seek medical attention.

Eyes: No adverse effects are expected from contact but any foreign body in the eye may cause irritation. No first aid is normally needed.

Section 5 Fire Fighting Measures

The flash point of this material is over 600º F. If a fire should occur, Carbon Monoxide (CO) and irritating smoke may be produced. Wear NIOSH approved self-contained breathing apparatus when fighting fires in enclosed areas. Fight fire with water, CO₂, or dry chemicals. Use flooding quantities of water until well after the fire is out.

Section 6 Accidental Release Measures

Clean up material promptly to avoid a slipping hazard. As a matter of good practice; prevent material from entering storm drains, surface waters. Collect for use or disposal.

Section 7 Handling and Storage

This product is normally shipped on pallets.

Store in a cool, dry area away from excessive heat

Section 8 Exposure Controls and Personal Protection

Ventilation: General ventilation should be adequate for normal use.

Hand Protection: None needed under normal use conditions.

Eye Protection: None needed under normal use conditions.

Respiratory Protection:

Section 9 Physical and Chemical Properties
Density will vary depending on color, and processing components. Therefore, the product can sink or float in water depending on the properties. The product is not soluble in water and is odorless at ambient temperature.

Section 10 Stability and Reactivity

This product is stable and non-reactive. Hazardous decomposition of products can occur if overheated or ignited.

Section 11 Ecological Information

No data is available at this time. This material is an inert plastic product. No adverse environmental effects are expected from normal use or disposal.

Section 12 Disposal Measures

Dispose in accordance with federal, state and local regulations as ordinary trash.

Section 13 Transportation

This product is not a regulated substance under the Department of Transportation (DOT) regulations.

Section 14 Regulatory Information

Notice: The information herein is presented in good faith and believed to be accurate as of the effective date shown. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyers’ responsibility to ensure that its activities comply with federal, state, and local laws. The following specific information is made for purpose of complying with numerous federal, state and local law regulations. See other sections for health and safety information.

Sara 313 Information: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA Hazard Category: This product has been reviewed according to the EPA “Hazard Categories” (SARA Title III) and is considered, under applicable conditions to meet the following categories: Not to have met any hazard category.

Toxic Substances Control Act (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

State Right-to-Know: This product is not known to contain any substances subject to disclosure requirements of New Jersey, Pennsylvania and California.

National Fire Protection Association (NFPA) ratings:

Health - 0     Flammability - 1     Reactivity - 0
SAFETY DATA SHEET

1. Identification

Product identifier L&M Seal Hard
Other means of identification Not available.
Recommended use Concrete hardener/sealer.
Recommended restrictions None known.
Manufacturer/Importer/Supplier/Distributor information
Company Name LATICRETE International
Address 1 Laticrete Park, N
Bethany, CT 06524
Telephone (203)-393-0010
Contact person Steve Fine
Website www.laticrete.com
Emergency phone number Call CHEMTREC day or night
USA/Canada - 1.800.424.9300
Mexico - 1.800.681.9531
Outside USA/Canada
1.703.527.3887

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 1
OSHA defined hazards Not classified.
Label elements

Signal word Danger
Hazard statement Causes skin irritation. Causes serious eye damage.
Precautionary statement
Prevention Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.
Response If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
Storage Store away from incompatible materials.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC) Not classified.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium silicate</td>
<td>1344-09-8</td>
<td>10 - 13</td>
</tr>
</tbody>
</table>

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
4. First-aid measures

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.

Skin contact
Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Get medical attention immediately.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn’t get into the lungs. Get medical attention if any discomfort continues.

Most important symptoms/effects, acute and delayed
Irritation of eyes and mucous membranes. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
By heating and fire, irritating vapors/gases may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire-fighting equipment/instructions
Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions
Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.

Avoid release to the environment. Do not discharge into drains, water courses or onto the ground. Environmental manager must be informed of all major releases.

7. Handling and storage

Precautions for safe handling
Do not breathe mist or vapor. Do not get in eyes, on skin, on clothing. Use with adequate ventilation. Wear appropriate personal protective equipment. Use with adequate ventilation. Wear appropriate personal protective equipment. Use with adequate ventilation. Wear appropriate personal protective equipment. Use with adequate ventilation. Wear appropriate personal protective equipment. Use with adequate ventilation. Wear appropriate personal protective equipment. Use with adequate ventilation. Wear appropriate personal protective equipment.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed. Store in a cool and well-ventilated place. Store away from incompatible materials (See Section 10).

8. Exposure controls/personal protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Biological limit values
No biological exposure limits noted for the ingredient(s).
### Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

### Individual protection measures, such as personal protective equipment

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye/face protection</strong></td>
<td>Wear safety glasses with side shields (or goggles). Face-shield.</td>
</tr>
<tr>
<td><strong>Skin protection</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hand protection</strong></td>
<td>Wear appropriate chemical resistant gloves.</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>Wear appropriate chemical resistant clothing.</td>
</tr>
<tr>
<td><strong>Respiratory protection</strong></td>
<td>In case of insufficient ventilation, wear suitable respiratory equipment.</td>
</tr>
<tr>
<td><strong>Thermal hazards</strong></td>
<td>Wear appropriate thermal protective clothing, when necessary.</td>
</tr>
</tbody>
</table>

### General hygiene considerations
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Clear liquid.</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid.</td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td>Liquid.</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Clear.</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Odorless.</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>11.3</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Non flammable.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability limit - lower (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability limit - upper (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Explosive limit - lower (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Explosive limit - upper (%)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>1.39</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Soluble.</td>
</tr>
<tr>
<td><strong>Solubility (water)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td>(n-octanol/water)</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reactivity</strong></td>
<td>The product is stable and non-reactive under normal conditions of use, storage and transport.</td>
</tr>
<tr>
<td><strong>Chemical stability</strong></td>
<td>Material is stable under normal conditions.</td>
</tr>
<tr>
<td><strong>Possibility of hazardous</strong></td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

### Conditions to avoid
Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials
Strong acids.

Hazardous decomposition products
Silicon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion
Ingestion may cause irritation and malaise.

Inhalation
In high concentrations, vapors may be irritating to the respiratory system.

Skin contact
Causes skin irritation.

Eye contact
Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics
Irritation of eyes and mucous membranes. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity
May cause discomfort if swallowed.

Components

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium silicate (CAS 1344-09-8)</td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Mouse</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization
No data available.

Skin sensitization
Not a skin sensitizer.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Reproductive toxicity
No data available.

Specific target organ toxicity - single exposure
No data available.

Specific target organ toxicity - repeated exposure
No data available.

Aspiration hazard
No data available.

Chronic effects
Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Further information
No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Mobility in general
The product is soluble in water.
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, and climate disruption, global warming potential) are expected from this component.
US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.

US. Rhode Island RTK
Not regulated.

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

<table>
<thead>
<tr>
<th>International Inventories</th>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>European List of Notified Chemical Substances (EELINCS)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

“A “Yes” indicates this product complies with the inventory requirements administered by the governing country(s).
A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date: 15-July-2014
Revision date: -
Version #: 01

NFPA ratings

References
HSDB® - Hazardous Substances Data Bank
Registry of Toxic Effects of Chemical Substances (RTECS)

Disclaimer
The information in this (M)SDS was obtained from sources which we believe are reliable but cannot guarantee. Additionally, your use of this information is beyond our control and may be beyond our knowledge. Therefore, the information is provided without any representation or warranty express or implied.
Material Safety Data Sheet

MSDS ID NO.: 0121MAR019
Revision date: 12/07/2010

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name: Marathon K-1 Kerosene 400 ppm Sulfur Max
Synonym: 1-K Kerosine 400 ppm Sulfur Max; 1-K Kerosene 400 ppm Sulfur Max; Kerosine K-1 400 ppm Sulfur Max; Kerosene K-1 400 ppm Sulfur Max; Kerosene K-1; K-1 Kerosene; K-1 Kerosene, Non-Road Use, Undyed
Chemical Family: Petroleum Hydrocarbon
Formula: Mixture

Manufacturer:
Marathon Petroleum Company LP
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/INFORMATION ON INGREDIENTS

1-K Kerosine is a complex mixture of paraffins, cycloparaffins, olefins and aromatic hydrocarbons having hydrocarbon chain lengths predominantly in the range of C9 through C16. May contain a trace amount of benzene (<0.01%). Contains a trace amount of sulfur (15-400 ppm).

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon K-1 Kerosene</td>
<td>8008-20-6</td>
<td>100</td>
<td>Skin - potential significant contribution to overall exposure by the cutaneous route 200 mg/m³ TWA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated Hydrocarbons</td>
<td>Mixture</td>
<td>70-80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aromatic Hydrocarbons</td>
<td>Mixture</td>
<td>17-25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsaturated Hydrocarbons</td>
<td>Mixture</td>
<td>3-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>0.01-0.5</td>
<td>Skin - potential significant contribution to overall exposure by the cutaneous route 10 ppm TWA 15 ppm STEL</td>
<td>= 10 ppm TWA  = 50 mg/m³ TWA  = 15 ppm STEL  = 75 mg/m³ STEL</td>
<td></td>
</tr>
</tbody>
</table>

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA’s 1989 air contaminants standard in its MSDS’s, even though certain of those exposure limits were vacated in 1992.
3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION!

VAPORS, FUMES, OR MISTS MAY CAUSE RESPIRATORY TRACT IRRITATION
MAY BE HARMFUL OR FATAL IF SWALLOWED
MAY CAUSE LUNG DAMAGE
OVEREXPOSURE MAY CAUSE CNS DEPRESSION
SEE TOXICOLOGICAL INFORMATION SECTION FOR MORE INFORMATION

COMBUSTIBLE LIQUID AND VAPOR
VAPOR MAY CAUSE FLASH FIRE
MATERIAL MAY ACCUMULATE STATIC CHARGE

STABLE
Inhalation:
Breathing high concentrations may be harmful. May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

Ingestion:
Swallowing this material may be harmful. May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea. Exposure may also cause central nervous system symptoms similar to those listed under "Inhalation" (see Inhalation section). Aspiration into lungs may cause chemical pneumonia and lung damage.

Skin contact:
Contact may cause reddening, itching and inflammation. Effects may become more serious with repeated or prolonged contact. Skin contact may cause harmful effects in other parts of the body.

Eye contact:
Contact may cause pain and severe reddening and inflammation of the conjunctiva. Effects may become more serious with repeated or prolonged contact.

Carcinogenic Evaluation:

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>IARC Carcinogens:</th>
<th>NTP Carcinogens:</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon K-1 Kerosene 8008-20-6</td>
<td>NE</td>
<td>male mice-no evidence; female mice-no evidence</td>
<td>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans</td>
<td></td>
</tr>
</tbody>
</table>

Notes: The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for the carcinogenicity of diesel fuel/fuel oil in humans. IARC determined that there was limited evidence for the carcinogenicity of marine diesel fuel in animals. Distillate (light) diesel fuels were not classifiable as to their carcinogenicity to humans (Group 3A).

IARC has determined that there is sufficient evidence for the carcinogenicity in experimental animals of diesel engine exhaust and extracts of diesel engine exhaust particles. IARC determined that there is only limited evidence for the carcinogenicity in humans of diesel engine exhaust. However, IARC's overall evaluation has resulted in the IARC designation of diesel engine exhaust as probably carcinogenic to humans (Group 2A) because of the presence of certain engine exhaust components.

Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>IARC Carcinogens:</th>
<th>NTP Carcinogens:</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene 91-20-3</td>
<td>Monograph 82 [2002]</td>
<td>Reasonably Anticipated To Be A Human Carcinogen</td>
<td>A4 - Not Classifiable as a Human Carcinogen</td>
<td>Present</td>
</tr>
</tbody>
</table>

Notes: The International Agency for Research on Cancer (IARC) and the Environmental Protection Agency (EPA) have determined that naphthalene is a possible human carcinogen.
4. FIRST AID MEASURES

Eye Contact:

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION.

Skin Contact:

Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation persists. Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant’s hazardous properties.

Ingestion:

Do not induce vomiting. If spontaneous vomiting is about to occur, place victim’s head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Inhalation:

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

NOTES TO PHYSICIAN:

INGESTION: If ingested this material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.
5. FIRE FIGHTING MEASURES

Suitable extinguishing media: For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards: This product has been determined to be a combustible liquid per the OSHA Hazard Communication Standard and should be handled accordingly. For additional fire related information, see NFPA 30 or the North American Emergency Response Guide 128.

Special protective equipment for firefighters: Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Keep run-off water out of sewers and water sources.

Flash point: 120-190 F
Autoignition temperature: 489 F
Flammable limits in air - lower (%): 0.7
9. PHYSICAL AND CHEMICAL PROPERTIES:

Physical state (Solid/Liquid/Gas): Liquid
Substance type (Pure/Mixture): Mixture
Color: Clear or Amber
Odor: Slight Hydrocarbon
Molecular weight: 180
pH: Neutral
Boiling point/range (5-95%): 360-550 F
Melting point/range: Not determined.
Decomposition temperature: Not applicable.
Specific gravity: C.A. 0.8
Density: 6.76 lbs/gal
Bulk density: No data available.
Vapor density: 4-5
Vapor pressure: 1-10 mm Hg @ 100 F
Evaporation rate: No data available.
Solubility: Negligible
Solubility in other solvents: No data available.
Partition coefficient (n-octanol/water): No data available.
VOC content(%): 10%
Viscosity: 1.3-2.1 @ 50 C

10. STABILITY AND REACTIVITY

Stability: The material is stable at 70 F, 760 mm pressure.
Polymerization: Will not occur.
Hazardous decomposition products: Combustion produces carbon monoxide, aldehydes, aromatic and other hydrocarbons.
Materials to avoid: Strong oxidizers such as nitrates, perchlorates, chlorine, fluorine.
Conditions to avoid: Excessive heat, sources of ignition and open flames.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Inhalation:</th>
<th>Dermat:</th>
<th>Oral:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon K-1 Kerosene</td>
<td>8008-20-0</td>
<td>&gt;2 mg/l for 4 hr [Rat]</td>
<td>&gt;5 ml/kg [Rabbit]</td>
<td>9-16 ml/kg [Rat]</td>
</tr>
</tbody>
</table>

Toxicology Information:
MIDDLE DISTILLATES, PETROLEUM: Long-term repeated (lifetime) skin exposure to similar materials has been reported to result in an increase in skin tumors in laboratory rodents. The relevance of these findings to humans is not clear at this time.

ISOPARAFFINS: Studies in laboratory animals have shown that long-term exposure to similar materials (isoparaffins) can cause kidney damage and kidney cancer in male laboratory rats. However, in-depth research indicates that these findings are unique to the male rat, and that these effects are not relevant to humans.

NAPHTHALENE: Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from overexposure to naphthalene. Persons with Glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have been reported in persons overexposed to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect. Hemolytic anemia has been observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) in vitro. Naphthalene has been classified as Possibly Carcinogenic to Humans (2B) by IARC, based on findings from studies in laboratory animals.

DIESEL EXHAUST: Chronic inhalation studies of whole diesel engine exhaust in mice and rats produced a significant increase in lung tumors. Combustion of kerosine and/or diesel fuels produces gases and particulates which include carbon monoxide, carbon dioxide, oxides of nitrogen and/or sulfur and hydrocarbons. Significant exposure to carbon monoxide vapors decreases the oxygen carrying capacity of the blood and may cause tissue hypoxia via formation of carboxyhemoglobin.

Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffers Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline.

TARGET ORGANS: central nervous system, skin, lungs, respiratory system, kidney, liver,

12. ECOTOXICOLOGICAL INFORMATION

Mobility:
May partition into air, soil and water.

Ecotoxicity:

Toxic to aquatic organisms.

Bioaccumulation:

Not expected to bioaccumulate in aquatic organisms.

Persistence/Biodegradation:

Readily biodegradable in the environment.
13. DISPOSAL CONSIDERATIONS

Cleanup Considerations: This product as produced is not specifically listed as an EPA RCRA hazardous waste according to federal regulations (40 CFR 261). However, when discarded or disposed of, it may meet the criteria of an "characteristic" hazardous waste. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

14. TRANSPORT INFORMATION

49 CFR 172.101:

DOT: Transport Information: This material when transported via US commerce would be regulated by DOT Regulations.

<table>
<thead>
<tr>
<th>Proper shipping name:</th>
<th>Kerosene</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN/Identification No:</td>
<td>UN 1223</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>3</td>
</tr>
<tr>
<td>Packing group:</td>
<td>III</td>
</tr>
<tr>
<td>DOT reportable quantity (lbs):</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proper shipping name:</th>
<th>Kerosene</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN/Identification No:</td>
<td>UN 1223</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>3</td>
</tr>
<tr>
<td>Packing group:</td>
<td>III</td>
</tr>
</tbody>
</table>
15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated Hydrocarbons</td>
<td>NA</td>
</tr>
<tr>
<td>Aromatic Hydrocarbons</td>
<td>NA</td>
</tr>
<tr>
<td>Unsaturated Hydrocarbons</td>
<td>NA</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>NA</td>
</tr>
</tbody>
</table>

9 d e to e o e s e e ge 8
SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated Hydrocarbons</td>
<td>NA</td>
</tr>
<tr>
<td>Aromatic Hydrocarbons</td>
<td>NA</td>
</tr>
<tr>
<td>Unsaturated Hydrocarbons</td>
<td>NA</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>= 100 lb final RQ</td>
</tr>
<tr>
<td></td>
<td>= 45.4 kg final RQ</td>
</tr>
</tbody>
</table>

SARA Section 311/312 The following EPA hazard categories apply to this product:
Acute Health Hazard
Fire Hazard
Chronic Health Hazard

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated Hydrocarbons</td>
<td>None</td>
</tr>
<tr>
<td>Aromatic Hydrocarbons</td>
<td>None</td>
</tr>
<tr>
<td>Unsaturated Hydrocarbons</td>
<td>None</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>= 0.1 % de minimis concentration</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Saturated Hydrocarbons
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed.
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To Know: Not Listed.
Florida substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed.
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed.
California - Regulated Carcinogens: Not Listed.
Pennsylvania RTK - Special Hazardous Substances: Not Listed.

New Jersey - Special Hazardous Substances: Not Listed.
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants Not Listed.
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Aromatic Hydrocarbons
Louisiana Right-To-Know: Not Listed.
California Proposition 65: Not Listed.
New Jersey Right-To-Know: Not Listed.
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To Know: Not Listed.
Saturated Hydrocarbons

Florida substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances:
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants: Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Unsaturated Hydrocarbons

Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed
Pennsylvania Right-To-Know: Not Listed
Massachusetts Right-To Know:
Florida substance List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances:
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants: Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Naphthalene

Louisiana Right-To-Know: Not Listed
California Proposition 65: carcinogen, initial date 4/19/02

New Jersey Right-To-Know: sn 1322
Pennsylvania Right-To-Know: Environmental hazard
Massachusetts Right-To Know:
Florida substance List: Not Listed.
Rhode Island Right-To-Know: Toxic; Flammable
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances:
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: carcinogen
Saturated Hydrocarbons
  New Jersey - Environmental Hazardous Substances List: SN 1322 TPQ 500 lb
  Illinois - Toxic Air Contaminants Present
  New York - Reporting of Releases Part 597 - List of Hazardous Substances:
  = 1 lb RQ land/water
  = 100 lb RQ air

Canadian Regulatory Information:

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

<table>
<thead>
<tr>
<th>Name</th>
<th>Canada - WHMIS: Classifications of Substances:</th>
<th>Canada - WHMIS: Ingredient Disclosure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>B4, D2A</td>
<td>1 %</td>
</tr>
</tbody>
</table>

NOTE: Not Applicable.

16. OTHER INFORMATION

Additional Information: No data available.

Prepared by: Mark S. Swanson, Manager, Toxicology and Product Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Marathon Petroleum Company LP (MPC) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. MPC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet
# SAFETY DATA SHEET

**SDS ID NO.:** 0290MAR019  **Revision Date:** 05/14/2015

## 1. IDENTIFICATION

**Product Name:** Marathon Petroleum No. 2 Ultra Low Sulfur Diesel 15 ppm Sulfur Max  
**Synonym:** Ultra Low Sulfur Diesel No. 2 15 ppm Sulfur Max; Ultra Low Sulfur Diesel No. 2 15 ppm Sulfur Max with Polar Plus; No. 2 Diesel, Motor Vehicle Use, Undyed; No. 2 Diesel, Motor Vehicle Use, Undyed, with Polar Plus; ULSD No. 2 Diesel 15 ppm Sulfur Max; ULSD No. 2 Diesel 15 ppm Sulfur Max with Polar Plus; No. 2 MV 15 Diesel; No. 2 MV 15 Diesel with Polar Plus  
**Chemical Family:** Complex Hydrocarbon Substance  
**Recommended Use:** Fuel.  
**Use Restrictions:** All others.  

**Supplier Name and Address:** MARATHON PETROLEUM COMPANY LP 539 South Main Street Findlay, OH 45840  
**SDS information:** 1-419-421-3070  
1-877-627-5463  
**Emergency Telephone:**

## 2. HAZARD IDENTIFICATION

**Classification**

**OSHA Regulatory Status**  
This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids</td>
<td>3</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Dusts/Mists)</td>
<td>4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>2</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>2</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>3</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>2</td>
</tr>
<tr>
<td>Aspiration toxicity</td>
<td>1</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>2</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>2</td>
</tr>
</tbody>
</table>

**Hazards Not Otherwise Classified (HNOC)**  
Static accumulating flammable liquid

## EMERGENCY OVERVIEW
Danger

FLAMMABLE LIQUID AND VAPOR
May accumulate electrostatic charge and ignite or explode
May be fatal if swallowed and enters airways
Harmful if inhaled
Causes skin irritation
Suspected of causing cancer
May cause drowsiness or dizziness
May cause damage to organs (thymus, liver, bone marrow) through prolonged or repeated exposure
Toxic to aquatic life with long lasting effects

Appearance  Colorless Liquid  Physical State  Liquid  Odor  Hydrocarbon

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Use explosion-proof electrical/ventilating/lighting/equipment
Take precautionary measures against static discharge
Do not breathe mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Wash hands and any possibly exposed skin thoroughly after handling
Avoid release to the environment

Precautionary Statements - Response
IF exposed or concerned: Get medical attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical attention
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor
Do NOT induce vomiting
In case of fire: Use water spray, fog or regular foam for extinction
Collect spillage

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container at an approved waste disposal plant
3. COMPOSITION/INFORMATION ON INGREDIENTS

No. 2 Ultra Low Sulfur Diesel is a complex mixture of paraffins, cycloparaffins, olefins and aromatic hydrocarbon chain lengths predominantly in the range ten to nineteen carbons. May contain small amounts of dye and other additives (<0.15%) which are not considered hazardous at the concentrations used.

Composition Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel</td>
<td>68476-34-6</td>
<td>50-100</td>
</tr>
<tr>
<td>Kerosine, Petroleum</td>
<td>8008-20-6</td>
<td>0-50</td>
</tr>
<tr>
<td>Fuels, Diesel, C9-18-Alkane Branched and Linear</td>
<td>1159170-26-9</td>
<td>0-5</td>
</tr>
<tr>
<td>Alkanes, C10-C20 branched and linear</td>
<td>928771-01-1</td>
<td>0-5</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>0.01-0.5</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

General advice

In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation:

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Skin Contact:

Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. May be absorbed through the skin in harmful amounts. Get medical attention if irritation persists. Any injection injury from high pressure equipment should be evaluated immediately by a physician as potentially serious (See NOTES TO PHYSICIAN).

Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous properties. Destroy contaminated, non-chemical resistant footwear.

Eye Contact:

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

Ingestion:

Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Most important signs and symptoms, both short-term and delayed with overexposure

Adverse Effects:

Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Delayed: Dry skin and possible irritation with repeated or prolonged exposure.

Indication of any immediate medical attention and special treatment needed

NOTES TO PHYSICIAN:

SKIN: Leaks or accidents involving high-pressure equipment may inject a stream of material through the skin and initially produce an injury that may not appear serious. Only a small puncture wound may appear on the skin surface but, without proper treatment and depending on the nature, original pressure, volume, and location of the injected material, can compromise blood supply to an affected body part. Prompt surgical debridement of the wound may be necessary to prevent irreversible loss of function and/or the affected body part. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES.
INGESTION: This material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media
Do not use straight water streams to avoid spreading fire.

Specific hazards arising from the chemical
This product has been determined to be a flammable liquid per the OSHA Hazard Communication Standard and should be handled accordingly. May accumulate electrostatic charge and ignite or explode. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the North American Emergency Response Guide 128.

Hazardous combustion products
Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data
- Sensitivity to Mechanical Impact: No.
- Sensitivity to Static Discharge: Yes.

Special protective equipment and precautions for firefighters
Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Keep run-off water out of sewers and water sources.

NFPA:
- Health: 1
- Flammability: 2
- Instability: 0
- Special Hazards: -

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources. All contaminated surfaces will be slippery.

Protective Equipment:
Use personal protection measures as recommended in Section 8.

Emergency Procedures:
Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.

Environmental precautions:
Avoid release to the environment. Avoid subsoil penetration.

Methods and materials for containment:
Contain liquid with sand or soil.

Methods and materials for cleaning up:
Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers. When recovering free liquids ensure all equipment is grounded and bonded. Use only non-sparking tools.

7. HANDLING AND STORAGE
Safe Handling Precautions:

NEVER SIPHON THIS PRODUCT BY MOUTH. Use appropriate grounding and bonding practices. Static accumulating flammable liquid. Bonding and grounding may be insufficient to eliminate the hazard from static electricity. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking. Avoid repeated and prolonged skin contact. Use personal protection measures as recommended in Section 8. Use only non-sparking tools. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.

Hydrocarbons are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering, pumping at high flow rates or loading and transfer operations. If this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Sudden release of hot organic chemical vapors or mists from process equipment operating under elevated temperature and pressure, or sudden ingress of air into vacuum equipment may result in ignition of vapors or mists without the presence of obvious ignition sources. Nozzle spouts must be kept in contact with the containers or tank during the entire filling operation.

Portable containers should never be filled while in or on a motor vehicle or marine craft. Containers should be placed on the ground. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers.

A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling.

Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.

High-pressure injection of any material through the skin is a serious medical emergency even though the small entrance wound at the injection site may not initially appear serious. These injection injuries can occur from high-pressure equipment such as paint spray or grease or guns, fuel injectors, or pinhole leaks in hoses or hydraulic lines and should all be considered serious. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES (See First Aid Section 4).

Storage Conditions:

Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area.

Incompatible materials

Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Name</th>
<th>ACGIH TLV</th>
<th>OSHA PELs:</th>
<th>OSHA - Vacated PELs</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel</td>
<td>100 mg/m³ TWA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>68476-34-6</td>
<td>Skin - potential significant contribution to overall exposure by the cutaneous route</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Kerosine, Petroleum 8008-20-6  |  200 mg/m³ TWA Skin - potential significant contribution to overall exposure by the cutaneous route  |  -  |  -  |  -  
Fuels, Diesel, C9-18-Alkane Branched and Linear 1159170-26-9 | - | - | - | - 
Alkanes, C10-C20 branched and linear 928771-01-1 | - | - | - | - 
Naphthalene 91-20-3  |  10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route  |  TWA: 10 ppm TWA: 50 mg/m³  |  10 ppm TWA 50 mg/m³ TWA 15 ppm STEL 75 mg/m³ STEL  |  250 ppm  
Notes: The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.
Engineering measures: Local or general exhaust required in an enclosed area or with inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof.
Personal protective equipment
Eye protection: Use goggles or face-shield if the potential for splashing exists.
Skin and body protection: Wear neoprene, nitrile or PVA gloves to prevent skin contact. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times.
Respiratory protection: Use an approved organic vapor chemical cartridge or supplied air respirators when material produces vapors that exceed permissible exposure limits or excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Colorless Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Hydrocarbon</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No available data.</td>
</tr>
<tr>
<td>Melting Point / Freezing Point</td>
<td>No available data.</td>
</tr>
<tr>
<td>Initial Boiling Point / Boiling Range</td>
<td>182-288 °C / 360-550 °F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>49-88 °C / 120-190 °F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No available data.</td>
</tr>
<tr>
<td>Property</td>
<td>Value/Details</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability Limit in Air (%)</td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limit:</td>
<td>5.0</td>
</tr>
<tr>
<td>Lower Flammability Limit:</td>
<td>0.7</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>1-10 mm Hg @ 20°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>4-5</td>
</tr>
<tr>
<td>Specific Gravity / Relative Density</td>
<td>C.A. 0.8</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>No available data.</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Negligible</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>No available data.</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Not applicable data.</td>
</tr>
<tr>
<td>pH:</td>
<td></td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>254 °C / 489 °F</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>1.3-2.1 @ 50°C</td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>No available data.</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No available data.</td>
</tr>
<tr>
<td>Softening Point</td>
<td>No available data.</td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>10%</td>
</tr>
<tr>
<td>Density</td>
<td>6.76 lbs/gal</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Reactivity**

The product is non-reactive under normal conditions.

**Chemical stability**

The material is stable at 70°F, 760 mmHg pressure.

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous polymerization**

Will not occur.

**Conditions to avoid**

Excessive heat, sources of ignition, open flame.

**Incompatible materials**

Strong oxidizing agents.
11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation
Harmful if inhaled. Inhalation of high vapor concentrations may cause irritation of the respiratory system. May cause drowsiness or dizziness.

Eye contact
Causes mild eye irritation.

Skin contact
Irritating to skin. Effects may become more serious with repeated or prolonged contact. May be absorbed through the skin in harmful amounts.

Ingestion
May be fatal if swallowed or vomited and enters airways. May cause irritation of the mouth, throat and gastrointestinal tract.

Acute Toxicological data

<table>
<thead>
<tr>
<th>Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel 68476-34-6</td>
<td>&gt; 5000 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>&gt; 1 - &lt;5 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>Kerosine, Petroleum 8008-20-6</td>
<td>&gt; 5000 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>&gt; 5.28 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>Fuels, Diesel, C9-18-Alkane Branched and Linear 1159170-26-9</td>
<td>-</td>
<td>-</td>
<td>&gt; 1 - &lt;5 mg/l (Rat) 4 h</td>
</tr>
<tr>
<td>Alkanes, C10-C20 branched and linear 928771-01-1</td>
<td>-</td>
<td>-</td>
<td>&gt; 1 - &lt;5 mg/l (Rat) 4 h</td>
</tr>
<tr>
<td>Naphthalene 91-20-3</td>
<td>490 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>&gt; 340 mg/m³ (Rat) 1 h</td>
</tr>
</tbody>
</table>

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffer's Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline.

MIDDLE DISTILLATES, PETROLEUM: Long-term repeated (lifetime) skin exposure to similar materials has been reported to result in an increase in skin tumors in laboratory rodents. The relevance of these findings to humans is not clear at this time.

MIDDLE DISTILLATES WITH CRACKED STOCKS: Light cracked distillates have been shown to be carcinogenic in animal tests and have tested positive with in vitro genotoxicity tests. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irritation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function.

ISOPARAFFINS: Studies in laboratory animals have shown that long-term exposure to similar materials (isoparaffins) can cause kidney damage and kidney cancer in male laboratory rats. However, in-depth research indicates that these findings are unique to the male rat, and that these effects are not relevant to humans.

NAPHTHALENE: Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from overexposure to naphthalene. Persons with glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have been reported in persons overexposed to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect. Hemolytic anemia has been
observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) in vitro. Naphthalene has been classified as Possibly Carcinogenic to Humans (2B) by IARC, based on findings from studies in laboratory animals.

DIESEL EXHAUST: Chronic inhalation studies of whole diesel engine exhaust in mice and rats produced a significant increase in lung tumors. Combustion of kerosine and/or diesel fuels produces gases and particulates which include carbon monoxide, carbon dioxide, oxides of nitrogen and/or sulfur and hydrocarbons. Significant exposure to carbon monoxide vapors decreases the oxygen carrying capacity of the blood and may cause tissue hypoxia via formation of carboxyhemoglobin.

Adverse effects related to the physical, chemical and toxicological characteristics

Signs & Symptoms
Nausea, vomiting, signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue.

Sensitization
Not expected to be a skin or respiratory sensitizer.

Mutagenic effects
None known.

Carcinogenicity
Cancer designations are listed in the table below.

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel 68476-34-6</td>
</tr>
<tr>
<td>Kerosine, Petroleum 8008-20-6</td>
</tr>
<tr>
<td>Fuels, Diesel, C9-18-alkane branched and linear 1159170-26-9</td>
</tr>
<tr>
<td>Alkanes, C10-C20 branched and linear 928771-01-1</td>
</tr>
<tr>
<td>Naphthalene 91-20-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACGIH (Class)</th>
<th>IARC (Class)</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirmed animal carcinogen (A3)</td>
<td>Not Classifiable (3)</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Confirmed animal carcinogen (A3)</td>
<td>Not Classifiable (3)</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Confirmed animal carcinogen (A3)</td>
<td>Possible human carcinogen (2B)</td>
<td>Reasonably anticipated to be a human carcinogen</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

Reproductive toxicity
None known.

Specific Target Organ Toxicity (STOT) - single exposure
Central nervous system.

Specific Target Organ Toxicity (STOT) - repeated exposure

Aspiration hazard
May be fatal if swallowed or vomited and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity
This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel 68476-34-6</td>
</tr>
<tr>
<td>Kerosine, Petroleum 8008-20-6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Algae/aquatic plants</th>
<th>Fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel 68476-34-6</td>
<td>96-hr LC50 = 35 mg/l Fathead minnow (flow-through)</td>
</tr>
<tr>
<td>Kerosine, Petroleum 8008-20-6</td>
<td>72-hr EL50 = 5.0-11 mg/l Algae</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toxicity to Microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>48-hr EL50 = 6.4 mg/l Daphnia magna</td>
</tr>
<tr>
<td>-</td>
<td>48-hr EL50 = 1.4-21 mg/l Invertebrates</td>
</tr>
</tbody>
</table>
Fuels, Diesel, C9-18-Alkane Branched and Linear
1159170-26-9

| Alkanes, C10-C20 branched and linear 928771-01-1 | - | - | - | - |

| Naphthalene 91-20-3 | - | 96-hr LC50 = 0.91-2.82 mg/l
Rainbow trout (static)
96-hr LC50 = 1.99 mg/l
Fathead minnow (static) | - | 48-hr LC50 = 1.6 mg/l
Daphnia magna |

Persistence and degradability
Expected to be inherently biodegradable.

Bioaccumulation
Has the potential to bioaccumulate.

Mobility in soil
May partition into air, soil and water.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues
This material may be a flammable liquid waste.

Safe Handling of Wastes
Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

Disposal of Wastes / Methods of Disposal
The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal
Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101): UN
Proper shipping name: Fuel Oil, No. 2
UN/Identification No: NA 1993
Transport Hazard Class(es): 3
Packing group: III

TDG (Canada):
UN Proper shipping name: Fuel Oil, No. 2
UN/Identification No: NA 1993
Transport Hazard Class(es): 3
Packing group: III

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):
SARA Section 302: This product does not contain any component(s) included on EPA’s Extremely Hazardous Substance (EHS) List.

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel</td>
<td>NA</td>
</tr>
<tr>
<td>Kerosine, Petroleum</td>
<td>NA</td>
</tr>
<tr>
<td>Fuels, Diesel, C9-18-Alkane Branched and Linear</td>
<td>NA</td>
</tr>
<tr>
<td>Alkanes, C10-C20 branched and linear</td>
<td>NA</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel</td>
<td>NA</td>
</tr>
<tr>
<td>Kerosine, Petroleum</td>
<td>NA</td>
</tr>
<tr>
<td>Fuels, Diesel, C9-18-Alkane Branched and Linear</td>
<td>NA</td>
</tr>
<tr>
<td>Alkanes, C10-C20 branched and linear</td>
<td>NA</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>100 lb final RQ</td>
</tr>
<tr>
<td></td>
<td>45.4 kg final RQ</td>
</tr>
</tbody>
</table>

SARA: The following EPA hazard categories apply to this product:
Acute Health Hazard
Fire Hazard
Chronic Health Hazard

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel</td>
<td>None</td>
</tr>
<tr>
<td>Kerosine, Petroleum</td>
<td>None</td>
</tr>
<tr>
<td>Fuels, Diesel, C9-18-Alkane Branched and Linear</td>
<td>None</td>
</tr>
<tr>
<td>Alkanes, C10-C20 branched and linear</td>
<td>None</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>0.1 % de minimis concentration</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

No. 2 Diesel Fuel

Louisiana Right-To-Know: Not Listed.
California Proposition 65: Not Listed.
New Jersey Right-To-Know: SN 2444
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To-Know: Not Listed.
Florida Substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed.
California - Regulated Carcinogens: Not Listed.
Pennsylvania RTK - Special Hazardous Substances: Not Listed.
Substances:
New Jersey - Special Hazardous Substances: Not Listed.
New Jersey - Environmental Hazardous Substances List: SN 2444 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)

Illinois - Toxic Air Contaminants Not Listed.

Kerosine, Petroleum
Louisiana Right-To-Know: Not Listed.
California Proposition 65: Not Listed.
New Jersey Right-To-Know: SN 1091
Pennsylvania Right-To-Know: Present
Massachusetts Right-To-Know: Present
Florida Substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed.
California - Regulated Carcinogens: Not Listed.
Pennsylvania RTK - Special Hazardous Substances: Not Listed.
New Jersey - Special Hazardous Substances: Not Listed.

New Jersey - Environmental Hazardous Substances List: SN 1091 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)

Illinois - Toxic Air Contaminants Not Listed.

Fuels, Diesel, C9-18-Alkane Branched and Linear
Louisiana Right-To-Know: Not Listed.
California Proposition 65: Not Listed.
New Jersey Right-To-Know: Not Listed.
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To-Know: Not Listed.
Florida Substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed.
California - Regulated Carcinogens: Not Listed.
Pennsylvania RTK - Special Hazardous Substances: Not Listed.
New Jersey - Special Hazardous Substances: Not Listed.
New Jersey - Environmental Hazardous Substances List: Not Listed.

Alkanes, C10-C20 branched and linear
Louisiana Right-To-Know: Not Listed.
California Proposition 65: Not Listed.
New Jersey Right-To-Know: Not Listed.
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To-Know: Not Listed.
Florida Substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed.
California - Regulated Carcinogens: Not Listed.
Pennsylvania RTK - Special Hazardous Substances: Not Listed.
New Jersey - Special Hazardous Substances: Not Listed.
New Jersey - Environmental Hazardous Substances List: Not Listed.
Illinois - Toxic Air Contaminants: Not Listed.
New York - Reporting of Releases Part 597 List of Hazardous Substances:
Naphthalene: Not Listed.

California Proposition 65: Carcinogen, initial date 4/19/02
New Jersey Right-To-Know: SN 1322 SN 3758
Pennsylvania Right-To-Know: Environmental hazard Present (particulate)
Massachusetts Right-To-Know: Present
Florida Substance List: Not Listed.
Rhode Island Right-To-Know: Toxic; Flammable
Massachusetts Extraordinarily Hazardous Substances: Not Listed.
California - Regulated Carcinogens: Not Listed.
Pennsylvania RTK - Special Hazardous Substances: Not Listed.
New Jersey - Special Hazardous Substances: Carcinogen
New Jersey - Environmental Hazardous Substances List: SN 1322 TPQ: 500 lb (Reportable at the de minimis quantity of >0.1%)
Illinois - Toxic Air Contaminants: Present
New York - Reporting of Releases Part 597 List of Hazardous Substances:

Canada DSL/NDSL Inventory: This product contains the following component(s) that are listed on the Non-Domestic Substance List (NDSL): CAS# 1159170-26-9

Canadian Regulatory Information: "This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the (M)SDS contains all the information required by the Controlled Products Regulations."

<table>
<thead>
<tr>
<th>Name</th>
<th>Canada - WHMIS: Classifications of Substances</th>
<th>Canada - WHMIS: Ingredient Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Diesel Fuel</td>
<td>B3,D2A,D2B</td>
<td>0.1%</td>
</tr>
<tr>
<td>Kerosine, Petroleum</td>
<td>B3,D2B</td>
<td>1%</td>
</tr>
<tr>
<td>Fuels, Diesel, C9-18-Alkane Branched and Linear</td>
<td>B3,D2A,D2B</td>
<td>0.1%</td>
</tr>
<tr>
<td>Alkanes, C10-C20 branched and linear</td>
<td>B3,D2A,D2B</td>
<td>0.1%</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>B4,D2A</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

NOTE: Not Applicable.

16. OTHER INFORMATION

Prepared By: Toxicology and Product Safety
Revision Date: 05/14/2015
Revision Note: Non Applicable.
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
SAFE USE INSTRUCTION SHEET

0. GENERAL INFORMATION

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate safe handling and use instructions for manufactured articles neither regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200 nor by the Canada Hazardous Products Regulation SOR/2015-17 (WHMIS 2015).

1. IDENTIFICATION

Product Name
FOAMULAR® Extruded Polystyrene Insulation - Zero Ozone Depletion Formula

Synonyms

Product Code
OCFI00001

Recommended Use
No information available

Manufacturer Address
Owens Corning Foam Insulation, LLC
One Owens Corning Parkway
Toledo, Ohio 43659

Company Phone Number
1-800-GET-PINK or 1-800-438-7465

24 Hour Emergency Phone Number
Chemtrec 1-800-424-9300

Emergency Telephone
1-419-248-5330 (after 5 pm ET and weekends)

E-mail address
safetydatasheet@owenscorning.com

Company Website
http://owenscorning.com/

2. HAZARDS IDENTIFICATION

OSHA Regulatory Status
This product is considered an article. 29 CFR 1910.1200(c) definition of an article is as follows: “Article” means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.
3. COMPOSITION/INFORMATION ON INGREDIENTS

There are no hazardous components/ingredients in this product.

4. FIRST AID MEASURES

Description of First Aid Measures

Eye contact
• Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
• If eye irritation persists: Get medical advice/attention

Skin contact
• Wash skin with soap and water

Inhalation
• Remove to fresh air

Ingestion
• Accidental ingestion of this material is unlikely
• If this does occur watch person for several days to make sure intestinal blockage does not occur.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

• Dry chemical
• Foam
• Carbon dioxide (CO2)
• Water spray (fog)

Protective equipment and precautions for firefighters
• As in any fire, wear self-contained breathing apparatus (positive-pressure), MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
• Avoid contact with eyes and skin

Methods for cleaning up
• Use personal protective equipment as required
• Take up mechanically, placing in appropriate containers for disposal
• Clean contaminated surface thoroughly
• Avoid creating dust
7. HANDLING AND STORAGE

Storage Conditions
• Store in a manner which will minimize dust generation and accumulation.
• Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).
• To prevent build-up of flammable vapors, do not store large quantities of this product in unventilated spaces.

Incompatible materials
• Amines
• Esters
• Hydrocarbons

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Controls
Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment
Eye/face protection
• Wear safety glasses with side shields (or goggles)

Skin and body protection
• Wear protective gloves.
• Wear long-sleeved shirt and long pants.

Respiratory protection
• When workers are facing concentrations above the exposure limit they must use appropriate certified respirators in accordance with their company’s respiratory protection program, local regulations or 29 CFR 1910.134.

General Hygiene Considerations
• Wash face, hands and any exposed skin thoroughly after handling

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state
Solid
Board

Appearance
Board Pellets

Odor
No detectable odor

Color
Pink, White, Gray

Water solubility
Insoluble in water

Specific Gravity
0.021-0.064 (Ref: water=1)

Softening point
104 °C

10. STABILITY AND REACTIVITY

Stability
• Stable

Possibility of Hazardous Reactions
• None under normal processing

Hazardous Decomposition Products
• Carbon dioxide (CO2)
• Carbon monoxide
• Styrene
• Small quantities of hydrogen fluoride, hydrogen chloride, fluorine and chlorine could be released.
• Other undetermined compounds could be released in small quantities.

11. TOXICOLOGICAL INFORMATION

Product Information
Product does not present an acute toxicity hazard based on known or supplied information
12. ECOLOGICAL INFORMATION
This product is not expected to be hazardous for the environment.

13. DISPOSAL CONSIDERATIONS
Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION
This material is not subject to regulation as a hazardous material for shipping.

15. REGULATORY INFORMATION

International Inventories
This product is classified as an article. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDSL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS).

California Proposition 65
This product does not contain any Proposition 65 chemicals.

16. OTHER INFORMATION

Creation Date 05-Mar-1997
Revision Date 30-Nov-2015
Revision Note This product is classified as an Article according to OSHA 29 CFR 1910.1200 and to the Canadian Hazardous Products Regulation SOR/2015-17 (WHMIS 2015). therefore is not regulated. This Safe Use Instruction Sheet replaces the former Material Safety Data Sheet (MSDS) and is not regulated.

Disclaimer
Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

End of Safe Use Instruction Sheet
I PRODUCT IDENTIFICATION

MANUFACTURER’S NAME: PROSOCO, Inc.
AND ADDRESS: 3741 Greenway Circle
Lawrence, KS 66046

EMERGENCY TELEPHONE NUMBERS:
8:00 AM – 5:00 PM CST Monday-Friday: 785/865-4200
NON-BUSINESS HOURS (INFOTRAC): 800/535-5053

PRODUCT TRADE NAME: Consolideck® LS

II HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>(COMMON NAME)</th>
<th>CAS NO.</th>
<th>NFPA CODE</th>
<th>ACGIH TLV/TWA</th>
<th>OSHA PEL/TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Ingredient A(a,*)</td>
<td>--</td>
<td>N/A</td>
<td>--</td>
<td>1 mg/m³**</td>
<td>*</td>
</tr>
<tr>
<td>Proprietary Ingredient B(a,*)</td>
<td>--</td>
<td>N/A</td>
<td>--</td>
<td>1 mg/m³**</td>
<td>*</td>
</tr>
<tr>
<td>Proprietary Ingredient C(a,*)</td>
<td>--</td>
<td>N/A</td>
<td>Not建立</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) The specific product is not identified due to “Trade Secret” status. In emergency situations further information may be obtained by the on-duty physician calling the emergency information number listed above. Reference 29 CFR 1910-1200 and/or 40 CFR 350.
* The ACGIH Threshold Limit Value (TLV) has not been established nor has OSHA established the Permissible Exposure Limit (PEL) for this product, therefore the limits described have been established as guidelines by the manufacturer.

III PHYSICAL DATA

<table>
<thead>
<tr>
<th>Consolideck® LS</th>
<th>BOILING POINT (°F)</th>
<th>FREEZING POINT (°F)</th>
<th>VAPOR PRESSURE (mm Hg)</th>
<th>VAPOR DENSITY (Air = 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>212°F (100°C)</td>
<td>32°F (0°C)</td>
<td>17 (@20°C)</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consolideck® LS*</th>
<th>SPECIFIC GRAVITY</th>
<th>pH</th>
<th>SOLUBILITY IN WATER</th>
<th>APPEARANCE AND ODOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Typical</td>
<td>1.10</td>
<td>11.0</td>
<td>Appreciable (&gt;99%)</td>
<td>Light green, water-like liquid, practically odorless</td>
</tr>
</tbody>
</table>

IV FIRE AND EXPLOSION HAZARD DATA

EMERGENCY OVERVIEW
Consolideck® LS is a light green, water-like alkaline liquid that is practically odorless. Prolonged contact may cause skin and eye irritation. Inhalation may cause irritation. Ingestion may cause gastric distress.

FLASH POINT (METHOD): Non-flammable
FLAMMABLE LIMITS: LEL: not applicable UEL: not applicable
EXTINGUISHING MEDIA: Carbon dioxide, water, water fog, dry chemical, chemical foam
FIRE FIGHTING PROCEDURES: Keep containers cool with water spray to prevent container rupture due to steam buildup; floor will become slippery if material is released. Material is alkaline and will irritate the eyes if product is allowed to directly contact the eyes.
SPECIAL FIRE FIGHTING PROCEDURES: None.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None.
V  HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE: Skin, eyes, inhalation, ingestion.
CARCINOGEN INFORMATION: Not listed (OSHA, IARC, NTP).
MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:
EFFECTS OF OVEREXPOSURE:
EYE CONTACT: Contact with eyes may cause pain and irritation.
SKIN CONTACT: Contact with skin may cause irritation, dermatitis.
INHALATION: Inhalation of mists or vapors may cause irritation to upper respiratory tract and mucous membranes.
INGESTION: Irritating to digestive tract; may cause gastric distress, stomach pains.
EMERGENCY AND FIRST AID PROCEDURES:
EYE CONTACT: Remove contact lenses. Immediately flush eyes for 15 minutes in clear running water while holding eyelids open; seek medical attention immediately.
SKIN CONTACT: Wash contacted area with soap and water; DO NOT attempt to neutralize with chemical agents; if irritation persists, seek medical attention.
INHALATION: Remove affected person to fresh air; wash mouth and nasal passages with water repeatedly; if breathing difficulties persist seek medical attention.
INGESTION: Drink large quantities of water or milk; DO NOT induce vomiting; seek medical attention immediately.

VI  REACTIVITY DATA

STABILITY: Stable.
CONDITIONS TO AVOID: Extreme temperatures, keep from freezing.
INCOMPATIBILITY (MATERIALS TO AVOID): strong oxidizers, strong acids
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Smoke, fumes, oxides of carbon. Decomposition will not occur if handled and stored properly. In case of fire, oxides of carbon and lithium, hydrocarbons, fumes, and smoke may be produced.

VII  SPILL OR LEAK PROCEDURES

SPILL, LEAK, WASTE DISPOSAL PROCEDURES: STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OF SPILLED: Material is alkaline and will irritate the eyes if product is allowed to directly contact the eyes. Wash small spills to sanitary sewer. Large spills – confine spill, soak up with approved absorbent, shovel product into approved container for disposal.

VIII  SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: None required while threshold limits are kept below maximum allowable concentrations, if TWA exceeds limits, NIOSH approved respirator must be worn. Refer to 29 CFR 1910.134 or European Standard EN 149 for complete regulations. If mists are present, wear a NIOSH approved dust/mist respirator.
VENTILATION: The use of local exhaust ventilation is recommended. Use corrosion-resistant ventilation equipment.
PROTECTIVE CLOTHING: Coveralls, apron, or other equipment as needed to minimize skin contact.
PROTECTIVE GLOVES: Neoprene or rubber gloves with cuffs as needed to prevent prolonged exposure.
EYE PROTECTION: Safety glasses with side shields. Depending on application condition, chemical splash goggles or a face shield may be necessary to prevent eye contact.
OTHER PROTECTIVE EQUIPMENT: Provide eyewash and clean water for rinsing skin.
IX SPECIAL PRECAUTIONS

WORK PRACTICES: Proper work practices and planning should be utilized to avoid contact with workers, passersby, and non-masonry surfaces. Always follow published application rates. See the Product Data sheet and label for specific precautions to be taken during use. Smoking, eating and drinking should be prohibited during the use of this product. Wash hands before breaks and at the end of a shift.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep container closed when not in use; protect containers from abuse; protect from extreme temperatures. Keep from freezing. Keep this and other chemicals out of reach of children.

OTHER PRECAUTIONS: Avoid generating mists during application.

X REGULATORY INFORMATION

SHIPPING: Non-regulated for shipment in all modes; domestic or international.

NATIONAL MOTOR FREIGHT CLASSIFICATION:

SARA 313 REPORTABLE:

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS</th>
<th>UPPERBOUND CONCENTRATION % BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

CALIFORNIA PROPOSITION 65: Contains no chemicals known to the State of California to cause cancer or reproductive risk.

XI OTHER

MSDS Status: Date of Revision: July 19, 2007  
For Product Manufactured After: August 1, 2007  
Changes: Updated Product Item #, Section XI  
Item #: 46068  
Approved By: Regulatory Department

DISCLAIMER:

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

DATE OF PREPARATION: August 1, 2007
RAPID SET® Acrylic Primer

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Supplier
CTS Cement Manufacturing Corp.
11065 Knott Avenue
Cypress, CA 90630. United States
FAX Number: 714-379-8270
Email: info@ctscement.com
Website: www.ctscement.com

Supplier Emergency Contact
1-714-379-8260

Product Name: Rapid Set Acrylic Primer
CAS Number: N/A

MSDS Number: Product Code:

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>E</td>
</tr>
</tbody>
</table>

SECTION 2 — COMPONENT INFORMATION

Ingredient (Specific Chemical Identity, Common Name) | CAS Number | % of Total Weight
--- | --- | ---
No reportable quantities of hazardous ingredients are present

No toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present.

SECTION 3 — HAZARDOUS INFORMATION

Primary Route(s) of Entry: Inhalation of vapor or spray mist. Eye or Skin contact with the product, vapor or spray mist.

Inhalation Hazards: May cause irritation of the upper respiratory system.

Skin Hazards: Prolonged or repeated exposure may cause irritation

Eye Hazards: May cause eye irritation.

Target Organs: Eyes, Skin.

Signs and Symptoms of Exposure (Acute Effects): Redness and itching or burning sensation may indicate eye or excessive skin exposure.

Medical Conditions Aggravated By Exposure: None generally recognized.

SECTION 4 — FIRST AID INFORMATION
**Inhalation:**
If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**Skin:**
Wash affected area thoroughly with soap and water.

**Eye:**
Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**Ingestion:**
Do not induce vomiting. Get medical attention immediately.

---

**SECTION 5 — PHYSICAL & CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>212.0 – 374 °F</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.07</td>
</tr>
<tr>
<td>Melting Point</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg)</td>
<td>None</td>
</tr>
<tr>
<td>Vapor Density (AIR = 1)</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Slower than ether.</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble.</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Liquid, mild odor.</td>
</tr>
<tr>
<td>Coating VOC</td>
<td>31.47 g/l</td>
</tr>
<tr>
<td>Material VOC</td>
<td>10.69 g/l</td>
</tr>
</tbody>
</table>

---

**SECTION 6 — FIRE & EXPLOSION PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>Non-Combustible</td>
</tr>
<tr>
<td>Flammable Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>LEL</td>
<td>N/A</td>
</tr>
<tr>
<td>UEL</td>
<td>N/A</td>
</tr>
</tbody>
</table>
**Extinguishing Media:** Carbon Dioxide, Dry Chemical, Alcohol Foam

**Unusual Fire And Explosion Hazards:** Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**Special Fire Fighting Procedures:** Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## SECTION 7 — REACTIVITY INFORMATION

<table>
<thead>
<tr>
<th>Stability: Stable</th>
<th>Conditions to Avoid: None known.</th>
</tr>
</thead>
</table>

**Hazardous Polymerization:** Will not occur

**Hazardous Decomposition or Byproducts:** By fire: Carbon Dioxide, Carbon Monoxide

**Incompatible Materials:** None known.

## SECTION 8 — ACCIDENTAL RELEASE MEASURES

**Steps To Be Taken In Case Material Is Released Or Spilled:** Remove all sources of ignition. Ventilate the area. Remove with inert absorbent.

## SECTION 9 — HANDLING AND STORAGE

**Storage temperature:** minimum: 41 °F maximum: 104 °F
Handling and Storage Precautions: Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Protect from freezing.

SECTION 10 — EXPOSURE CONTROL MEASURES

Precautions To Be Taken In Use: Use only with adequate ventilation. Avoid contact with skin and eyes. Avoid breathing vapor and spray mist. Wash hands after using. This coating may contain materials classified as nuisance particulates (listed as Dust in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m³ (total dust), 3 mg/m³ (respirable fraction), OSHA PEL 15 mg/m³ (total dust), 5 mg/m³ (respirable fraction). Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

Eye Protection: Wear safety spectacles with unperforated sideshields

Ventilation: Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

Respiratory Protection: If personal exposure cannot be controlled below applicable limits by ventilation.

Protective Gloves: Required for long or repeated contact.

Exposure Limits: Not Available.

SECTION 11 — TOXICOLOGY INFORMATION

No Data Available

SECTION 12 — ECOLOGICAL INFORMATION

No Data Available

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste Disposal Method: Waste disposal should be in accordance with existing Federal, State and local environmental control laws. Incineration is the preferred method. CA ONLY: Considered Non-RCRA Hazardous Waste.

Empty Container Precautions: Do not reuse without thorough cleaning. If container is to be disposed, ensure all product residues are removed prior to disposal.

SECTION 14 — TRANSPORTATION INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.


IMO - Not Regulated for Transportation.  IATA/ICAO - Not Regulated for Transportation.

SECTION 15 — OTHER REGULATORY INFORMATION
Osha Hazardous - No

SARA 311/312 HAZARDOUS CATEGORIZATION

<table>
<thead>
<tr>
<th>Acute Health Hazard – No</th>
<th>Chronic Health Hazard – No</th>
<th>Fire Hazard – No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudden Release of Pressure – No</td>
<td>Reactive Hazard - No</td>
<td></td>
</tr>
</tbody>
</table>

**Proposition 65:** WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm at levels less than required for reporting (<0.1%).

**Tsca Certification:** All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

**SECTION 16 — OTHER INFORMATION**

**NOTE:** CTS Cement Manufacturing Corporation makes no representations as to the completeness or accuracy of the information in this document; and, no guarantee or warranty of any kind, express or implied, is made herein. We are not liable for any consequential, incidental, or special damages arising directly or indirectly from the use of this information.
1. Identification

Product identifier: Rapid Set Acrylic Primer

Other means of identification:
- Product code: 181040000

Recommended use: Industrial use.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
- Company name: CTS Cement Manufacturing Corporation
- Address: 11065 Knott Ave Suite A
  Cypress, CA 90630
  United States
- Telephone: 1-800-929-3030
- E-mail: info@ctscement.com
- Contact person: Safety Officer
- Emergency telephone: 1-800-929-3030 (8 AM - 5 PM) number

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Carcinogenicity

OSHA defined hazards: Not classified. Category 2

Label elements:
- Signal word: Warning
- Hazard statement: Suspected of causing cancer.
- Precautionary statement:
  - Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.
  - Response: If exposed or concerned: Get medical advice/attention.
  - Storage: Store locked up.
  - Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.
- Hazard(s) not otherwise classified (HNOC): None known.

3. Composition/information on ingredients
Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzophenone</td>
<td>119-61-9</td>
<td>0-0.3</td>
</tr>
</tbody>
</table>

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact: Wash off with warm water and soap. Do not peel polymer from the skin. Get medical attention if irritation develops and persists.

Eye contact: Rinse with water. Get medical attention if irritation develops and persists.

Ingestion: Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed: Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed: Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Not applicable, non-combustible.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters: Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.

Fire fighting equipment/instructions: Move containers from fire area if you can do so without risk.

Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards: No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up: Collect in containers and seal securely. Containers must be labeled.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions
Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage
Precautions for safe handling
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid prolonged exposure. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. To maintain product quality, do not store in heat or direct sunlight. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection
Occupational exposure limits
US. Workplace Environmental Exposure Level (WEEL) Guides

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzophenone (CAS 119-61-9)</td>
<td>TWA</td>
<td>0.5 mg/m3</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment
Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection
Hand protection
Use protective gloves made of: Nitrile.

Other
Wear suitable protective clothing.

Respiratory protection
No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

9. Physical and chemical properties
Appearance
Physical state
Liquid. Form
Liquid.

Color
Blue.

Odor
Low.

Odor threshold
Not available. pH
Not applicable.

Melting point/freezing point
Not applicable.

Initial boiling point and boiling
413.6 - 705.2 °F (212 - 374 °C) range

Flash point
Not applicable.

Evaporation rate
Not applicable.

Flammability (solid, gas)
Not applicable.

Upper/lower flammability or explosive limits
Flammability limit - lower  Not applicable. (%)

Flammability limit - upper  Not applicable. (%) 

Vapor pressure  Not applicable. Vapor 

density  Not applicable. 

Relative density  1.07 

Relative density temperature  70 °F (21.11 °C) 

Solubility(ies) 

Solubility (water)  Not applicable. 

Partition coefficient  Not applicable. 

(n-octanol/water) 

Auto-ignition temperature  Not applicable. Decomposition 

temperature  Not applicable. 

Viscosity  Not applicable. 

Other information 

Bulk density  Not applicable. 

VOC (Weight %)  0 g/l 

10. Stability and reactivity 

Reactivity  The product is stable and non-reactive under normal conditions of use, storage and transport. 

Chemical stability  Material is stable under normal conditions. 

Possibility of hazardous reactions  No dangerous reaction known under conditions of normal use. reactions 

Conditions to avoid  Contact with incompatible materials. Incompatible materials 

Strong oxidizing agents.
Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

- **Inhalation**: No adverse effects due to inhalation are expected.
- **Skin contact**: Prolonged skin contact may cause temporary irritation.
- **Eye contact**: Direct contact with eyes may cause temporary irritation.
- **Ingestion**: May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Information on toxicological effects

- **Acute toxicity**: Ingestion may cause irritation and malaise.
- **Skin corrosion/irritation**: Prolonged skin contact may cause temporary irritation. **Serious eye damage/eye irritation**: Direct contact with eyes may cause temporary irritation.
- **Respiratory or skin sensitization**: Not a respiratory sensitizer.
- **Skin sensitization**: This product is not expected to cause skin sensitization.
- **Germ cell mutagenicity**: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- **Carcinogenicity**: Suspected of causing cancer.
  - IARC Monographs. Overall Evaluation of Carcinogenicity
    - Benzophenone (CAS 119-61-9) 2B Possibly carcinogenic to humans.
    - Not listed.
- **Reproductive toxicity**: This product is not expected to cause reproductive or developmental effects.
- **Specific target organ toxicity - single exposure**: Not classified.
- **Specific target organ toxicity - repeated exposure**: Not classified.
- **Aspiration hazard**: Not an aspiration hazard.
- **Chronic effects**: Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzophenone (CAS 119-61-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna) 0.21 - 0.37 mg/l, 24 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas) 13.2 - 15.3 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

5.96 - 7.41 mg/l, 7 days

**Persistence and degradability**: No data available. **Bioaccumulative potential**: No data available.
Mobility in soil  
No data available.

Other adverse effects  
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions  
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations  
Dispose in accordance with all applicable regulations.

Hazardous waste code  
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products  
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging  
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT  
Not regulated as dangerous goods.

IATA  
Not regulated as dangerous goods.

IMDG  
Not regulated as dangerous goods.

Transport in bulk according to  
Not established.

Annex II of MARPOL 73/78 and the IBC Code  

15. Regulatory information

US federal regulations  
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)  
Benzophenone (CAS 119-61-9) 0.1 % One-Time Export Notification only.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)  
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)  
Not listed.

Superfund Amendments and Reauthorization Act of 1986  
(SARA) Hazard categories  
Immediate Hazard - No Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

SARA 302 Extremely hazardous substance  
Not listed.

SARA 311/312 Hazardous  
Yes chemical

SARA 313 (TRI reporting)  
Not regulated.
Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.

US. Rhode Island RTK Not regulated.

US. California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Benzophenone (CAS 119-61-9)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>China</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
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<tr>
<td></td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
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</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
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</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date            23-January-2015
Revision date          -
Version #              01

HMIS® ratings
Health: 1*
Flammability: 0
Physical hazard: 0
Disclaimer

CTS Cement Manufacturing Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.
RAPID SET® TRU Self Leveling

SECTION 1 - PRODUCT AND COMPANY INFORMATION

Supplier
CTS Cement Manufacturing Corp.
11065 Knott Ave., Suite A
Cypress, CA 90630, United States
Telephone Number: 714-379-8260
FAX Number: 714-379-8270
Email: info@ctscement.com
Website: www.ctscement.com

Manufacturer
CTS Cement Manufacturing Corp.
11065 Knott Ave., Suite A
Cypress, CA 90630, United States
Telephone Number: 714-379-8260
FAX Number: 714-379-8270
Email: info@ctscement.com
Website: www.ctscement.com

Health 1
Fire 0
Reactivity 0
Personal Protection E

Supplier Emergency Contact
1-714-379-8260

Product Name: Rapid Set TRU Self-Leveling
CAS Number: 960375-09-1
Chemical Family: Cementitious Mortar

Manufacturer Emergency Contact
1-714-379-8260

MSDS Number: 
Product Code: 

SECTION 2 — COMPONENT INFORMATION

<table>
<thead>
<tr>
<th>Ingredient (Specific Chemical Identity, Common Name)</th>
<th>CAS Number</th>
<th>% of Total Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Sulfoaluminate Cement</td>
<td>960375-09-1</td>
<td>30-60</td>
</tr>
<tr>
<td>Crystalline Silica (Quartz), SiO2</td>
<td>14808-60-7</td>
<td>40-70</td>
</tr>
</tbody>
</table>

SECTION 3 — HAZARDOUS INFORMATION

Primary Route(s) of Entry: Inhalation, Skin, Eye, Ingestion

Inhalation Hazards: May cause respiratory tract, nose, throat, and lung irritation and inflammation

Skin Hazards: May irritate skin causing drying, redness, rash, and blistering. When mixed with water, a high alkalai material is produced which can cause severe skin burns. Individuals may develop allergic dermatitis.

Eye Hazards: May severely irritate eyes. May develop inflammation of the cornea.

Ingestion Hazards: May be caustic to mucus tissue.

Chronic Exposure: Individuals may develop allergic dermatitis, inflammation of the cornea, and inflammation of the nose, throat, and lungs. May cause carcinogenic effects.

Carcinogenic Effects: May contain crystalline silica, a known Human Carcinogen (Group 1), that can cause silicosis and cancer. Exposure to crystalline silica may also increase the risk of Scleroderma, Tuberculosis, and kidney disorders. May contain traces of chemicals on the California Proposition 65 list.
Threshold Limit Value: 5 mg/m³ (respirable dust), 10 mg/m³ (total dust), 30 million particles per cubic foot

Hazardous Components | CAS No. | PEL (OSHA)[mg/m³] | TLV (ACGIH)[mg/m³]
--- | --- | --- | ---
Calcium Sulfoaluminate Cement | 960375-09-1 | 15 | 10

Crystalline Silica (Quartz) | 14808-60-7 | 10/(%SiO₂+2) | 0.05(respirable)

SECTION 4 — FIRST AID INFORMATION

Inhalation: Remove the individual to fresh air. If irritation persists, get medical attention.

Skin: Flush with water immediately. If irritation persists, get medical attention immediately.

Eye: Flush eyes with plenty of water. If irritation persists, get medical attention immediately.

Ingestion: If conscious, drink plenty of water. Do not induce vomiting. Get immediate medical attention.

SECTION 5 — PHYSICAL & CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Boiling Point: &gt;2700°F</th>
<th>Specific Gravity: 2.7 to 3.1</th>
<th>Melting Point: &gt;2700°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor Pressure (mm Hg): None</td>
<td>Vapor Density (AIR = 1): None</td>
<td>Evaporation Rate: None</td>
</tr>
</tbody>
</table>

Solubility in Water: Slight

Appearance and Odor: Gray / tan color powder. Odor N/A

SECTION 6 — FIRE & EXPLOSION PROPERTIES

Flash Point: Non-Combustible | Flammable Limits: N/A | LEL: N/A | UEL: N/A |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Extinguishing Media: None</td>
<td>Special Fire Fighting Procedures: None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 7 — REACTIVITY INFORMATION

Stability: Stable | Conditions to Avoid: Unintended contact with water |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Polymerization: Will not occur</td>
<td></td>
</tr>
</tbody>
</table>

Hazardous Decomposition or Byproducts: Silica mixed with hydrofluoric acid may produce a corrosive gas.
Incompatible Materials: When mixed with water, may be highly alkali. Incompatible with acids, ammonium and salts. Avoid contact of silica with powerful oxidizing agents and acids.

SECTION 8 — ACCIDENTAL RELEASE MEASURES

Use a dust free method to clean up spills. Use the appropriate personal protective equipment.

SECTION 9 — HANDLING AND STORAGE

Waste Disposal Method: Use appropriate disposal facility complying with local regulations. Not classified as hazardous waste under RCRA of CERCLA. Do not create dust.

Handling and Storage Precautions: Use proper personal protective equipment. Do not breath dust. Avoid contact with eyes, skin, and clothing. Avoid unintentional contact with water.

SECTION 10 — EXPOSURE CONTROL MEASURES

Engineering Controls: Use with adequate ventilation to control airborne dust levels

Eye Protection: Safety glasses with side shields or goggles are recommended

Skin Protection: Impervious gloves, boots and clothing are recommended to protect the skin from contact

Respiratory Protection: In dusty environments, an OSHA, MSHA or NIOSH approved respirator is recommended.

Hygienic Practices: After handling, thoroughly wash hands and exposed skin with soap and water.

Exposure Limits: Consult authorities for exposure limits

SECTION 11 — TOXICOLOGY INFORMATION

Toxicity to Animals: LD50 and LC50 rating not determined. A high pH material is produced when mixed with water.

Chronic Effects on Humans: May contain Silica sand, a known carcinogen. May aggravate eye, skin, and respiratory conditions. May contain chemicals on the Proposition 65 list.

SECTION 12 — ECOLOGICAL INFORMATION

No Data Available

SECTION 13 — DISPOSAL CONSIDERATIONS

Not classified as hazardous waste under the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation, and Recovery Act

SECTION 14 — TRANSPORTATION INFORMATION

Not determined to be hazardous under the U.S. Department of Transportation. Not Regulated by DOT.

SECTION 15 — OTHER REGULATORY INFORMATION
US OSHA 29CFR 1910.1200: May be considered hazardous and should be included in the employers’ hazardous communication program.

SARA Section 313 Notification: Not subject to reporting requirements.

Proposition 65: This product may contain materials on the Proposition 65 list.

### SECTION 16 — OTHER INFORMATION

<table>
<thead>
<tr>
<th>Key/Abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH – American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>CAS – Chemical Abstract Service.</td>
</tr>
<tr>
<td>DOT – Department of Transportation.</td>
</tr>
<tr>
<td>LEL – Lower Exposure Limit.</td>
</tr>
<tr>
<td>MSHA – Mine Safety and Health Administration.</td>
</tr>
<tr>
<td>N/A – Not Applicable.</td>
</tr>
<tr>
<td>NIOSH – National Institute for Occupational Safety and Health.</td>
</tr>
<tr>
<td>OSHA – Occupational Safety and Health Administration.</td>
</tr>
<tr>
<td>SARA – Superfund Amendments and Reauthorization Act.</td>
</tr>
<tr>
<td>UEL – Upper Exposure Limit.</td>
</tr>
</tbody>
</table>

NOTE: CTS Cement Manufacturing Corporation makes no representations as to the completeness or accuracy of the information in this document; and, no guarantee or warranty of any kind, express or implied, is made herein. We are not liable for any consequential, incidental, or special damages arising directly or indirectly from the use of this information.
SAFETY DATA SHEET

1. Identification

Product identifier: Rapid Set TRU Self Leveling

Other means of identification
- Product code: 180010050

Recommended use: Industrial use.

Recommended restrictions: Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

- Company name: CTS Cement Manufacturing Corporation
- Address: 11065 Knott Ave Suite A Cypress, CA 90630 United States
- Telephone: 1-800-929-3030
- E-mail: info@ctscement.com
- Contact person: Safety Officer

Emergency telephone number: 1-800-929-3030 (8 AM - 5 PM)

2. Hazard(s) identification

Physical hazards

Health Hazards
- Not classified.

Skin corrosion/irritation
- Category 2

Serious eye damage/eye irritation
- Category 1

Carcinogenicity
- Category 1A Category 1B

Reproductive toxicity
- Category 3 respiratory tract irritation

Specific Target Organ Toxicity, Single Exposure
- Category 2 (Lungs)

Specific Target Organ Toxicity, Repeated Exposure
- Category 2 (Lungs)

OSHA defined hazards

Label elements

Signal word: Danger
**Hazard statement**
Causes skin irritation. Causes serious eye damage. May cause cancer. May cause respiratory irritation. May cause damage to organs (Lungs) through prolonged or repeated exposure.

**Precautionary statement**

**Prevention**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Use in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

**Response**
If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

**Storage**
Keep container tightly closed. Store in dry location.

**Disposal**
Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)**
None known.

### 3. Composition/information on ingredients

**Mixtures**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Sulfoaluminate Cement</td>
<td>960375-09-1</td>
<td>20-40</td>
</tr>
<tr>
<td>Silica, quartz</td>
<td>14808-60-7</td>
<td>25-35</td>
</tr>
<tr>
<td>Amorphous Silica; Silica dioxide</td>
<td>61790-53-2</td>
<td>15-30</td>
</tr>
<tr>
<td>Limestone</td>
<td>1317-65-3</td>
<td>0.1-8</td>
</tr>
<tr>
<td>Calcium Hydroxide; Slaked Lime; Hydrated Lime</td>
<td>1305-62-0</td>
<td>1-5</td>
</tr>
<tr>
<td>Anhydrous Calcium Sulfate</td>
<td>7778-18-9</td>
<td>0.5-2</td>
</tr>
<tr>
<td>Lithium Carbonate</td>
<td>554-13-2</td>
<td>&lt;0.3</td>
</tr>
</tbody>
</table>

**Composition comments**
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First-aid measures

**Inhalation**
If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Eye contact**
Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Ingestion**
Immediately rinse mouth and drink plenty of water. Call an ambulance and take these instructions. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed
Indication of immediate medical attention and special treatment needed
General information

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Skin irritation.

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Stop the flow of material, if this is without risk. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains or water courses.

7. Handling and storage

Precautions for safe handling
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Do not breathe dust. Do not get this material in contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. Store in dry location. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
</table>

Rapid Set TRU Self Leveling  
922488  
Version #: 01  
Revision date: -  
Issue date: 04-September-2014
US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, quartz (CAS 14808-60-7)</td>
<td>TWA</td>
<td>20 mppcf</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.3 mg/m3</td>
<td>Respirable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1 mg/m3</td>
<td>Respirable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 mppcf</td>
<td>Respirable.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, quartz (CAS 14808-60-7)</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>Respirable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.05 mg/m3</td>
<td>Respirable dust.</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Exposure guidelines
Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses or safety goggles unless full face respirator is in use.

Skin protection

Hand protection
Wear appropriate chemical resistant gloves.

Other
Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection
Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.
9. Physical and chemical properties

Appearance
- Physical state: Solid.
- Form: Powder.
- Color: Tan.

Odor
- Odor: Low.
- Odor threshold: Not available.

pH
- pH: 11 – 12 when wet

Melting point/freezing point
- Not applicable.

Initial boiling point and boiling range
- Not applicable.

Flash point
- Not applicable. 

Evaporation rate
- Not applicable.

Flammability (solid, gas)
- Non combustible.

Upper/lower flammability or explosive limits
- Flammability limit - lower (%): Not applicable.
- Flammability limit - upper (%): Not applicable.

Vapor pressure
- Not applicable.

Vapor density
- Not applicable.

Relative density
- 2.7-3.1 @ 20°C

Solubility(ies)
- Solubility (water): Not available.
- Partition coefficient (n-octanol/water): Not applicable.

Auto-ignition temperature
- Not applicable.

Decomposition temperature
- 2460 °F (1350 °C)

Viscosity
- Not applicable.

Other information
- Bulk density: 60 lb/ft³
- Partition coefficient (oil/water): Not applicable.

VOC (Weight %)
- 11 g/l when mixed with water

10. Stability and reactivity

Reactivity
- The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
- Material is stable under normal conditions.

Possibility of hazardous reactions
- No dangerous reaction known under conditions of normal use. 

Conditions to avoid
- Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

Incompatible materials
- Powerful oxidizers.

Hazardous decomposition products
11. Toxicological information

Information on likely routes of exposure

- **Inhalation**: May cause damage to organs through prolonged or repeated exposure by inhalation. Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful.
  - **Skin contact**: Causes skin irritation. Prolonged contact with wet cement/mixture may cause burns.
  - **Eye contact**: Causes serious eye damage. Prolonged contact with wet cement/mixture may cause burns.
  - **Ingestion**: Swallowing may cause gastrointestinal irritation.
  - **Symptoms related to the physical, chemical and toxicological characteristics**
    - **Inhalation**: Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Skin irritation.

Information on toxicological effects

- **Acute toxicity**: May cause respiratory irritation.
  - **Skin corrosion/irritation**: Causes skin irritation.
  - **Serious eye damage/eye irritation**: Causes serious eye damage.
  - **Respiratory or skin sensitization**:
    - **Respiratory sensitization**: No data available.
    - **Skin sensitization**: No data available.

- **Germ cell mutagenicity**: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

- **Carcinogenicity**:
  - May cause cancer.
  - In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

---

**IARC Monographs. Overall Evaluation of Carcinogenicity**

- Silica, quartz (CAS 14808-60-7) 1 Carcinogenic to humans.

**NTP Report on Carcinogens**

- Silica, quartz (CAS 14808-60-7) Known To Be Human Carcinogen.


- Not listed.

**Reproductive toxicity**

- May damage fertility or the unborn child.

**Specific target organ toxicity - single exposure**

- May cause respiratory irritation.
Specific target organ toxicity - May cause damage to organs (Lungs) through prolonged or repeated exposure. repeated
exposure

Aspiration hazard
Due to the physical form of the product it is not an aspiration hazard.

Chronic effects
Prolonged or repeated exposure may cause lung injury, including silicosis. May cause skin
disorders if contact is repeated or prolonged.

12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the
possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
No data available. Mobility

in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation
potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of
contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
The waste code should be assigned in discussion between the user, the producer and the waste
disposal company.

Waste from residues / unused
products
Dispose of in accordance with local regulations. Empty containers or liners may retain some
product residues. This material and its container must be disposed of in a safe manner (see:
Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Since emptied containers may retain product residue, follow label warnings even after container is
emptied.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to
Not applicable.

Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US federal regulations
This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
Superfund Amendments and Reauthorization Act of 1986
(SARA) Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous Chemicals
Yes chemical

SARA 313 (TRI reporting) Not regulated.

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated.
Safe Drinking Water Act (SDWA)

US state regulations
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List
Amorphous Silica; Silica dioxide (CAS 61790-53-2)
Anhydrous Calcium Sulfate (CAS 7778-18-9)
Calcium Hydroxide; Slaked Lime; Hydrated Lime (CAS 1305-62-0)
Limestone (CAS 1317-65-3)
Lithium Carbonate (CAS 554-13-2)
Silica, quartz (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act
Amorphous Silica; Silica dioxide (CAS 61790-53-2)
Anhydrous Calcium Sulfate (CAS 7778-18-9)
Calcium Hydroxide; Slaked Lime; Hydrated Lime (CAS 1305-62-0)
Limestone (CAS 1317-65-3)
Lithium Carbonate (CAS 554-13-2)
Silica, quartz (CAS 14808-60-7)

US. Pennsylvania Worker and Community Right-to-Know Law
Amorphous Silica; Silica dioxide (CAS 61790-53-2)
Anhydrous Calcium Sulfate (CAS 7778-18-9)
Calcium Hydroxide; Slaked Lime; Hydrated Lime (CAS 1305-62-0) Silica, quartz (CAS 14808-60-7)

US. Rhode Island RTK
Lithium Carbonate (CAS 554-13-2)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Lithium Carbonate (CAS 554-13-2)
Silica, quartz (CAS 14808-60-7)

International Inventories

Country(s) or region Inventory name On inventory (yes/no)* United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).
Limestone (CAS 1317-65-3)
### 16. Other information, including date of preparation or last revision

<table>
<thead>
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<th>Description</th>
<th>Details</th>
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<tbody>
<tr>
<td>Issue date</td>
<td>04-September-2014</td>
</tr>
<tr>
<td>Revision date</td>
<td>-</td>
</tr>
<tr>
<td>Version #</td>
<td>01</td>
</tr>
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<td>Health: 3*</td>
</tr>
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<td></td>
<td>Flammability: 0</td>
</tr>
<tr>
<td></td>
<td>Physical hazard: 0</td>
</tr>
<tr>
<td>Disclaimer</td>
<td>CTS Cement Manufacturing Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.</td>
</tr>
</tbody>
</table>
MATERIAL SAFETY DATA SHEET and WARRANTY

B204 Rev. 10/12

Date: October 1, 2012

Section I

Identification

Product Name: SCOFIELD® Cureseal-W™

Chemical Name: Mixture

Chemical Family: Polymer dispersion

Chemical Formula: Mixture

Emergency Telephone Number: CHEMTREC (800) 424-9300

Telephone Number for Information: SCOFIELD (770) 920-6000 (323) 720-3000

Section II

Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Composition</th>
<th>Weight</th>
<th>OSHA TWA</th>
<th>ACGIH TLV</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethoxylated 2,4,7,9-tetramethyl 5 decyn-4,7-diol</td>
<td>1–5%</td>
<td>NE</td>
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<td>9014-85-1</td>
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<tr>
<td>Trimethyl-1,3-Pentanediol, monoisobutyrate</td>
<td>1–5%</td>
<td>NE</td>
<td>NE</td>
<td>25265-77-4</td>
</tr>
</tbody>
</table>

NE = Not established

Section III

Hazards Identification

Emergency Overview:
In a confined area, vapors in high concentrations may cause headache, nausea, or dizziness. Prolonged or repeated exposure can cause irritation to eyes, skin, and upper respiratory tract.

Signs and Symptoms of Exposure:
Inhalation — Irritation of the upper respiratory tract, coughing, sore throat, and shortness of breath.
Eyes — Burning or stinging.
Skin — Irritation, redness, burning.
Ingestion — Burning of mouth and throat, nausea, vomiting, diarrhea, or dizziness.

Medical Conditions Generally Aggravated by Exposure: Dermatitis

Section IV

First Aid Measures

Emergency and First Aid Procedures:
Eyes — Flush IMMEDIATELY with lukewarm water while holding eyelids apart. Flushing within several seconds is essential to achieve maximum effectiveness. If irritation continues, get medical attention.
Inhalation — If breathing becomes difficult, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention.
Ingestion — Do not induce vomiting. Vomiting will cause further damage to the throat. Give conscious victim 1 to 2 glasses of water. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Contact local poison control center. Transport victim to an emergency facility if advised to do so.
Skin — Wash thoroughly with soap and water. Remove soiled clothing and footwear and wash before reuse. If irritation occurs, get medical attention.
MATERIAL SAFETY DATA SHEET and WARRANTY

Flash Point: > 200° F
Flammable Limits: Not determined

Extinguishing Media: Water spray, dry chemical, foam, and CO₂.
Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Cool tightly closed containers exposed to fire with water.

Unusual Fire and Explosion Hazards: Closed containers may rupture due to high buildup of pressure and weakening of the container structure when exposed to extreme heat.

Section VI
Accidental Release Measures
Steps to be Taken in Case Material is Released or Spilled: Only qualified personnel who have read the product Tech-Data Bulletins and this MSDS should conduct these procedures. Persons not wearing protective equipment should be excluded from the area. Follow procedures in Section VIII—Exposure Controls/Personal Protection. Liquid material spills may be slippery.
Cordon off area if necessary to prevent unauthorized traffic or entry. Collect with wet vacuum or absorb with inert material and place in labeled waste container for disposal together with all contaminated matter or equipment. If unable to prevent release to soil or waters of the State, immediate notice to local regulatory authorities is required.

Section VII
Precautions for Safe Handling and Use
Precautions to be Taken in Handling and Storing: The user is cautioned to be thoroughly familiar with all applicable requirements before using this product. Follow personal protection procedures (Section VIII) when handling the material. Store upright in a cool, dry, well-ventilated area, in tightly closed containers away from combustible materials and sources of heat. Avoid freezing. Once frozen, do not use. Store between 45° F and 120° F. Protect from physical damage. Labels must not be removed from containers. Product should only be stored in original containers.

Section VIII
Exposure Controls/Personal Protection
Ventilation/Engineering Controls: Adequate ventilation and sufficient local exhaust as needed to control exposure.

Respiratory Protection: P100/organic vapor respirator (NIOSH TC-84A approved) is recommended. 3M Company’s Tech Line (1-800-243-4630) may be helpful for respirator advice and availability. For respiratory protection guidelines refer to OSHA 29 CFR 1910.134.

Eye Protection: Chemical-splash goggles recommended.
Skin Protection: Impervious, chemical-resistant gloves recommended.
Other Protective Clothing or Equipment: Wear suitable clothing to avoid skin contact.
Work/Hygienic Practices: Minimize exposure in accordance with good hygienic practice. Wash with soap and water immediately after handling.
MATERIAL SAFETY DATA SHEET and WARRANTY

Physical and Chemical Characteristics

Appearance: Milky liquid
Odor: Slight odor
pH: Approximately 7.5–8.5
Vapor Pressure (mm Hg.): Similar to water
Vapor Density (Air = 1): Similar to water
Boiling Point: Similar to water
Freezing Point: Similar to water
Solubility in Water: Partially soluble
Specific Gravity (H₂O = 1): Approximately 1
Evaporation Rate (Butyl Acetate = 1): Similar to water
Volatile Organic Compounds: < 100 g/L (0.83 lb/gal)

Section X Stability and Reactivity

Stability: Stable
Conditions to Avoid: Freezing. Excessive heat or open flame.
Incompatibility (Materials to Avoid): Strong oxidizing agents.
Hazardous Decomposition or By-products: CO and CO₂ may be produced.
Hazardous Polymerization: Will not occur.

Section XI Toxicological Information

Toxicity: No delayed, subchronic, or chronic test data are known. This product does not contain any ingredient at 0.1% or greater designated by IARC, NTP, ACGIH, or OSHA as probable or suspected human carcinogens.

Section XII Ecological Information

Aquatic Toxicity Rating: LC₅₀ aquatic toxicity rating not determined. Although there is no toxicity data available, it is reasonable to assume that sufficient quantities will affect aquatic life. Precautions should be taken to prevent the accidental release of this material to the environment.

Section XIII Disposal Considerations

Waste Disposal Method: Follow personal protection procedures (Section VIII) when disposing of material. Disposal of all residual product, used absorbent materials, and discarded equipment must be in accordance with all applicable federal, state, and local regulations.
Scofield cannot make specific recommendations for disposal in any particular locality. Without endorsement of any particular waste disposal company, Scofield offers the following companies as possible resources for the disposal of industrial or hazardous waste:
Veolia Environmental 1-800-426-2382  Heritage Environmental 1-800-827-4374 Companies who dispose of hazardous waste may also be found on the Internet using “Hazardous Waste Disposal” as key search words.
MATERIAL SAFETY DATA SHEET and WARRANTY

Date: October 1, 2012

Section XIV

Transport Information

US DOT Hazard Class: Not regulated

Section XV

Regulatory Information

U.S. Federal Regulations: This product contains a chemical subject to the reporting requirements of Sections 311–312 of Title III of the Superfund Amendments and Reauthorization Act.

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training, and access to written records. It is your legal duty to make all information in this Material Safety Data Sheet available to your employees.

State Regulations: State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65); WARNING: This product contains one or more chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.

For all state regulations, please check with the appropriate state agency.

International Regulations: Consult the regulations of the importing country.

Section XVI

Other Information

Before using this product: Completely read Scofield’s Tech-Data Bulletin B-204 SCOFIELD Cureseal-W and the container label.

WARRANTY

Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.
1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

1.1 GHS Product Identifier
Commercial Product Name: SCOFIELD® Cureseal-W™ Concrete Curing Compound and Sealer - 1623
Chemical Name: Water-based dispersion of acrylic polymer and functional coating additives

1.2 Relevant identified uses of product: SCOFIELD® Cureseal-W™ Concrete Curing Compound and Sealer is designed to meet ASTM C309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete. It is a clear, interior/interior high-quality curing and sealing compound that is applied to freshly placed concrete to retain moisture for curing and is an effective sealer for freshly-placed or existing concrete. It also provides more uniform color and stain resistance immediately after drying.

1.3 Details of the supplier of the safety data sheet:
L. M. SCOFIELD Company
6533 Bandini Blvd, Los Angeles, CA 90040
4155 Scofield Road, Douglasville, GA 30134
SCOFIELD Phone Number (800) 800-9900
Information Phone Number (323) 720-3000
www.scofield.com
Information Phone Number (770) 920-6000

1.4 Transportation Emergency Telephone Number: CHEMTREC (800) 424-9300

2 HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture:
Human Health: GHS and CLP, irritant, eye contact with product can result in moderate eye injury. Skin contact with product can cause irritation and inhalation of mists can cause respiratory irritation. No chronic effects are known.

2.2 Label elements: GHS Hazard (H) Statements
Acute toxicity, ingestion, SE, H303, category 5
Acute toxicity, skin contact, SE, H313, category 4
Acute toxicity, eye contact, SE, H319, category 2A
Acute toxicity, mist inhalation, SE, H332, category 4

Acute Toxicity
Signal Word: WARNING

H303--May be harmful if swallowed
H313--May be harmful in contact with skin
H319--Causes serious eye irritation
H332--Harmful if inhaled

Chronic Toxicity
No chronic toxicity is known

GHS Precautionary Statements
Prevention Precautionary (P) Statements
P102-- Keep out of the reach of children.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS: Product has unknown toxicity for oral, dermal and inhalation routes of exposure.
For full text wording of terms refer to Section 16.

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Main Constituent: Acrylic polymer dispersion
3.2 Mixture: Mixture of polymer dispersion, with functional additives.

<table>
<thead>
<tr>
<th>Hazardous Components of Mixture</th>
<th>CAS #</th>
<th>EINECS #</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene Glycol Phenyl Ether (Glycol Ether PPh)</td>
<td>770-35-4</td>
<td>212-222-7</td>
<td>0 to 0.5%</td>
</tr>
</tbody>
</table>

The exact percentages in this composition and some components have been withheld as trade secrets.

4 FIRST AID MEASURES

4.1 Description of first aid measures:
If swallowed: Do NOT induce vomiting, rinse mouth and drink plenty of water, immediately call a POISON CENTER (800) 222-1222 or 911 for first aid instructions.
Eye Contact: Immediately flush eyes with plenty of clean water for 15 minutes. Remove any contact lenses and open eyelids widely during flushing. If eye irritation persists, transport person to emergency room/hospital & bring this SDS.

4.2 Most important symptoms and effects both acute and delayed:
Hazards: Acute, moderate eye irritant. No delayed effects are known.

4.3 Indication of any immediate medical attention and special treatment needed:
Refer to Section 11 For more detailed information on health effects and symptoms. Primary routes of entry: Eye contact, splashing into eye(s), ingestion, skin contact.

5 FIREFIGHTING MEASURES

5.1 Extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special Hazards arising from the substance or mixture: Fire hazard: Minimal

Explosion hazard: None
Reactivity: Hazardous reactions will not occur under normal conditions.
Fire hazard: Product is effectively nonflammable.
Unusual fire hazards: May produce harmful vapors or fumes in fire, carbon monoxide.

5.3 Advice for firefighting:
Firefighting instructions: Fight fire from a distance.
Firefighting protection: Wear self contained breathing apparatus (SCBA) and turnout gear to fight fire.

### 6 ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions:
General measures: Use personal protective equipment, refer to section 8 for additional PPE information.
Protective equipment: Use proper safety equipment when handling spills.

#### 6.2 Environmental precautions:
Product should not be released into water drains, sewers, or soil areas. Notify local authorities if spill enters water.

#### 6.3 Methods and material containment and cleaning up:
Have spill containment materials available. Soak up liquid with absorbent materials, such as clay, sawdust, or other similar absorbent material and then shovel the absorbed material into a marked drum for disposal.

### 7 HANDLING AND STORAGE

#### 7.1 Precautions for safe handling:
Handle in accordance with good industrial hygiene procedures. Always wash hands immediately after handling this product. Do not eat, drink or smoke in areas where product is being used.

#### 7.2 Conditions for safe storage including any incompatibilities:
Store between 40-120 °F (4-49 °C). Keep containers closed and out of direct sunlight until used. Store away from strong acids, strong bases or strong oxidizers.

#### 7.3 Specific end uses:
Refer to Section 1.2 for use information.

### 8 EXPOSURE CONTROLs/PERSONAL PROTECTION

#### 8.1 Control parameters

<table>
<thead>
<tr>
<th>Components of Mixture</th>
<th>OSHA PEL 8hr</th>
<th>ACGIH TLV</th>
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</thead>
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<tr>
<td>Propylene Glycol Phenyl Ether (Glycol Ether PPh)</td>
<td>exposure limit not established</td>
<td>NDA</td>
</tr>
</tbody>
</table>

#### 8.2 Exposure controls:
Personal Protective Equipment Symbols: NDA = No Data Available
Personal protection: Wear proper safety equipment when using product.
Engineering measures: Use local exhaust and room ventilation.
Provide easy access to eye wash stations located close to work area.
Respiratory equipment: When working in confined areas, use an approved respirator that is equipped with proper organic vapors cartridges and mist/particulate filters.
Hand protection: Wear chemical resistant gloves, such as neoprene or nitrile rubber.
Eye protection: Wear a face shield or safety glasses with side shields or tight-fitting chemical splash goggles.
Skin protection: Wear chemical resistant protective clothing, such as a rubber apron or a rubber coat.
Hygiene measures: Wash hands after exposure, Remove contaminated clothing, shower then wash with plenty of soap and water. Wash contaminated clothing prior to reuse.
Environmental exposure controls: Observe all applicable regulations limiting discharge to air, water, or soil, If a spill occurs, apply absorbent materials to absorb liquid. Use a shovel to handle absorbed material and place in a properly marked waste container. Handle absorbed material according to applicable local/state/federal waste requirements.

#### 9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property/Parameter</th>
</tr>
</thead>
</table>
a) Appearance: White Liquid
b) pH: 8.5 to 9.0
c) Color: Milky white
d) Odor: Slight odor, mild
e) Freezing/Melting Point: 32°F (0 °C)
f) Boiling Range: 212 °F (100 °C) water-based system

g) Flash Point: No Data Available
h) Auto Ignition Temperature: No Data Available
i) Explosive Limits UEL, LEL: No Data Available
j) Decomposition Temperature: No Data Available
k) Flammability: Effectively nonflammable
l) Vapor Pressure: Partially Soluble
m) Vapor density vs air = 1.0: No Data Available
n) Relative Density, water = 1.0: Similar to water
o) Solubility in water: Slightly more viscous than water
p) KOW Partition Coefficient: <100 g/L (<0.83lb/gal)

10 STABILITY AND REACTIVITY

10.1 Reactivity: No data is available on reactivity.

10.2 Chemical stability: Stable under normal temperatures and conditions.

10.3 Possibility of hazardous reactions: There are no known hazardous reactions.

10.4 Conditions to avoid: Avoid contact with oxidizers, strong bases or strong acids.

10.5 Incompatible materials: Avoid contact with oxidizers.

10.6 Hazardous decomposition products: No Data Available.

11 TOXICOLOGICAL INFORMATION

<table>
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<tr>
<th>Name of chemical</th>
<th>LD₅₀ Oral rat</th>
<th>LD₅₀ Dermal, rat</th>
<th>LC₅₀ Inhalation, rat, aerosol</th>
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<tr>
<td>Propylene Glycol Phenyl Ether (Glycol Ether PPh)</td>
<td>2000 mg/kg</td>
<td>2000 mg/kg</td>
<td>5.4 mg/L, 4 hr, saturated</td>
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</table>

11.1 Inhalation: No Data Available

11.2 Skin contact: Skin contact can cause moderate irritation.

11.3 Eye contact: Eye Contact may cause damage. Immediate first aid is required.

11.4 Ingestion: Immediately call a POISON CENTER 1 (800) 222-1222 or 911 for first aid instructions.

11.5 Specific effects: No specific effects are known.

This product does not contain any ingredient at 0.1% or greater that is designated by IARC, NTP, ACGIH, or OSHA as probable or suspected human carcinogens.

12 ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Components of Mixture</th>
<th>Aquatic Toxicity Fish</th>
<th>Aquatic Toxicity Invertebrates</th>
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<tbody>
<tr>
<td></td>
<td>LC₅₀</td>
<td>Species</td>
</tr>
</tbody>
</table>

Page 4 of 6
Propylene Glycol Phenyl Ether (Glycol Ether PPh)  280 mg/L  Pimphales promelas  370 mg/L  Daphnia magna

12.4 Mobility in soil: No Data Available
Results, PBT assessment: PBT/vPvB testing is not available as chemical safety assessment is not required.
Other adverse affects: No other adverse effects are known

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Dispose of waste and residues in accordance with local authority requirements. GHS P501-Dispose of contents/container according to local/state/regional/federal waste regulations.

14 TRANSPORT INFORMATION

This product is covered by international regulation of the transport of dangerous goods (IMDG, IATA).
US DOT: Not considered to be dangerous goods under transport regulations.

14.1 UN Number: Not classified as hazardous goods under transport regulations.
IMDG Sea Transport and IATA Air Transport: Not classified as hazardous goods under transport regulations.

14.2 UN proper shipping name: Not classified as hazardous goods under transport regulations.
14.3 Transport hazard class: Not applicable
14.4 Packing group: Not regulated
Packaging group: Not regulated

14.5 Environmental hazards
Marine pollutant: Not regulated.
Environmentally hazardous substance: Not applicable.

14.6 Special precautions for user: None known.

15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture.
This product contains chemicals that are listed by the following Right to Know states; New Jersey and Pennsylvania:
Propylene Glycol Phenyl Ether (Glycol Ether PPh) or (1-Phenoxypropan-2-ol), CAS No. 770-35-4
SARA Title III Section 302, This product does not contain any chemicals subject to minimum reporting requirements.
SARA Title III Section 311/312: Contains a component that is listed as acute health hazard, Glycol Ether PPh. SARA
Title III Section 313, this product does not contain any chemicals with known CAS numbers that exceed the
threshold reporting levels.

15.2 Chemical Safety Assessment:
This product is not considered to be hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.
For information on labeling go to section 2
There are no TSCA 12b chemicals in this product

16: OTHER INFORMATION
Before using, read Scofield’s Tech-Data Bulletin TD-1623 and the complete package label and this SDS and Warranty.
The user must be instructed in the proper work procedure and be familiar with the
contents of these instructions.
Wording of terms:
ACGIH  American Conference of Government Industrial Hygienists
CAS Number  Chemical Abstract Service, unique number for each chemical

WHMIS Category: None
WHMIS Signal Word: None
**CERCLA** Comprehensive Environmental Response, Compensation and Liability Act  
**EINECS** European Inventory of Existing Commercial Chemical Substances  
**GHS** Global Harmonization System, worldwide chemical safety program  
**LC$_{50}$** Lethal Concentration that has 50% mortality of population  
**LD$_{50}$** Lethal Dose that has 50% mortality of population  
**NFPA** National Fire Prevention Association  
**NTP** National Toxicology Program  
**OEL** Occupational Exposure Limit  
**OSHA** Occupational Safety and Health Act  
**PEL** Permissible Exposure Level  
**RCRA** Resource Conservation and Recovery Act  
**RE** Repeated Exposure  
**RQ** Reportable Quantity  
**SARA III** Superfund Amendments and Reauthorization Act  
**SDS** Safety Data Sheet (GHS replacement for MSDS)  
**SVHC** Substance of Very High Concern  
**SE** Single Exposure  

**STOT** Specific Target Organ Toxicity  
**TLV** Threshold Limit Value  
**TSCA** Toxic Substances Control Act  
**TWA** Time Weighted Average  
**PBT** Bioaccumulative, Persistent and Toxic vPvB  
**WHMIS** Workplace Hazardous Materials Information System (Canada)

<table>
<thead>
<tr>
<th>Hazardous Material Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health Hazard</strong></td>
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<tr>
<td><strong>Fire Hazard</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Reactivity Hazard</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Personal Protection</strong></td>
<td>see section 8</td>
</tr>
</tbody>
</table>

**NFPA 704**  
**Fire**  
**Health**  
**Reactivity**

**California Prop 65: Warning!** This product contains one or more chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.

**NFPA: 0 = lowest hazard, 4 = highest hazard**
The details in this document are based on our current knowledge and experience and are only for this product and only in regard to safety requirements.
SDS issue date: June 4, 2015

END OF SDS

LIMITED WARRANTY
Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.
SAFETY DATA SHEET

==SECTION 1 - IDENTIFICATION==

MANUFACTURER: L. M. SCOFIELD COMPANY
ADDRESS: 4155 SCOFIELD ROAD
ATLANTA, GA 30134
EMERGENCY PHONE: 1-800-424-9300
INFORMATION PHONE: (800) 800-9900
NAME OF PREPARER: Safety Director

==SECTION 2 - HAZARDS IDENTIFICATION==

PRODUCT NAME: SCOFIELD® Liquid Release SG 3612

HAZARD RISK CLASSIFICATION

SIGNAL WORD: DANGER
PICTOGRAM:
GHS07 - EXCLAMATION MARK  GHS08 - HEALTH HAZARD

HAZARD CLASS

| FLAMMABLE LIQUIDS | CATEGORY 4 |
| ACUTE TOXICITY | CATEGORY 4 INHALATION |
| SKIN CORROSION / IRRITATION | CATEGORY 2 |
| SERIOUS EYE DAMAGE / EYE IRRITATION | CATEGORY 2B |
| ASPIRATION HAZARD | CATEGORY 1 |

HAZARD STATEMENTS:

H227 Combustible liquid
H304 May be fatal if swallowed or enters airways
H315+H320 Causes skin and eye irritation
H332 Harmful if inhaled
H336 May cause drowsiness or dizziness

PRECAUTIONARY STATEMENTS:

PREVENTION:
P264 Wash hands and any exposed area thoroughly after handling.
P270 Do not eat, drink or smoke while using this product.
P271 Use only outdoors or in well-ventilated area.
P280 Wear protective impervious gloves/OSHA approved eye protection/face protection.

RESPONSE:
P301+P310 If swallowed: Immediately call a Poison Center/doctor.
P302+P352 If on skin: Wash with plenty of water.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.
SAFETY DATA SHEET

Date Revised: 8/3/15
Date Printed: 8/3/15

P321 Specific treatment (see on this label)
P331 Do NOT induce vomiting.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P370+P378 In case of fire: Use carbon dioxide (CO2), powder, alcoholresistant foam to extinguish.

STORAGE:
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

DISPOSAL:
P501 Store separately. Dispose of contents/container in accordance with local/regional/national/international regulations.

============== SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS =============

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS NUMBER</th>
<th>PERCENT</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aliphatic Petroleum Distillate</td>
<td>64742-47-8</td>
<td>90-100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300 PPM</td>
<td></td>
</tr>
<tr>
<td>Aliphatic Petroleum Distillates</td>
<td>64741-44-2</td>
<td>1-10</td>
<td></td>
<td>5 MG/M3</td>
<td>5 MG/M3</td>
</tr>
</tbody>
</table>

* Chemical(s) that are chronic health hazards. Refer to section 3 for further information.

PRIMARY ROUTES OF EXPOSURE:
Skin contact, eye contact, and inhalation.

EFFECTS OF ACUTE EXPOSURE:
EYES: Contact with eyes may cause irritation including burning, watering, and redness. SKIN: Contact may cause mild skin irritation including redness, burning, and drying and cracking of skin. Continued exposure may develop into dermatitis. Solvents can penetrate the skin and cause systematic effects similar to those under inhalation symptoms.
INHALATION: High vapor concentrations are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anesthesia, asthma, drowsiness, unconsciousness, and other central nervous system effects, and possibly death.
INGESTION: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Small amounts aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury.

CHRONIC HEALTH EFFECTS:
Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (Sometimes referred to as Solvent or Painter's Syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal. Chronic exposure may also cause damage to the respiratory system, lungs, eyes, skin, gastrointestinal tract, liver, spleen and kidneys. Repeated skin contact may cause persistent irritation or dermatitis.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
Conditions aggravated by exposure may include skin disorders, respiratory (asthma-like) disorders, and pre-existing liver or kidney conditions.

============== SECTION 4 - FIRST AID MEASURES ===============
SAFETY DATA SHEET

Date Revised: 8/3/15
Date Printed: 8/3/15

IF ON SKIN: Thoroughly wash exposed area with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use. If irritation develops and persists, seek medical attention. IF IN EYES: Flush with large amounts of water for 15 minutes, lifting upper and lower lids occasionally. If symptoms persist, seek medical attention.

If SWALLOWED: Do not induce vomiting. Immediately administer 1-2 glasses of water and contact a physician, hospital emergency room, or poison control center for further advice. Keep person warm, quiet and seek immediate medical attention. Aspiration of material into lungs can cause severe lung damage. VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL. INHALATION: Move affected individual to fresh air. If breathing is difficult, qualified personnel should administer oxygen. If breathing has stopped give artificial respiration. If respiratory symptoms develop or persist, seek medical attention.

== SECTION 5 - FIRE AND EXPLOSION HAZARD DATA ==

FLASH POINT: 147 F
FLASHING LIMITS IN AIR BY VOLUME - LOWER: 0.7
METHOD USED: TCC
UPPER: 9.3 EXTINGUISHING MEDIA:
Foam, CO2, or dry chemical is recommended. Water spray is recommended to cool or protect exposed materials or structures.

SPECIAL FIREFIGHTING PROCEDURES:
Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment. Isolate danger area, keep unauthorized personnel out. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen, exercise caution when using CO2 in confined areas.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Vapors may be ignited by heat, sparks, flames, or other sources of ignition. Vapors are heavier than air and may travel considerable distances to a source of ignition where they may cause a flashback or explosion. If container is not properly cooled, it can rupture in the presence of excessive heat.

== SECTION 6 - ACCIDENTAL RELEASE MEASURES ==

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Keep all sources of ignition and hot metal surfaces away from spill/release. Use explosion-proof non-sparking equipment. Stay upwind from area. Isolate danger and keep unauthorized personnel out. Stop source of release if possible with minimal risk. Wear appropriate protective equipment including respiratory protection. Prevent spill from entering sewers, storm drains, or any other unauthorized treatment drainage systems and natural waterways by diking ahead of the spill. Spilled material may be absorbed with an appropriate spill kit. Notify fire authorities and appropriate federal, state, and local agencies if required.

== SECTION 7 - HANDLING AND STORAGE ==

HANDLING INFORMATION:
Employees who come in contact with this material must be trained in accordance to 1910.1200 of the Hazard Communication Standard.

Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Static charge can accumulate by flow or agitation. Ignition can occur by static discharge. The use of explosion proof equipment is recommended and may be required. The use of respiratory protection is advised when concentrations exceed any established exposure limits and in confined spaces. Use good industrial and personal hygiene practice, wash thoroughly after handling, and do not wear contaminated clothing.

STORAGE INFORMATION:
Keep containers tightly closed. Use and store material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post "No smoking or open flame" sign. Store only in approved containers. Keep away from incompatible materials (see section 10). Protect containers against physical damage. Indoor storage should meet OSHA standards and appropriate fire codes.

OTHER PRECAUTIONS:
"Empty" containers retain residue, liquid and vapor, and may be dangerous. Do not cut, weld, pressurize, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause severe personal injury or death. All containers should be disposed of in an environmentally safe manner in accordance with all government regulations.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:
Engineering or administrative controls should be implemented to reduce exposure. A NIOSH/MSHA approved respirator with an organic vapor cartridge should be used under conditions where airborne concentrations are expected to exceed exposure limits (See Section 3). Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

VENTILATION:
If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used.

PROTECTIVE GLOVES:
Prevent prolonged or repeated contact by wearing gloves impervious to solvents and other appropriate protective clothing. Launder contaminated clothing before reuse.

EYE PROTECTION:
Wear safety glasses to reduce eye contact potential. Chemical safety goggles (ANSI Z87.1 or approved equivalent) are appropriate if splashing is likely. Eye washes must be available where eye contact can occur.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
A source of clean water should be available for flushing eyes and skin. Showers should be available if larger spills are possible.

WORK/HYGIENIC PRACTICES:
Efforts should be made to minimize contact and spills. Always wash hands before eating, drinking, or smoking. Clean up spills promptly. Follow OSHA and company guidelines.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
COLOR: Various colors
ODOR: Hydrocarbon odor
SPECIFIC GRAVITY (H2O=1): .79
BOILING RANGE: 363 F
COATING V.O.C.: 783 g/l (6.54 lb/gl)

SECTION 10 - STABILITY AND REACTIVITY DATA

STABILITY:
Stable under normal conditions and handling.

CONDITIONS TO AVOID:
All possible sources of ignition.

INCOMPATIBILITY (MATERIALS TO AVOID):
Avoid exposure to strong oxidizing agents and reducing agents.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:
Combustion may liberate toxic byproducts such as carbon dioxide, carbon monoxide, various oxides of carbon and nitrogen.

HAZARDOUS POLYMERIZATION:
Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

SENSITIZATION:
None known.

CARCINOGENICITY:
There is no data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.

REPRODUCTIVE TOXICITY:
There is no data available to indicate any components present at greater than 0.1% may present reproductive toxicity.

TERATOGENICITY (BIRTH DEFECTS):
There is no data available to indicate any components present at greater than 0.1% may cause birth defects.

**MUTAGENICITY:**
There is no data to indicate that any component present at greater than 0.1% will alter DNA.

==================== SECTION 12 - ECOLOGICAL INFORMATION ====================

**ENVIRONMENTAL DATA:**
Although no information is available for this specific product mixture, individual components may by themselves may have ecological affects.

==================== SECTION 13 - DISPOSAL CONSIDERATIONS ====================
This product is considered a RCRA hazardous waste due to the characteristic(s) of D001 (ignitability). Waste is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers empty prior to discarding. Container rinsate could be considered a RCRA hazardous waste and must be discarded in compliance with all applicable regulations. Larger empty containers, such as drums, should be returned to a professional drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

==================== SECTION 14 - TRANSPORT INFORMATION ====================
**SHIPPING NAME:**
UN1263, Paint Related Material, 3, III

==================== SECTION 15 - REGULATORY INFORMATION ====================
All ingredients of this product are listed, or are excluded from listing, on the US Toxic Substances Control Act (TSCA) chemical substance inventory.

This product does not contain a chemical subject to the reporting requirements of SARA Title III, Section 313 (40CFR 372) above de minimis concentrations.

**STATE SPECIFIC REQUIREMENTS:**
This product does not contain a chemical known to the state of California to cause cancer, birth defects or reproductive harm, subject to the requirements of California Proposition 65.

<table>
<thead>
<tr>
<th>STATE LISTED COMPONENTS</th>
<th>CAS NUMBER</th>
<th>STATE CODE</th>
</tr>
</thead>
</table>

==================== SECTION 16 - OTHER INFORMATION ====================
**REVISION DATE:** 08/03/15

**HMIS CODES:** H 2  F 2  R 0  P I
I. PRODUCT AND COMPANY IDENTIFICATION

Company: Simpson Strong-Tie Company, Inc.
Address: 5956 W. Las Positas Blvd.
Pleasanton, CA 94588

Product Name: Cartridges: SET-XP10, SET-XP22, SET-XP56, SET-XP650
Single Packaging – SET-XP10KT: SETXP050R
SETXPR

Product Description: High-Strength Anchoring Adhesive for Cracked and Uncracked Concrete – Epoxy Resin

Emergency Contact No.: 1-800-535-5053 USA
1-352-323-3500 International

Date Prepared or Revised: August 2012
Supersedes: March 2012
For most current MSDS, please visit our website at www.strongtie.com

II. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Names</th>
<th>CAS Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BisphenolA/Epichlorohydrin (Epoxy Resin)</td>
<td>25068-38-6</td>
</tr>
<tr>
<td>N-butyl glycidyl ether</td>
<td>2426-08-06</td>
</tr>
<tr>
<td>Silica, crystalline quartz</td>
<td>14808-60-7</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>1317-80-2</td>
</tr>
</tbody>
</table>

The remaining ingredients are designated as “trade secret”.

III. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW
Non-corrosive.
May cause eye and skin irritation.
May cause skin sensitization.

POTENTIAL HEALTH EFFECTS

ACUTE

Eye Contact: May cause eye irritation, swelling, tearing, redness or cornea damage.

Skin Contact: Moderate irritation. May cause skin sensitization, evidenced by rashes and hives.

Inhalation: Moderate irritation to the nose and respiratory tract. May cause Central Nervous System depression, evidenced by headache, dizziness, and nausea.

Ingestion: May cause irritation to the gastrointestinal tract. May cause Central Nervous System depression or other systemic effects.

Systemic Effects: Lungs, eyes, and skin.

IV. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. If redness, burning, blurred vision, or swelling persists, CONSULT A PHYSICIAN.

Skin Contact: Remove product and immediately wash affected area with soap and water. Do not apply greases or ointments. Remove contaminated clothing. Wash clothing with soap and water before reuse. If redness, burning, or swelling persists, CONSULT A PHYSICIAN.

Ingestion: DO NOT INDUCE VOMITING. Never administer anything by mouth to an unconscious person. Rinse out mouth with water, then drink sips of water to remove taste from mouth. CONSULT A PHYSICIAN if vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Inhalation: Remove patient to fresh air. If patient continues to experience difficulty breathing, CONSULT A PHYSICIAN.
V. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Water fog, carbon dioxide or dry chemical, aqueous foam.

**Fire And Explosion Hazard:** Hazardous decomposition products may occur when materials polymerize at temperatures above 500°F. Do not allow run-off from fire fighting to enter drains or water courses.

**Fire Fighting Equipment and Procedures:** Wear full protective clothing and self-contained breathing apparatus for fire fighting. Isolate fuel supply from fire. Clear fire area of all non-emergency personnel. Use water spray to cool fire-exposed surfaces and containers.

VI. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use cautious judgment when cleaning up spill. Shut off leaks, if possible without personal risk. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

**Environmental Precautions:** Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils.

**Clean-up Methods:**
- **Small spills:** Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.
- **Large spills:** Approach suspected leak areas with caution. Create a dike or trench to contain material. Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.

**Additional Information:** Notify authorities if any exposures to the general public or environment occur or are likely to occur. Dispose in accordance with federal, state, and local regulations.

VII. STORAGE AND HANDLING

**Storage:** Keep away from: acids, oxidizers, heat, or flames. Keep in cool, dry, well-ventilated area in closed containers. Protect containers from physical damage.

**Handling:** To prevent skin and eye contact under the foreseeable conditions of use, wear appropriate protective clothing and safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Avoid breathing fumes. Handle in a well-ventilated work area.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Protective Measure:** Wear appropriate personal protective equipment

**Eye Protection:** Avoid contact with eyes. Wear chemical splash goggles or safety glasses with side shield.

**Hand Protection:** Wear chemical-resistant gloves such as: Nitrile, neoprene, butyl

**Skin and Body Protection:** Wear chemical-resistant gloves and other clothing as required to minimize contact.

**Respirator Protection:** Not required for properly ventilated areas.

**Exposure Limits:**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BisPhenolA/Epichlorohydrin (Epoxy Resin)</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>N-butyl glycidyl ether</td>
<td>25 ppm</td>
<td>25 ppm</td>
</tr>
<tr>
<td>Silica, crystalline quartz (airborne particulates of respirable size)</td>
<td>0.1 mg/m³</td>
<td>0.4 mg/m³</td>
</tr>
<tr>
<td>Titanium dioxide (total dust)</td>
<td>10 mg/m³</td>
<td>15 mg/m³</td>
</tr>
</tbody>
</table>

IX. PHYSICAL AND CHEMICAL PROPERTIES

**Form:** Paste

**Color:** White

**Odor:** Sweet

**Vapor Pressure:** Not Volatile

**Boiling Point:** >500°F (> 260°C)

**Freezing Point:** N/E

**Flash Point:** >250°F (Open Cup)

**Specific Gravity:** 1.21 @ 72°F

**Solubility In Water:** Insoluble

X. REACTIVITY DATA

**Stability:** Stable under normal storage conditions.

**Conditions To Avoid:** Incompatible chemicals. high heat and open flame
Materials To Avoid: Oxidizing agents, acids, organic bases, and amines.
Hazardous Decomposition Products: Combustion may produce carbon monoxide, carbon dioxide, aldehydes, acids and other organic substances.
Hazardous Polymerization: Will not occur.

XI. TOXICOLOGICAL PROPERTIES
Acute Oral (LD₅₀, Rat): Non toxic
Acute Dermal (LD₅₀, Rabbit): N/E
Acute Inhalation (LC₅₀, Rat): N/E
Chronic Health Hazard: The Diglycidyl Ether of Bisphenol A has shown weak carcinogenicity in 2-year mice bioassays. This material has shown activity in-vitro microbial mutagenicity screening and has produced chromosomal aberrations in cultured rat liver cells. No activity when tested by vivo mutagenicity assays.

XII. DISPOSAL CONSIDERATIONS
Waste From Residues / Unused Products: This material is not a hazardous waste by RCRA criteria (40 CFR 261). Dispose of container and unused contents in accordance with federal, state, and local requirements.

XIII. TRANSPORTATION
DOT: Not Regulated For Transport
ICAO/IATA:
Basic Shipping Requirements: UN3082
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, n.o.s. (Bisphenol-A Epichlorohydrin resin)
Hazard Class: 9
Packing Group: III
IMO:
Basic Shipping Requirements: UN3082
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, n.o.s. (Bisphenol-A Epichlorohydrin resin), Marine Pollutant
Hazard Class: 9
Packing Group: III

XIV. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Country</th>
<th>Regulatory List</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>TSCA</td>
</tr>
</tbody>
</table>

EPA SARA Title III Section 312 (40 CFR 370) Hazardous Classification: Acute/Chronic Health Hazard.
EPA SARA Title III Section 313 (40 CFR 372) Component(s) above ‘de minimus’ level: None.
US. California “Safe Drinking Water and Toxic Enforcement Act” (Proposition 65): This product contains small traces of the following chemicals that are known to the State of California to cause cancer and/or reproductive toxicity and other har

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylglycidyl ether*</td>
<td>ACGIH</td>
<td>Trace</td>
<td>Carcinogenic</td>
</tr>
<tr>
<td>Epichlorohydrin*</td>
<td>ACGIH</td>
<td>Trace</td>
<td>Carcinogenic</td>
</tr>
</tbody>
</table>

* May be absorbed through skin.

XV. OTHER INFORMATION
HMIS RATING

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

N/E – Not Established

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V. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, fog or foam, carbon dioxide, dry chemical, limestone powder.

Fire And Explosion Hazard: Irritating and toxic fumes may be produced at high temperature. In a fire, may produce carbon monoxide, toxic nitrogen oxide, ammonia, and carbon dioxide. Use of water may result in the formation of very toxic aqueous solution. Do not allow run-off from fire fighting to enter drains or water courses.

Fire Fighting Equipment and Procedures: Wear full protective clothing and self-contained breathing apparatus for fire fighting. Isolate fuel supply from fire. Clear fire area of all non-emergency personnel.

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use cautious judgment when cleaning up spill. Shut off leaks, if possible without personal risk. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

Environmental Precautions: Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils.

Clean-up Methods: Small spills: Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal. Large spills: Approach suspected leak areas with caution. Create a dike or trench to contain material. Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.

Additional Information: Notify authorities if any exposures to the general public or environment occur or are likely to occur. Dispose in accordance with federal, state, and local regulations.

VII. STORAGE AND HANDLING

Storage: Keep away from: acids, oxidizers, heat, or flames. Keep in cool, dry, well-ventilated area in closed containers. Protect containers from physical damage.

Handling: To prevent skin and eye contact under the foreseeable conditions of use, wear appropriate protective clothing and safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Avoid breathing fumes. Handle in a well ventilated work area.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

Protective Measure: Wear appropriate personal protective equipment.

Eye Protection: Avoid contact with eyes. Wear chemical splash goggles or safety glasses with side shield.

Hand Protection: Wear chemical-resistant gloves such as: Nitrile, neoprene, butyl.

Skin and Body Protection: Wear chemical-resistant gloves and other clothing as required to minimize contact.

Respirator Protection: Not required for properly ventilated areas.

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Names</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol (Benzenol)</td>
<td>5 ppm</td>
<td>5 ppm</td>
</tr>
<tr>
<td>Benzene-1, 3-Dimethanamine</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td>Silica, crystalline quartz (airborne particulates of respirable size)</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

IX. PHYSICAL PROPERTIES

Form: Paste
Color: Dark Green
Odor: Ammonia
Boiling Point: N/E
Solubility In Water: Slight

Freezing Point: N/E
Vapor Pressure: N/E
Flash Point: 262°F (128°C)
Specific Gravity: 1.59 @ 72°F
X. REACTIVITY DATA
   Stability: Stable under normal storage conditions.
   Conditions To Avoid: Incompatible chemicals, high heat, and open flame.
   Materials To Avoid: Oxidizing agents and acids.
   Hazardous Decomposition: Combustion may produce carbon monoxide, carbon dioxide, and nitrogen oxide, and other organic substances.
   Products: Will not occur.

XI. TOXICOLOGICAL PROPERTIES
   Acute Oral (LD₅₀, Rat): Non Toxic
   Acute Dermal (LD₅₀, Rabbit): Non Toxic
   Acute Inhalation (LC₅₀, Rat): N/E
   Chronic Health Hazard: Components of this product are not listed as carcinogens in concentrations of 0.1% or greater. Repeated or prolonged exposure may cause allergic reaction and/or limited sensitization.

XII. DISPOSAL CONSIDERATIONS
   Waste From Residues / Unused Products: Dispose of container and unused contents in accordance with federal, state, and local requirements.

XIII. TRANSPORTATION
   US DOT: Cartridges: Consumer Commodity, ORM-D
   Single Packaging: UN2735, Amines, Liquid, Corrosive, n.o.s. (Benzene-1, 3-Dimethaneamine), 8, II
   IATA: UN2735, Amines, Liquid, Corrosive, n.o.s. (Benzene-1, 3-Dimethaneamine), 8, II
   IMO: UN2735, Amines, Liquid, Corrosive, n.o.s. (Benzene-1, 3-Dimethaneamine), 8, II

XIV. REGULATORY INFORMATION
<table>
<thead>
<tr>
<th>Country</th>
<th>Regulatory List</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>TSCA</td>
</tr>
</tbody>
</table>

EPA SARA Title III Section 312 (40 CFR 370) Hazardous Classification:
Acute/Chronic Health Hazard.

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above ‘de minimus’ level:
Phenol.

US. California “Safe Drinking Water and Toxic Enforcement Act” (Proposition 65): This product contains small traces of the following chemicals that are known to the State of California to cause cancer and/or reproductive toxicity and other harm.
### Component Distribution and Regulatory Information

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Black</td>
<td>ACGIH</td>
<td>Trace</td>
<td>Carcinogenic</td>
</tr>
<tr>
<td>Silica Quartz</td>
<td>ACGIH</td>
<td>Trace</td>
<td>Carcinogenic</td>
</tr>
</tbody>
</table>

### XV. OTHER INFORMATION

**HMIS RATING**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

N/E – Not Established

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Trade name: VALVOLINE™ AW 46 HYDRAULIC OIL

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet
Ashland
P.O. Box 2219
Columbus, OH 43216
United States of America

EHS Customer Requests@ashland.com

Emergency telephone number
1-800-ASHLAND (1-800-274-5263)

Regulatory Information Number
1-800-325-3751

Product Information
614-790-3333

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS Label element
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012). Other hazards None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
Chemical nature: Defatter
Chemical nature: Static Accumulator

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (%)</th>
</tr>
</thead>
</table>

/ 12
SECTION 4. FIRST AID MEASURES

General advice

If inhaled

: No hazards which require special first aid measures.
: If breathed in, move person into fresh air.
  If unconscious place in recovery position and seek medical advice.
  If symptoms persist, call a physician.

In case of skin contact

: First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact

: Remove contact lenses.
  Protect unharmed eye.

If swallowed

: Do not give milk or alcoholic beverages.
  Never give anything by mouth to an unconscious person.
  If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

: Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.
  Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea)
  irritation (nose, throat, airways)

Notes to physician
SAFETY DATA SHEET

VALVOLINE™ AW 46 HYDRAULIC OIL

VV043

: No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Water spray
Foam

2
Carbon dioxide (CO2)
Dry chemical

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : carbon dioxide and carbon monoxide
Hydrocarbons

Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information : Standard procedure for chemical fires.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions : Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Keep in suitable, closed containers for disposal.
Other information: Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.

Conditions for safe storage: Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid: No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION Components

with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based</td>
<td>72623-87-1</td>
<td>REL</td>
<td>5 mg/m³ Mist.</td>
<td>NIOSH/GUIDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>10 mg/m³ Mist.</td>
<td>NIOSH/GUIDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>5 mg/m³ Mist.</td>
<td>OSHA_TRANS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³ Mist.</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>10 mg/m³ Mist.</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.2 mg/m³ Inhalable fraction.</td>
<td>ACGIHLIS_P</td>
</tr>
</tbody>
</table>

Engineering measures: General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.
Personal protective equipment
Respiratory protection : No personal respiratory protective equipment normally required.

Eye protection : Not required under normal conditions of use. Wear splashproof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid
Odour : No data available
Odour Threshold : No data available
pH : No data available
Melting point/freezing point : No data available
Boiling point/boiling range
Flash point
Evaporation rate
Flammability (solid, gas)
Flammability (liquids)
Flammability (liquids)
Upper explosion limit

Lower explosion limit
Vapour pressure
Relative vapour density
Relative density
Density
Solubility(ies)
Water solubility
Solubility in other solvents
Partition coefficient: noctanol/water

Thermal decomposition

Viscosity
  Viscosity, dynamic
  Viscosity, kinematic

Oxidizing properties

Calculated Explosive Limit
: 1 %(V)
Calculated Explosive Limit
: 0.0133333 hPa (21.11 °C)
Calculated Vapor Pressure

: > 425 °F / 218 °C
  (1013.33 hPa)
: No data available

: > 390 °F / > 199 °C
  Method: Cleveland open cup
: No data available

: 1
  Ethyl Ether
: No data available

: No data available

: Static Accumulating liquid
: 42 - 50 mm2/s (40 °C)

: 6 %(V)
: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
: No decomposition if stored and applied as directed.

Chemical stability
: Stable under recommended storage conditions.

Possibility of hazardous reactions
: Product will not undergo hazardous polymerization.

Incompatible materials
: Strong oxidizing agents
Hazardous decomposition products  No hazardous decomposition products are known.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure:
- Inhalation
- Skin contact
- Eye Contact
- Ingestion

**Acute toxicity**
Not classified based on available information.

**Components:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Acute oral toxicity: LD 50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity:
- LC50 (Rat): > 5.58 mg/l
- Exposure time: 4 h
- Test atmosphere: dust/mist
- Assessment: Not classified as acutely toxic by inhalation under GHS.
- Remarks: No mortality observed at this dose.

Acute dermal toxicity: LD 50 (Rabbit): > 5,000 mg/kg
- Remarks: No mortality observed at this dose.

**Skin corrosion/irritation**
Not classified based on available information.

**Product:**
Result: Repeated exposure may cause skin dryness or cracking.

**Components:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Species: Rabbit
Result: Not irritating to skin

**Serious eye damage/eye irritation**
Not classified based on available information.

**Product:**
Remarks: Unlikely to cause eye irritation or injury.

**Components:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Species: Rabbit
Result: Not irritating to eyes

Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information. **Components:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Test Type: Buehler Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.

Germ cell mutagenicity
Not classified based on available information.
Carcinogenicity
Not classified based on available information.
Reproductive toxicity
Not classified based on available information.
STOT - single exposure
Not classified based on available information.
STOT - repeated exposure
Not classified based on available information.
Aspiration toxicity
Not classified based on available information.
**Product:**
No aspiration toxicity classification

**Components:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based: May be fatal if swallowed and enters airways.

Further information
**Product:**
Remarks: No data available

Carcinogenicity:
**IARC**
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<table>
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<th>SAFETY DATA SHEET</th>
<th>Revision Date: 05/22/2015</th>
</tr>
</thead>
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<tr>
<td></td>
<td>SDS Number: R0067073</td>
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<tr>
<td>VALVOLINE™ AW 46 HYDRAULIC OIL</td>
<td>Version: 1.0</td>
</tr>
<tr>
<td>VV043</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Toxicity to fish: LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l
  Exposure time: 96 h
  Test Type: static test
  Test substance: WAF
  Method: OECD Test Guideline 203
  Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates: EL50 (Daphnia magna (Water flea)): > 10,000 mg/l
  Exposure time: 48 h
  Test Type: static test
  Test substance: WAF
  Method: OECD Test Guideline 202

Toxicity to algae: NOEL (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
  End point: Growth inhibition
  Exposure time: 72 h
  Test Type: static test
  Test substance: WAF
  Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity): NOELR (Oncorhynchus mykiss (rainbow trout)): Calculated >= 1,000 mg/l
  Exposure time: 14 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEL (Daphnia (water flea)): 10 mg/l
  Exposure time: 21 d
  Test substance: WAF
  Method: OECD Test Guideline 211

Persistence and degradability

Components:
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Biodegradability: Result: Not readily biodegradable.
  Biodegradation: 2 - 4 %
  Exposure time: 28 d
  Method: OECD Test Guideline 301B
Bioaccumulative potential

Components:
No data available

Mobility in soil
Components:
No data available

Other adverse effects
No data available

Product:
Additional ecological : No data available information

Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
General advice : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

<table>
<thead>
<tr>
<th>ID NUMBER</th>
<th>PROPER SHIPPING NAME</th>
<th>*HAZARD CLASS</th>
<th>SUBSIDIARY HAZARDS</th>
<th>PACKING GROUP</th>
<th>MARINE POLLUTANT / LTD. QTY.</th>
</tr>
</thead>
</table>

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods
**INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO**
Not dangerous goods

**INTERNATIONAL MARITIME DANGEROUS GOODS**
Not dangerous goods

**TRANSPORT CANADA - INLAND WATERWAYS**
Not dangerous goods

**TRANSPORT CANADA - RAIL**
Not dangerous goods

**TRANSPORT CANADA - ROAD**
Not dangerous goods

**U.S. DOT - INLAND WATERWAYS**
Not dangerous goods

**U.S. DOT - RAIL**
Not dangerous goods

**U.S. DOT - ROAD**
Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID*

| Marine pollutant | no |

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.
SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know
HEAVY PARAFFINIC DISTILLATE 64742-54-7 90.00 - 100.00 %

New Jersey Right To Know
HEAVY PARAFFINIC DISTILLATE 64742-54-7 90.00 - 100.00 %
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based 72623-87-1 1.00 - 5.00 %

California Prop 65 : Proposition 65 warnings are not required for this product based on the results of a risk assessment.

The components of this product are reported in the following inventories:
TSCA : On TSCA Inventory
DSL : All components of this product are on the Canadian DSL.
AUSTR : On the inventory, or in compliance with the inventory
ENCS : On the inventory, or in compliance with the inventory
KECL : On the inventory, or in compliance with the inventory
PICCS : On the inventory, or in compliance with the inventory
IECSC : On the inventory, or in compliance with the inventory

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECL (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION
Further information
Revision Date: 05/22/2015

<table>
<thead>
<tr>
<th>NFPA:</th>
<th>HMIS III:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>HEALTH</td>
</tr>
<tr>
<td>Indicability</td>
<td>FLAMMABILITY</td>
</tr>
</tbody>
</table>

Health: 1
Special hazard: 0

0 = not significant, 1 = Slight,
24 = Moderate, 3 = * = ChronicHigh

NFPA Flammable and Combustible Liquids Classification
Combustible Liquid Class III B
Full text of H-statements referred to under sections 2 and 3.

Sources of key data used to compile the Safety Data Sheet
Ashland internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet:
ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).

ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent, Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL: Short-term exposure limit
STOT: Specific Target Organ Toxicity
TLV: Threshold Limit Value
TWA: Time-weighted average
vPvB: Very Persistent and Very Bioaccumulative
WEL: Workplace Exposure Level

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
DOT: Department of Transportation
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC: Hazardous Materials Information Review Commission
HMIS: Hazardous Materials Identification System
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
PMRA: Health Canada Pest Management Regulatory Agency
RTK: Right to Know
WHMIS: Workplace Hazardous Materials Information System


SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Trade name: Synpower™ SYNPOWER 10W30 4/5 L VALUE PKG
SYNTHETIC MOTOR OIL

Recommended use of the chemical and restrictions on use
SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS Label element
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012). Other hazards None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Defatter

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzenesulfonic acid, C10-60alkyl derivs., sodium salts</td>
<td>90194-32-4</td>
<td>Eye Irrit. 2A; H319</td>
<td>6.22</td>
</tr>
</tbody>
</table>
**SECTION 4. FIRST AID MEASURES**

General advice: No hazards which require special first aid measures.

If inhaled: If breathed in, move person into fresh air.
If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact: First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact: Remove contact lenses.
Protect unharmed eye.

If swallowed: Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed: No symptoms known or expected.

Notes to physician: No hazards which require special first aid measures.

**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media: Use extinguishing measures that are appropriate to local
Specific hazards during firefighting: Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: carbon dioxide and carbon monoxide, Hydrocarbons

Specific extinguishing methods: Product is compatible with standard fire-fighting agents.

Further information: Standard procedure for chemical fires.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective: Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions: Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.
Other information: Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.

Conditions for safe storage: Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid: No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Engineering measures: General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection: No personal respiratory protective equipment normally required.

Eye protection: Not required under normal conditions of use. Wear splash-
proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection: Wear as appropriate:
- Safety shoes
- Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures: General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: liquid

Colour: amber

Odour: No data available

Odour Threshold: No data available

pH: No data available

Melting point/freezing point: No data available

Boiling point/boiling range: 662 °F / 350 °C
(1,013.333333 hPa)
Calculated Phase Transition Liquid/Gas

Flash point: > 390 °F / > 199 °C
Method: Cleveland open cup

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper explosion limit: No data available

Lower explosion limit: No data available

Vapour pressure: 0.1333333 hPa (20 °C)
Calculated Vapor Pressure

Relative vapour density: No data available
Relative density : No data available

Density : 0.8555 g/cm³

Solubility(ies)
   Water solubility : negligible
   Solubility in other solvents : No data available

Partition coefficient: 
   octanol/water : No data available

Thermal decomposition : No data available

Viscosity
   Viscosity, dynamic : No data available
   Viscosity, kinematic : ca. 70 mm²/s (40 °C)

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY
Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
Incompatible materials: Strong oxidizing agents

Hazardous decomposition products: No hazardous decomposition products are known.

### SECTION 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure:**
- Inhalation
- Skin contact
- Eye Contact
- Ingestion

**Acute toxicity**
Not classified based on available information.

**Skin corrosion/irritation**
Not classified based on available information.

**Product:**
Result: Repeated exposure may cause skin dryness or cracking.

**Components:**
Benzenesulfonic acid, C10-60-alkyl derivs., sodium salts:
Result: Not irritating to skin

**Serious eye damage/eye irritation**
Not classified based on available information.

**Product:**
Remarks: Unlikely to cause eye irritation or injury.

**Components:**
Benzenesulfonic acid, C10-60-alkyl derivs., sodium salts:
Result: Irritating to eyes
Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Product:
No aspiration toxicity classification

Further information
Product:
Remarks: No data available

Carcinogenicity:
IARC
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available
Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
No data available

Product:
Additional ecological : No data available information

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
General advice : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

<table>
<thead>
<tr>
<th>ID NUMBER</th>
<th>PROPER SHIPPING NAME</th>
<th>*HAZARD CLASS</th>
<th>SUBSIDIARY HAZARDS</th>
<th>PACKING GROUP</th>
<th>MARINE POLLUTANT / LTD. QTY.</th>
</tr>
</thead>
</table>

U.S. DOT - ROAD
Not dangerous goods

U.S. DOT - RAIL
Not dangerous goods

U.S. DOT - INLAND WATERWAYS
Not dangerous goods

TRANSPORT CANADA - ROAD

9 / 11
<table>
<thead>
<tr>
<th><strong>TRANSPORT CANADA - RAIL</strong></th>
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</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th><strong>TRANSPORT CANADA - INLAND WATERWAYS</strong></th>
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<table>
<thead>
<tr>
<th><strong>INTERNATIONAL MARITIME DANGEROUS GOODS</strong></th>
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<table>
<thead>
<tr>
<th><strong>INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO</strong></th>
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<tr>
<th><strong>INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER</strong></th>
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<tr>
<th><strong>MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES</strong></th>
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</thead>
<tbody>
<tr>
<td>Not dangerous goods</td>
<td></td>
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</tbody>
</table>

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

<table>
<thead>
<tr>
<th>Marine pollutant</th>
<th>no</th>
<th></th>
</tr>
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</table>

**SAFETY DATA SHEET**

**Synpower™ SYNPOWER 10W30 4/5 L VALUE PKG SYNTHETIC MOTOR OIL**

**Version:** 1.0
Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with Component(s) SARA 313 known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROTREATED HEAVY PARAFFINIC BASE OIL</td>
<td>64742-54-7</td>
<td>90.00 - 100.00 %</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-60-alkyl derivs., sodium salts</td>
<td>90194-32-4</td>
<td>5.00 - 10.00 %</td>
</tr>
<tr>
<td>HEAVY PARAFFINIC DISTILLATE</td>
<td>64742-54-7</td>
<td>5.00 - 10.00 %</td>
</tr>
</tbody>
</table>

New Jersey Right To Know

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROTREATED HEAVY PARAFFINIC BASE OIL</td>
<td>64742-54-7</td>
<td>90.00 - 100.00 %</td>
</tr>
<tr>
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<td>90194-32-4</td>
<td>5.00 - 10.00 %</td>
</tr>
<tr>
<td>HEAVY PARAFFINIC DISTILLATE</td>
<td>64742-54-7</td>
<td>5.00 - 10.00 %</td>
</tr>
</tbody>
</table>
LUBRICANT ADDITIVE  Not Assigned  1.00 - 5.00 %

POLYOLEFIN AMIDE ALKENAMINE  Not Assigned  1.00 - 5.00 %

California Prop 65
Proposition 65 warnings are not required for this product based on the results of a risk assessment.

The components of this product are reported in the following inventories:

TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL.

AUSTRI: On the inventory, or in compliance with the inventory

NZIOC: Not in compliance with the inventory

ENCS: Not in compliance with the inventory

KECL: On the inventory, or in compliance with the inventory

PICCS: On the inventory, or in compliance with the inventory

IECSC: q (quantity restricted)

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)
### SECTION 16. OTHER INFORMATION

**Further information**  
Revision Date: 05/21/2015

<table>
<thead>
<tr>
<th>NFPA:</th>
<th>HMIS III:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td><strong>HEALTH</strong> 1</td>
</tr>
<tr>
<td>Health 1</td>
<td>FLAMMABILITY 1</td>
</tr>
<tr>
<td>Special hazard.</td>
<td>PHYSICAL HAZARD 0</td>
</tr>
</tbody>
</table>

0 = not significant, 1 = Slight, 24 = Moderate, Extreme, 3 = * = Chronic

**NFPA Flammable and Combustible Liquids Classification**  
Combustible Liquid Class III-B

**Full text of H-Statements referred to under sections 2 and 3.**  
H319 Causes serious eye irritation.

Sources of key data used to compile the Safety Data Sheet  
Ashland internal data including own and sponsored test reports  
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).
List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet:
ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).
ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent, Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Trade name: Valvoline™ GM MULTIPURPOSE GREASE

Recommended use of the chemical and restrictions on use

<table>
<thead>
<tr>
<th>Details of the supplier of the safety data sheet</th>
<th>Emergency telephone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashland</td>
<td>1-800-ASHLAND (1-800-274-5263)</td>
</tr>
<tr>
<td>P.O. Box 2219, Columbus, OH 43216, USA</td>
<td></td>
</tr>
<tr>
<td>EHS Customer <a href="mailto:Requests@ashland.com">Requests@ashland.com</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regulatory Information Number</th>
<th>Product Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-800-325-3751</td>
<td>614-790-3333</td>
</tr>
</tbody>
</table>

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS Label element
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012). Other hazards None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
Chemical nature: Defatter

<table>
<thead>
<tr>
<th>Hazardous components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
</tr>
<tr>
<td>----------------</td>
</tr>
</tbody>
</table>

15 / 11
<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Hazards</th>
<th>Log 12/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (Petroleum), Solvent-Dewaxed Heavy Paraffinic</td>
<td>64742-65-0</td>
<td>Asp. Tox. 1; H304</td>
<td>74.99</td>
</tr>
<tr>
<td>Asphalt</td>
<td>8052-42-4</td>
<td>Not a hazardous</td>
<td>24.99</td>
</tr>
<tr>
<td>Substance or Mixture</td>
<td>UN No.</td>
<td>UN Classification</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>--------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA</td>
<td>64742-52-5</td>
<td>Not a hazardous substance or mixture.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4. FIRST AID MEASURES

General advice: No hazards which require special first aid measures.

If inhaled: If breathed in, move person into fresh air. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact: First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact: Remove contact lenses. Protect unharmed eye.

If swallowed: Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed: Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways)

Notes to physician: No hazards which require special first aid measures.
Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Specific hazards during firefighting: Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: carbon dioxide and carbon monoxide
sulfur oxides Hydrocarbons
Aldehydes
Ketones
Nitrogen oxides (NOx)
Sulphur oxides

Specific extinguishing methods:
Product is compatible with standard fire-fighting agents.

Further information: Standard procedure for chemical fires.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES
Personal precautions, protective: Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions: Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

Other information: Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE
Advice on safe handling: Smoking, eating and drinking should be prohibited in the application area.

For personal protection see section 8.

3

Conditions for safe storage: Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid: No materials to be especially mentioned.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC</td>
<td>64742-65-0</td>
<td>PEL</td>
<td>500 ppm 2,000 mg/m3</td>
<td>OSHA_TRANS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REL</td>
<td>5 mg/m3 Mist.</td>
<td>NIOSH/GUID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>10 mg/m3 Mist.</td>
<td>NIOSH/GUID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>5 mg/m3 Mist.</td>
<td>OSHA_TRANS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m3 Mist.</td>
<td>Z1A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>400 ppm 1,600 mg/m3</td>
<td>Z1A</td>
</tr>
<tr>
<td>ASPHALT</td>
<td>8052-42-4</td>
<td>TWA</td>
<td>0.5 mg/m3 Inhalable fraction. (as benzene solubles)</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ceil_Time</td>
<td>5 mg/m3 Fume.</td>
<td>NIOSH/GUID</td>
</tr>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA</td>
<td>64742-52-5</td>
<td>PEL</td>
<td>500 ppm 2,000 mg/m3</td>
<td>OSHA_TRANS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REL</td>
<td>5 mg/m3 Mist.</td>
<td>NIOSH/GUID</td>
</tr>
</tbody>
</table>
**Engineering measures**: General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

### Personal protective equipment

**Respiratory protection**: No personal respiratory protective equipment normally required.

**Eye protection**: Not required under normal conditions of use. Wear splashproof safety goggles if material could be misted or splashed into eyes.

**Skin and body protection**: Wear as appropriate:
- Safety shoes
- Wear resistant gloves (consult your safety equipment supplier).

**Hygiene measures**: General industrial hygiene practice.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>gel</td>
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<tr>
<td>Physical state</td>
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<td>Colour</td>
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<td>Odour</td>
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<td>Odour Threshold</td>
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<tr>
<td>pH</td>
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</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Flash point</td>
<td>640 °F / 338 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
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<tr>
<td>Flammability (solid, gas)</td>
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<tr>
<td>Upper explosion limit</td>
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</tr>
<tr>
<td>Lower explosion limit</td>
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<tr>
<td>Vapour pressure</td>
<td>&lt; 0.01 mmHg (20 °C)</td>
</tr>
<tr>
<td>Relative vapour density</td>
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<tr>
<td>Relative density</td>
<td>0.95 (15.6 °C)</td>
</tr>
<tr>
<td>Density</td>
<td>0.90 g/cm³ (20 °C)</td>
</tr>
<tr>
<td>Solubility (ies)</td>
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<tr>
<td>Water solubility</td>
<td>negligible</td>
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<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
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<tr>
<td>Partition coefficient:</td>
<td>No data available</td>
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<tr>
<td>noctanol/water</td>
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</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 315 °C</td>
</tr>
<tr>
<td>Thermal decomposition</td>
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</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
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</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>&gt; 20.5 mm²/s (40 °C)</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SECTION 10. STABILITY AND REACTIVITY

Reactivity: No decomposition if stored and applied as directed.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: Product will not undergo hazardous polymerization.

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products: carbon dioxide and carbon monoxide
Hydrocarbons
Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:
- Inhalation
- Skin contact
- Eye Contact
- Ingestion

Acute toxicity: Not classified based on available information.

Product:

6

Acute oral toxicity: Acute toxicity estimate (Rat): 3,019 mg/kg

Acute dermal toxicity: Acute toxicity estimate (Rabbit): 169,492 mg/kg

Components:
DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC:
Acute oral toxicity: LD 50 (Rat): > 5,000 mg/kg

Acute dermal toxicity: LD 50 (Rabbit): > 5,000 mg/kg

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA:
Acute oral toxicity: LD 50 (Rat): > 5 g/kg
Acute inhalation toxicity: LC50 (Rat): > 5.53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: Not classified as acutely toxic by inhalation under GHS.

Acute dermal toxicity: LD 50 (Rabbit): > 2,000 mg/kg
Assessment: Not classified as acutely toxic by dermal absorption under GHS.
Remarks: No mortality observed at this dose.

Skin corrosion/irritation
Not classified based on available information.
Product:
Result: Not irritating to skin

Result: Repeated exposure may cause skin dryness or cracking.

Components:
DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC:
Result: Mildly irritating to skin

ASPHALT:
Result: Not irritating to skin

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA:
Species: Rabbit
Result: Not irritating to skin

Serious eye damage/eye irritation
Not classified based on available information.
Product:
Result: Not irritating to eyes

Remarks: Unlikely to cause eye irritation or injury.

Components:

DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC:
Result: Mildly irritating to eyes

ASPHALT:
Result: Possibly irritating to eyes

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA:
Species: Rabbit
Result: Mildly irritating to eyes

**Respiratory or skin sensitisation**
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

**Components:**
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA:
Species: Guinea pig
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

**Germ cell mutagenicity**
Not classified based on available information.

**Carcinogenicity**
Not classified based on available information.

**Reproductive toxicity**
Not classified based on available information.

**STOT - single exposure**
Not classified based on available information.

**STOT - repeated exposure**
Not classified based on available information.

**Aspiration toxicity**
Not classified based on available information.

**Product:**
No aspiration toxicity classification

**Components:**
DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC:
May be fatal if swallowed and enters airways.

**Further information**
**Product:**
Remarks: No data available

**Carcinogenicity:**
**IARC**
Group 2B: Possibly carcinogenic to humans

**OSHA**
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA:
Toxicity to fish
Exposure time: 96 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates
EL50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 202

Toxicity to algae
NOEL (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Test substance: WAF
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l

Persistence and degradability
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTA:
Biodegradability
Result: Inherently biodegradable
Biodegradation: 31 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Bioaccumulative potential
No data available

Mobility in soil
No data available
Other adverse effects
No data available

Product:
Additional ecological : No data available information

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
General advice : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

<table>
<thead>
<tr>
<th>REGULATION</th>
<th>ID NUMBER</th>
<th>PROPER SHIPPING NAME</th>
<th>*HAZARD CLASS</th>
<th>SUBSIDIARY HAZARDS</th>
<th>PACKING GROUP</th>
<th>MARINE POLLUTANT / LTD. QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. DOT - ROAD</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - RAIL</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - INLAND WATERWAYS</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSPORT CANADA - ROAD</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSPORT CANADA - RAIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Not dangerous goods

TRANSPORT CANADA - INLAND WATERWAYS
Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS
Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO
Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER
Not dangerous goods

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES
Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

| Marine pollutant | no |

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : No SARA Hazards
SAFETY DATA SHEET

Valvoline™ GM MULTIPURPOSE GREASE
VV610

Revision Date: 05/23/2015
Print Date: 3/11/2016
SDS Number: R0172170

Version: 1.0

SARA 313
Component(s) SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65: Proposition 65 warnings are not required for this product based on the results of a risk assessment.

The components of this product are reported in the following inventories:
- TSCA: On TSCA Inventory
- AUSTR: On the inventory, or in compliance with the inventory
- DSL: All components of this product are on the Canadian DSL.
- ENCS: On the inventory, or in compliance with the inventory
- KECL: On the inventory, or in compliance with the inventory
- PICCS: On the inventory, or in compliance with the inventory
- IECSC: On the inventory, or in compliance with the inventory

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 05/23/2015

NFPA:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS III:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
PHYSICAL HAZARD

0

Special hazard.

0 = not significant, 1 = Slight,
24 = Moderate, Extreme, 3 = * = Chronic High

NFPA Flammable and Combustible Liquids Classification
Combustible Liquid Class IIIB

Full text of H-Statements referred to under sections 2 and 3.
H304 May be fatal if swallowed and enters airways.

Sources of key data used to compile the Safety Data Sheet
Ashland internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet:
ACGIH: American Conference of Industrial Hygienists
BEI: Biological Exposure Index
CAS: Chemical Abstracts Service (Division of the American Chemical Society).
CMR: Carcinogenic, Mutagenic or Toxic for Reproduction
FG: Food grade
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement: Hazard Statement
IATA: International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).

ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population LDxx
   : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent, Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value  TWA :
   : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System
<table>
<thead>
<tr>
<th>SAFETY DATA SHEET</th>
<th>Revision Date: 05/23/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Print Date: 3/11/2016</td>
</tr>
<tr>
<td></td>
<td>SDS Number: R0172170</td>
</tr>
<tr>
<td>Valvoline™ GM MULTIPURPOSE GREASE</td>
<td>Version: 1.0</td>
</tr>
<tr>
<td>VV610</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product: 1100-CLEAR with/without Red Fugitive Dye  
Part Number: 3011000/3011000-10H

Manufacturer: W. R. MEADOWS, INC.
Address: 300 Industrial Drive  
Hampshire, Illinois 60140

Telephone: (847) 214-2100  
In case of emergency, dial (800) 424-9300 (CHEMTREC)  
Revision Date: 9/10/2015

Product Use: Concrete Curing Compound

SECTION 2: HAZARDS IDENTIFICATION/EXPOSURE LIMITS

HMIS HAZARD STATEMENTS

| Health | 1 | May cause skin irritation. |
| Flammability | 0 | May cause eye irritation. |
| Reactivity | 0 | May cause respiratory irritation. |

PRECAUTIONARY STATEMENTS

Avoid direct contact.
Avoid of inhalation of mists/vapors.

SECTION 3: HAZARDS COMPONENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>% by Weight</th>
<th>SARA</th>
<th>Vapor Pressure (mm Hg@20°C)</th>
<th>LEL (@25°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Aromatic Naphtha</td>
<td>64742-95-6</td>
<td>5-10</td>
<td>No</td>
<td>2.1</td>
<td>1</td>
</tr>
</tbody>
</table>

Under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372, chemicals listed on the 313 List (40 CFR Part 373.65) are identified under the heading "SARA 313."  
N/A: Not Applicable

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Immediately flush eyes with water for fifteen minutes. If symptoms persist, seek medical attention.

SKIN CONTACT: Remove contaminated shoes/clothing. Wipe excess from skin and wash with soap if available. Seek medical attention if irritation persists. Do not use clothing until thoroughly decontaminated.

INHALATION: Remove victim to fresh air and treat symptomatically. Seek medical attention if symptoms persist.

INGESTION: Do not induce vomiting. If vomiting spontaneously occurs, keep the victim’s head below the hips to prevent lung aspiration. Seek immediate medical attention.

SECTION 5: FIRE AND EXPLOSIVES HAZARDS

FLASHPOINT: >210 degrees F

EXTINGUISHING MEDIA: Water fog, foam, dry chemical, or carbon dioxide.

CHEMICAL/COMBUSTION HAZARDS: Carbon dioxide, carbon monoxide, and incomplete combustion products.

PRECAUTIONS/PERSONAL PROTECTIVE EQUIPMENT: Avoid smoke inhalation. Personal protective equipment should include helmet, face shield, bunker coat, gloves, rubber boots, and a positive pressure NIOSH-approved self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Evacuate unauthorized personnel from spill area. Wear appropriate personal protective equipment. Shut off source of spill if safe to do so. Dike and contain. Recover free product and soak up residue with an absorbent, such as clay or other suitable material. Place in non-leaking containers for proper disposal. Flush area to remove trace residues. Dispose of flush solutions as above.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING PROCEDURES: Avoid direct contact.

SAFE STORAGE: Keep containers closed when not in use. Prevent product from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PEL</td>
<td>PEL/CEILING</td>
</tr>
<tr>
<td>Light Aromatic Naphtha</td>
<td>N/E</td>
<td>N/E</td>
</tr>
</tbody>
</table>

ENGINEERING CONTROLS: None required under normal use conditions.

PERSONAL PROTECTIVE EQUIPMENT: Safety glasses, chemical resistant gloves.
### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>212 degrees F</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>&gt; 1 (Air=1)</td>
</tr>
<tr>
<td>% Volatile by Volume</td>
<td>85</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>&lt;1 (Ether =1)</td>
</tr>
<tr>
<td>pH Level</td>
<td>8.80</td>
</tr>
<tr>
<td>% Volatile by Weight</td>
<td>84</td>
</tr>
<tr>
<td>Weight per Gallon</td>
<td>8.33</td>
</tr>
<tr>
<td>Product Appearance</td>
<td>Tan Liquid</td>
</tr>
<tr>
<td>VOC Content</td>
<td>113 g/L</td>
</tr>
</tbody>
</table>

### SECTION 10: STABILITY/REACTIVITY

- **Stability**: Stable.
- **Hazardous Polymerization**: Will not occur.
- **Conditions and Materials to Avoid**: Strong oxidizing agents.

### SAFETY DATA SHEET

**Date of Preparation**: 9/10/15

**Section 10 continued**

**Hazardous Decomposition Products**: None recognized.

### SECTION 11: TOXICOLOGICAL INFORMATION
EYE CONTACT: Direct contact may cause mild to moderate irritation. Product vapors/mists may also cause irritation.

SKIN CONTACT: Direct contact may result in mild to moderate irritation.

INHALATION: Not expected to be an exposure pathway under normal use conditions.

INGESTION: Not expected to be an exposure pathway under normal use conditions.

SIGNS AND SYMPTOMS: Symptoms of eye irritation include pain, tearing, redness, and swelling. Symptoms of skin irritation include reddening, swelling, and rash. Symptoms of respiratory irritation include runny nose, coughing, chest discomfort, shortness of breath, and reduced lung function. Symptoms of gastrointestinal irritation include sore throat, abdominal pain, nausea, vomiting, and diarrhea.

AGGRAVATED MEDICAL CONDITIONS: None recognized.

OTHER HEALTH EFFECTS: None recognized.

SECTION 12: ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>ECOTOXICITY:</th>
<th>N/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEGRADABILITY:</td>
<td>N/E</td>
</tr>
<tr>
<td>BIOACCUMULATIVE POTENTIAL:</td>
<td>N/E</td>
</tr>
<tr>
<td>SOIL MOBILITY:</td>
<td>N/E</td>
</tr>
<tr>
<td>OTHER ADVERSE EFFECTS:</td>
<td>N/E</td>
</tr>
</tbody>
</table>

SECTION 13: WASTE DISPOSAL INFORMATION

WASTE DISPOSAL INFORMATION: Classified as a non-hazardous waste.

SECTION 14: TRANSPORTATION INFORMATION

HAZARDOUS/NON-HAZARDOUS MATERIAL: Non-hazardous.

UN NUMBER: None. HAZARD CLASS: None. PACKING GROUP: None.

UN PROPER SHIPPING NAME: Not regulated.

ENVIRONMENTAL HAZARDS: Not applicable.

BULK TRANSPORTATION INFORMATION: Not regulated when shipped in bulk configuration.

SPECIAL PRECAUTIONS: Protect product from freezing.

SECTION 15: REGULATORY INFORMATION

OTHER REGULATORY CONSIDERATIONS: None.

SECTION 16: OTHER INFORMATION

PREPARATION DATE: 9/10/2015

PREPARED BY: Dave Carey

The information contained herein is based on the data available to us and is believed to be correct. However, we make no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. We assume no responsibility for injury from the use of this product described herein.
Xypex Chemical Corporation
13731 Mayfield Place
Richmond, British Columbia
Canada V6V 2G9
Product Identifier

Xypex Concentrate & Concentrate White
Xypex Modified & Modified White
Xypex Admix C-500, Admix C-1000 & Admix C-2000
Xypex Admix C-500 NF, Admix C-1000 NF & Admix C-2000 NF
Xypex Concentrate DS 1 & 2
Xypex Patch’n Plug
Megamix I & Megamix II
FCM Powder

Product Use

Waterproofing and Protection of Concrete

Emergency Assistance

For emergency assistance involving products, contact Xypex at (604) 273-5265 or (800) 961-4477.

Hazardous Ingredients

Portland cement

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>65997-15-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA PEL</td>
<td>50 mppcf or 15 mg/m³ (total dust) and 5 mg/m³ (respirable fraction)</td>
</tr>
<tr>
<td>ACGIH TLV TWA</td>
<td>of 10 mg/m³, particulate matter contains no asbestos and &lt; 1% crystalline silica</td>
</tr>
</tbody>
</table>

Silica Sand

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>14808-60-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TLV TWA</td>
<td>of 0.05 mg/m³ (respirable fraction) and A2 (suspected human carcinogen)</td>
</tr>
<tr>
<td>LD₅₀</td>
<td>&gt; mg/kg (oral, rat)</td>
</tr>
</tbody>
</table>

Alkaline Earth Compound

| ACGIH TLV TWA | of 2 mg/m³ |
| LD₅₀ | 7.34 g/kg (oral, rat)² |

* Cementitious Mixture – classed as an irritant and potential for being corrosive, follow instructions below re appropriate personal protective measures.
Physical Data

Physical State: solid
Odor & Appearance: odorless grey color
pH: 9.1 (EPA method – 2 parts water to 1 part powder by volume weight)
Specific Gravity: 2.8 (water)

Fire and Explosive Data

Xypex Cementitious Products are not flammable and are not subject to explosion.

Reactivity Data

- Xypex Cementitious Products are chemically stable.
- Products are incompatible with strong acids.
- Products may liberate Carbon Monoxide or Carbon Dioxide.
- Alkaline earth compounds will cause explosive decomposition of maleic anhydride, nitroalkanes, and nitroparaffins, in the presence of water, form salts with inorganic salts and with inorganic bases. The dry salts are explosive.

Toxicology Properties

Effects of Acute Exposure to Products
- Ingredients in the products are dermal irritants and dermatitis may develop following exposure.
- Ingredients may also irritate or cause burning sensation to eyes, nose & throat. Eye burns can result from exposure to Alkaline earth compounds.

Effects of Chronic Exposure to Products
- Exposure to dust can cause perforation of the nasal septum.
- Prolonged exposure to ingredients in these products can cause lung and respiratory tract damage.
- Portland cement and Alkaline earth compound are corrosive to the skin.
- Excessive inhalation of crystalline silica dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis. IARC has concluded that there is “sufficient evidence for the carcinogenicity of inhaled crystalline silica in the form of quartz and cristobalite in certain industrial circumstances, but that the carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs”.

Exposure Limit
- TWA 10 mg/m³ Portland cement (total dust) or 5 mg/m³ (respirable fraction) (OSHA PEL)
- TWA of 0.05 mg/m³ Silica Sand (respirable fraction) and A2 (suspected human carcinogen) (ACGIH)
- TLV-TWA 2 mg/m³ Alkaline earth compound (ACGIH)

* It is advisable to also consult with local authorities for acceptable local values.
Preventive Measures

Personal Protective Equipment
It is recommended that user wear rubber gloves, rubber boots, NIOSH or equivalent dust mask, tight-fitting safety goggles, and impervious clothing that protects skin from contact. Additional safety precautions may include eyewash station, shower facility, and ventilation sufficient in volume and distribution to maintain dust exposure below the 10 mg/m³ level.

Disposal Procedures
Product can be disposed of as common waste. Avoid the creation of respirable dust. Consult with federal, state and municipal regulations regarding disposal.

Storage Requirements
Store in dry, moderate environment, and protect from water or cold damage. Keep in sealed steel containers until product is required.

First Aid Measures

Eye Contact
Quickly and gently blot or brush away any dry powder. Irrigate with large amounts of water for at least 15 - 20 minutes. Seek immediate medical attention.

Skin Contact
Under running water, remove contaminated clothing, shoes and leather goods. Continuously flush contaminated area with lukewarm, gently flowing water for at least 20-60 minutes. Seek immediate medical attention.

Inhalation
Move person to fresh air and seek immediate medical attention.

Oral Ingestion
Drink 1 cup (240 - 300 ml) of water followed by dilution with milk, if available. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing. Seek immediate medical attention.
The information in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information given is based on technical data that we believe to be reliable at the time of issuing the MSDS. Because conditions of use are outside our control, it is the responsibility of the user to verify safety data for combinations with other materials, or for use in specific processes, and to verify waste disposal requirements.
1. Identification of the Substance / Mixture and of the Company

1.1 PRODUCT IDENTIFICATION
Xypex Cementitious Products
Concentrate
Modified
DS-1 & DS-2
C-500 & C-500 NF
  Admix C-1000 & C-1000 NF
  Admix C-1000 Red
Admix C-2000 & C-2000 NF
Megamix I & Megamix II
FCM 80 (powder component)
Patch’n Plug
RestoraTop 50, 100 & 200

1.2 PRODUCT USE
Waterproofing and protection of concrete

1.3 COMPANY IDENTIFICATION
Xypex Chemical Corporation
  13731 Mayfield Place
  Richmond, B.C., Canada
Tel: 604-273-5265 or 800-961-4477
Fax: 604-270-0451
  E-mail: info@xypex.com
Web: www.xypex.com

1.4 EMERGENCY TELEPHONE NUMBERS
  During normal Pacific Standard Time (PST)
  800-961-4477 or 604-273-5265
  All other times, and in times of unavailability, contact your local emergency services.

2. Hazards Identification

2.1 CLASSIFICATION OF THE MIXTURE
2.1.1 Classification In Accordance With GHS (5th Edition)
  Skin Irrit. 2: H315 Causes skin irritation.
  Eye Dam. 1: H318 Causes serious eye damage.
  Skin Sens. 1: H317 May cause an allergic skin reaction.
  STOT SE 3: H335 May cause respiratory irritation.
  STOT RE 2: H373 May cause damage to respiratory organs through prolonged or repeated exposure.

2.2 LABEL ELEMENTS: in Accordance with GHS (5th Edition)
2.3 HAZARD STATEMENTS
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H373 May cause damage to respiratory organs through prolonged or repeated exposure.

2.4 PRECAUTIONARY STATEMENTS

P280 Wear protective gloves / face protection & approved masks.

P260 Do not breathe dust.
P264 Wash thoroughly after handling.

2.5 RESPONSIVE PRECAUTIONARY STATEMENTS

P260 Do not breathe dust
P264 Wash thoroughly after handling
P280 Wear protective gloves / face protection.
P305 IN EYES: Rinse cautiously with water for several minutes.
P310 CENTRE
P305 + P301 + P338 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable to breathing.
P304 + P340 IF INHALED: Immediately call a POISON CENTRE or doctor / physician.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>%</th>
<th>CAS. No.</th>
<th>Classification According to GHS (5th Edition)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkaline Earth Compounds (calcium dihydroxide)</td>
<td>5 - 20%</td>
<td>1305-62-0</td>
<td>Skin Irrit. 2: H315 Eye Dam. 1: H318 STOT SE 3: H335</td>
</tr>
<tr>
<td>Silica Sand (&lt; 0.005 % (w/w) 10 µm respirable silica)</td>
<td>30 - 40%</td>
<td>14808-60-7</td>
<td>STOT RE 2: H373</td>
</tr>
</tbody>
</table>

4. First Aid Measures
4.1 DESCRIPTION OF FIRST AID MEASURES

When seeking medical advice take this safety data sheet with you.

INHALATION: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Dust in throat and nasal passages should clear spontaneously. If not, irrigate nose and throat with clean water for at least 20 minutes. Seek immediate professional medical attention.

EYE CONTACT: IF IN EYES – Quickly and gently blot away any dry powder. Irrigate cautiously with large amounts of water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub eyes as this may cause addition irritation or damage. Seek immediate professional medical attention if irritation persists.

SKIN CONTACT: Quickly and gently blot away any dry powder. Under running water, remove contaminated clothing, shoes and leather goods. Continuously flush contaminated area with lukewarm, gently flowing water for at least 60 minutes. If skin irritation or rash occurs, seek medical advice.

INGESTION: Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. If conscious, wash out mouth with clean water. Drink 1 cup (240 - 300 ml) of water followed by dilution with milk if available. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing. Seek immediate professional medical assistance and contact a poison centre.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

ACUTE:
Irritation to skin and mucous membranes.

DELAYED: Precautions should be taken to ensure that dust is not inhaled; however, long-term exposure to high levels of dust may result in damage to the lungs.

4.3 IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT

Move person to fresh air and away from exposure. Wash and clean eyes or skin as described in 4.1. Ensure eyewash facilities are available.

5. Firefighting Measures

5.1 EXTINGUISHING MEDIA

Xypex Cementitious Products are not flammable and are not subject to explosion.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

No hazardous combustion products. Alkaline earth compounds will cause explosive decomposition of maleic anhydride, nitroalkanes and nitroparaffins, in the presence of water, form salts with inorganic salts and with inorganic bases. The dry salts are explosive.

5.3 ADVICE FOR FIREFIGHTERS

No need for specialist protective equipment for firefighters. Prior to using the product liaise with local fire authority for
confirmation of best and most current form of firefighting equipment for the product.

6. Accidental Release Measures

6.1 PERSONAL PROTECTIVE MEASURES
Always wear full protective equipment as referred to under Section 8.2.2 to prevent any contamination of skin, eyes, respiratory system and personal clothing. Ensure adequate measures are in place to prevent airborne dust. Avoid airborne dust generation.

6.2 ENVIRONMENT PROTECTION MEASURES
Do not allow product into drains or water courses. Any spillages into watercourses must be alerted to the Environment Agency or other regulatory body.

6.3 METHODS FOR CLEANING UP
At all times avoid inhalation of product and contact with skin and eyes. Contain the spillage. Keep the material dry if possible. Wear full personal protective equipment when cleaning up, whatever method is chosen. When the product is in a dry state, avoid airborne dust generation when cleaning up. Avoid dry sweeping. Examples of cleanup methods when in dry state are:

(A) Using a vacuum cleaner (Industrial portable units), equipped with high efficiency particulate filters (HEPA filter) or equivalent technique.

(B) Wipe up the dust by mopping, wet brushing or water sprays or hoses with a fine mist to avoid the dust becoming airborne and remove slurry. Ensure drains are covered.

If the product has become wet, clean up and place in watertight container. Allow material to dry and solidify before disposing of spillage, whether in dry state or not.

7. Handling & Storage

7.1 HANDLING
Avoid all types of dust generation; particularly the creation of respirable dust. At all times avoid inhalation of product and contact with skin and eyes. Carrying the product may cause back injuries, strains, sprains or the like. Use correct handling techniques to avoid injury. Use handling equipment and controls if necessary to avoid injury. If in doubt, contact your local health and safety body for further guidance on annual handling. Always wear sufficient and full protective equipment and suitable clothing when handling the product. General – During work avoid kneeling in the product. If kneeling is absolutely necessary then appropriate impervious waterproof personal protective equipment must be worn.

Ensure adequate ventilation and have ventilation equipment available if required due to possibility of generation of airborne dust.
Do not eat, drink or smoke when handling or applying product. Remove contaminated clothing and protective equipment before entering eating areas.

Avoid mishandling of pails of bags to prevent accidental bursting and creation of dust.

7.2 STORAGE

P402 + P232 + 233 Store in dryplace. Protect container tightly closed.
P401 Keep

Store this product in a draught free environment, clear of the ground, avoiding humid conditions and extremes of temperature (minimum lower temperature of 7°C (45°F). The product should be used within 12 months of the date of production; product should not have been exposed to the atmosphere prior to use.

Any product that is stacked should be done so in a stable manner, and to a safe height. The stacking of product should be done in such a manner that it does not create any risk of product falling and accidentally bursting the packaging open.

This product contains Portland cement and thus Chromium (VI) and may produce an allergic reaction. The cement in this product may contain a reducing agent; the effectiveness of the reducing agent reduces with time.

8. Exposure Control / Personal Protection

8.1 CONTROL PARAMETERS

P260 Do not breathe dust.
P401 Store in original containers.

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS No</th>
<th>Regulatory Limits</th>
<th>Recommended Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>Cal/OSHA PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(as of 4/26/13)</td>
<td>(as of 4/26/13)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ppm</td>
<td>mg/m</td>
</tr>
<tr>
<td>Calcium hydroxide</td>
<td>1305-62-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total dust</td>
<td></td>
<td>15</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>Respirable fraction</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Portland cement</td>
<td>65997-15-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total dust</td>
<td></td>
<td>15</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

May 31, 2015  SDS – Cementitious Products  PAGE 5 OF 9
<table>
<thead>
<tr>
<th>Respirable fraction</th>
<th>5 mg/m³</th>
<th>5 mg/m³</th>
<th>1 mg/m³ (no asbestos and &lt; 1% crystalline silica)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica: Crystalline</td>
<td>14808-60-7</td>
<td>0.025 (resp.) for a-quartz and cristobalite mg/m³</td>
<td></td>
</tr>
<tr>
<td>Quartz (Respirable)</td>
<td>10 mg/m³ (%SiO₂+2)</td>
<td>Ca 0.05 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Quartz (Total Dust)</td>
<td>30 mg/m³ (%SiO₂+2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please refer to OSHA website for additional information. Please note that the % of respirable crystalline silica in the silica sand is < 0.005 % but some processes and uses may increase this fraction.

### 8.2 EXPOSURE CONTROLS

#### 8.2.1 Appropriate Engineering Controls

Provide adequate and suitable ventilation / ventilation equipment when handling product, to maintain dust below OES. All ventilation systems should be filtered before discharge to atmosphere. Isolate personnel from dusty areas. Do not eat, drink or smoke when working with the product to avoid contact with skin or mouth. Immediately after working with the product, workers should wash or shower or use skin moisturizers. Remove contaminated clothing, footwear, watches, etc... and clean thoroughly before re-using.

#### 8.2.2 Personal Protection Equipment

- **P280** Wear protective gloves / protective clothing / eye protection / face protection.
- **P264** Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
- **P272** Close all fittings at opening.

**Skin Protection** – Use impervious, abrasion and alkali resistant gloves, enclosed rubber boots that resist powder and liquid penetration, closed long-sleeved impervious protective clothing that protects skin from contact. 

**Eye Protection** – Wear safety goggles / glasses at all times when handling the product. Ensure the goggles / glasses have suitable side protection, are wide vision, and that there is no risk of product particles being able to enter the eye(s).

**Respiratory Protection** – Always use respiratory protection. Inhalation of product dust must be avoided at all times. Use an APPROVED NIOSH dust mask. Respiratory protective equipment must be in compliance with relevant national legislation. It is good practice to conduct fit-testing when selecting respiratory protective equipment.

Additional safety precautions may include the provision of a shower facility.

#### 8.2.3 Environmental Exposure Controls

According to available technology that limit dust dispersion into the environment.
9. Physical & Chemical Properties

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Grey particulate powder</td>
</tr>
<tr>
<td>Odour</td>
<td>None</td>
</tr>
<tr>
<td>pH</td>
<td>pH 9.1 – 9.8 (EPA method 2 parts water to 1 part powder by volume weight)</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Initial Boiling Point and Range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability Upper / Lower</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility</td>
<td>Powder forms slurry with water, hardens over time</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Alkaline earth compounds: 580ºC</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.0 to 2.8 (water = 1)</td>
</tr>
</tbody>
</table>

10. Stability & Reactivity

10.1 REACTIVITY

Alkaline earth compounds react vigorously with strong acids. They also attack aluminum, lead and brass in the presence of moisture.

In the presence of water, calcium aluminates react chemically and harden to form stable calcium aluminate hydrates. This reaction is exo-thermal and may last up to 24 hours. The total heat released is < 500 kj/kg.

10.2 CHEMICAL STABILITY

The product is chemically stable. When mixed with water it will harden, with time, into a stable mass. Products may liberate Carbon Monoxide or Carbon Dioxide.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

Alkaline earth compounds will cause explosive decomposition of maleic anhydride, nitroalkanes and nitroparaffins, in the presence of water, form salts with inorganic salts and with inorganic bases. The dry salts are explosive.

Alkaline earth compound is stable up to 580ºC. Alkaline earth compounds decompose with loss of water at approximately 580ºC to form Calcium Oxide.

10.4 CONDITIONS TO AVOID

Avoid humid and drafty environments during storage. Also avoid storage temperatures below 7ºC.
10.5 INCOMPATIBLE MATERIALS
Products are incompatible with strong acids.

It should be noted that the uncontrolled use of aluminum powder in wet cement should be avoided as hydrogen is produced.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS
None known.

11. Toxicological Information

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Acute Dermal Toxicity: The cement incorporated with the other ingredients in this product has been subject to a Limit test. (Limit test, rabbit, 24 hours contact, 2,000 mg/kg body weight – no lethality.)
Calcium dihydroxide is not acutely toxic. Rabbit dermal LD50 > 2,500 mg/kg/bw.

Acute Oral Toxicity: May cause irritation to the gastrointestinal tract. Calcium dihydroxide is not acutely toxic. Rat oral LD50 > 2,000 mg/kg/bw.

Acute Inhalation Toxicity: The product may irritate the throat and respiratory tract. Inhalation may lead to irritation, inflammation or burns. Coughing, sneezing and shortness of breath may occur following exposures in excess of occupational exposure limits.

Skin Corrosion / Irritation: When skin is exposed to the product in its dry or wet state, thickening, cracking or fissuring of the skin may occur. Prolonged contact in combination with abrasion can cause severe burns.

Portland cement and alkaline earth compound are an irritant to skin. Ingredients are dermal irritants and dermatitis may develop following exposure.

Cement may have an irritating effect on moist skin (due to transpiration of humidity) after prolonged contact. Prolonged skin contact with wet cement or fresh concrete may cause serious burns because they develop without pain being felt. Repeated skin contact with wet cement may cause dermatitis.

This mixture contains < 2 ppm Chromium (VI), which is a skin irritant.

Serious Eye Damage / Irritation: Direct contact with product may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact either in dry or wet form may cause effects ranging from moderate eye irritation (eg. conjunctivitis or blepharitis) to chemical burns or blindness.

Skin Sensitization: This product contains Portland cement which is classified as a skin sensitizer.

Contact Dermatitis / Sensitizing Effects: Prolonged and repeated skin contact with Alkaline earth products may cause dermatitis.

Some individuals may exhibit eczema upon exposure to wet cementitious products, either by the high pH which induces irritant contact dermatitis, or by an immunological reaction to soluble Cr (VI) which elicits allergic contact dermatitis. The response may appear in a variety of forms ranging from a
mild rash to severe dermatitis and is a combination of those two mechanisms. An exact diagnosis is often difficult to assess.

**Germ Cell Mutagenicity:** With the exception of Chromium (VI) (< 2 ppm) in the Portland cement, none of the individual substances in this mixture are classified as mutagenic.

**Carcinogenicity:** This product contains silica sand and this form of silica is not classified as carcinogenic due to its large particle size. However, prolonged and/or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica.

In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, it pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated.

IARC (1997) has concluded that there is ‘sufficient evidence for the carcinogenicity of inhaled crystalline silica in the form of quartz and cristobalite in certain industrial circumstances, but that the carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of polymorphs’.

Principle symptoms of lung fibrosis (commonly referred to as silicosis) are cough and breathlessness. Occupational exposure to respirable dust and respirable crystalline silica dust should be monitored and controlled.

**Reproductive Toxicity:**
None of the individual substances in this mixture are classified as reproductive toxicants.

**Specific Target Organ Toxicity – Single Exposure:**
Inhalation of dust can result in damage to the respiratory tract.
Specific Target Organ Toxicity – Repeat Exposure: Prolonged or repeated inhalation exposure may cause damage to the lungs, including chronic obstructive pulmonary disease (COPD).

Certain ingredients within these products do give potential for generation of respirable dust during handling and use. The dust may contain respirable crystalline silica.

Prolonged or frequent or excessive exposure to respirable crystalline silica dust, cement dust and alkaline earth products may cause respiratory disease, lung disease, lung and respiratory tract damage, ulceration and perforation of the nasal septum, pneumonitis and other serious bad health effects.

The excessive inhalation of crystalline silica dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis.

11.2 ASPIRATION HAZARD
No data available.

11.3 LIKELY ROUTES OF EXPOSURE
Inhalation: YES
Skin – Eyes: YES
Ingestion: NO – except in accidental cases

11.4 POTENTIAL HEALTH EFFECTS
The product may irritate and burn the throat and respiratory tract. Coughing, sneezing and shortness of breath may occur following exposures in excess of occupational exposure limits. Causes skin irritation and is a severe eye irritant.

Chronic exposure to respirable dust in excess of occupational exposure limits may cause coughing, shortness of breath and may cause chronic obstructive lung disease (COPD).

11.5 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Inhaling dust may aggravate existing respiratory system disease(s) and / or medical conditions such as emphysema or asthma and / or existing skin and / or eye conditions.

12. Ecological Information

12.1 ECOTOXICITY
Do not allow the material to enter water course. If water is contaminated inform the relevant authorities immediately. The addition of a significant amount of cementitious products to water may cause a rise in the pH value and therefore may be toxic to aquatic life under certain circumstances.

Alkaline conditions may also have effects on vegetation.

The following toxicity values are available for calcium dihydroxide:

LC50 (96h) for freshwater / marine fish: 50.6 mg/l
EC50 (48h) for freshwater invertebrates: 49.1 mg/l
LD50(96h) for marine water invertebrates: 158 mg/l
EC50 (72h) for freshwater algae: 184.57 mg/l

NOEC (14d) for marine water invertebrates: 32 mg/l

EC10/LC10 or NOEC for soil macro-organisms: 2,000 mg/kg soil dw

NOEC (21d) for terrestrial plants: 1,080 mg/kg soil

12.2 PERSISTENCE AND DEGRADABILITY
Alkaline earth material is non bio-degradable; it reacts with atmosphere and dissolved carbon dioxide to form calcium carbonate (chalk).

12.3 BIO ACCUMULATIVE POTENTIAL
None of the substances in this mixture are known to bioaccumulate.

12.4 MOBILITY IN SOIL
Not known.

12.5 RESULTS OF PBT AND VPvB ASSESSMENT
This mixture does not contain any substances that are assessed to be PBT or vPvB.

13. Disposal Considerations

13.1 WASTE TREATMENT METHODS
Avoid creation of airborne and respirable dust when disposing of product.

Product – Unused Residue or Dry Spillage
Pick up dry and put in containers. Mark container clearly. In case of disposal, harden with water to avoid dust creation. Dispose of at a licensed waste facility accepting cementitious and alkaline earth based waste. Dispose of all materials in accordance with current local regulations / legislation.

Product – Slurries
Allow to harden. Avoid entry into sewage and drainage systems or into bodies of water as indicated for hardened product.

Product – After Addition of Water, Hardened
Dispose of at a licensed waste facility accepting cementitious and alkaline earth based waste. Dispose of all materials in accordance with current regulations / legislation. Avoid entry into sewage and drainage systems or into bodies of water.

13.2 PACKAGING
Completely empty packaging and process it according to current regulations / legislation.

14. Transportation Information

The product is not classified as hazardous for transport purposes.
15. Regulatory Information

GHS
WHMIS
OSHA

16. Other Information

Abbreviations
ACGIH American Conference of Governmental Industrial Hygienists
CAS Chemical Abstract Service Number
OEL Occupational Exposure Limit
TWA Time Weighted Averages

PEL Permissible Exposure Limit
MEL Maximum Exposure Limit
LC Lethal Concentration
LD Lethal Dose
UEL Upper Explosion Limit
LEL Lower Explosion Limit
PPE Personal Protective Equipment
EC50 Median effective concentration

LC50 Median lethal concentration
LD50 Median lethal dose
NOEC No observable effect concentration
WHMIS Workplace Hazardous Materials Information System

Hazard Statements In Full
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H373 May cause damage to respiratory organs through prolonged or repeated exposure.

Precautionary Statements In Full
P260 Do not breathe dust.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P272 Contaminated work clothing should not be allowed out of the workplace.
P264 Wash … thoroughly after handling.

Responsive Precautionary Statements
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue
P310 Immediately call a POISON CENTRE or doctor / physician.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P332+ P313 If skin irritation or rash occurs: Get medical advice / attention.

P362 Take off contaminated clothing and wash before reuse.

P501 Dispose of contents / container to …

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P314 Get medical advice / attention if you feel unwell.

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