

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Thiokol LPE 5100 Splash Zone Coating - Hardener/Side B
Version # 1.0
Revision date 19-Apr-2007
Company information PolySpec
 6614 Gant Road
 Houston, TX 77066 US
Emergency Chemtrec (800) 424-9300
 International (703) 527-3887

2. COMPOSITION / INFORMATION ON INGREDIENTS

Component(s)	CAS #	Percent
Ashes, residues	68131-74-8	< 20
Benzyl Alcohol	100-51-6	< 20
Wollastonite (CA(SiO3))	13983-17-0	< 20
N-aminoethyl piperazine	140-31-8	< 2.5
Petroleum distillates, hydrotreated light	64742-47-8	< 2.5
Nonylphenol	25154-52-3	< 10

Non-hazardous and other components below reportable levels > 40

Composition comments This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

3. HAZARDS IDENTIFICATION

Emergency overview Irritating to respiratory system. Toxic by inhalation, in contact with skin and if swallowed. Causes skin and eye burns.

Potential short term health effects

Eyes Toxic in contact with eyes. This product causes eye burns. Risk of serious damage to eyes.
Skin Toxic in contact with skin. Causes skin burns.
Inhalation Toxic by inhalation. Irritating to respiratory system.
Ingestion Toxic if swallowed. Do not ingest. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

4. FIRST AID MEASURES

First aid

Eye contact Immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention immediately.
Skin contact Get medical attention immediately. Remove and isolate contaminated clothing and shoes. Immediately flush skin with running water for at least 20 minutes. For minor skin contact, avoid spreading material on unaffected skin.
Inhalation Call a physician or Poison Control Center immediately. Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately. If breathing is difficult, give oxygen.
Ingestion If material is ingested, immediately contact a physician or poison control center. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not use mouth-to-mouth method if victim ingested the substance.

Notes to physician Symptoms may be delayed.

General advice Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Immediate medical attention is required. Keep victim warm. In case of shortness of breath, give oxygen.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Carbon dioxide (CO ₂). Alcohol foam. Water spray. Water Fog. Polymer foam. Dry chemical powder.
Fire fighting equipment/instructions	Move containers from fire area if you can do it without risk. Do not scatter spilled material with high pressure water streams. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. ALWAYS stay away from tanks engulfed in flame. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. Cool containers with flooding quantities of water until well after fire is out.
Specific methods	In the event of fire, cool tanks with water spray. Water mist may be used to cool closed containers.
Flash point	250 °F (121.1 °C) Pensky-Martens Closed Cup

6. ACCIDENTAL RELEASE MEASURES

Evacuation procedures	Ventilate closed spaces before entering. Stay upwind. Keep out of low areas. Keep unnecessary personnel away.
Containment procedures	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. Use water spray to reduce vapors or divert vapor cloud drift.
Personal precautions	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Ensure adequate ventilation. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Methods for cleaning up	Avoid dust formation. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Dike far ahead of liquid spill for later disposal. Never return spills in original containers for re-use. Large Spills: Wet down with water and dike for later disposal. After removal flush contaminated area thoroughly with water.

7. HANDLING AND STORAGE

Handling	Do not breathe gas/fumes/vapor/spray. Do not get this material in your eyes, on your skin, or on your clothing. In case of insufficient ventilation wear suitable respiratory equipment. Do not handle or store near an open flame, heat or other sources of ignition. Surfaces may become slippery after spillage.
Storage	Keep out of the reach of children. Keep in a cool, well-ventilated place. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Do not freeze.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

ACGIH - Threshold Limits Values - TLV Basis - Critical Effects

Petroleum distillates, hydrotreated 64742-47-8 Irritation; CNS; skin (as total hydrocarbon vapor)
light

Personal protective equipment

Respiratory protection	A NIOSH- approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. In case of insufficient ventilation wear suitable respiratory equipment.
Hand protection	Protective gloves.
Eye protection	Wear chemical goggles. Face-shield.
Skin and body protection	Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Wear appropriate chemical resistant gloves. Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Wear suitable protective clothing.

General Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Avoid contact with the skin and the eyes.

Engineering measures to reduce exposure Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Hygiene measures Keep away from food and drink. Avoid contact with the skin and the eyes. Handle in accordance with good industrial hygiene and safety practice. When using do not smoke.

9. PHYSICAL & CHEMICAL PROPERTIES

Density	9.1547 lb/gal
Form	Liquid.
Specific gravity	1.099

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

Stability	Stable at normal conditions.
Conditions to avoid	Direct sources of heat.
Hazardous polymerization	Will not occur.
Incompatibility	Alcohols. Amides. Amines. Caustics. Cresol. Glycol. Isocyanates. Phenol. Strong acids. Strong oxidizing agents. Vinyl acetates. Will form explosive mixtures in air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	Causes burns.
Local effects	Toxic by inhalation, in contact with skin and if swallowed. Irritating to respiratory system.
Component analysis - LD50	

NIOSH - Selected LD50s and LC50s

Benzyl Alcohol	100-51-6	Oral LD50 Rat: 1230 mg/kg; Oral LD50 Mouse: 1360 mg/kg; Dermal LD50 Rabbit: 2 g/kg
N-aminoethyl piperazine	140-31-8	Oral LD50 Rat: 2140 µL/kg; Dermal LD50 Rabbit: 880 µL/kg
Nonylphenol	25154-52-3	Oral LD50 Rat: 1620 mg/kg; Oral LD50 Mouse: 1231 mg/kg; Dermal LD50 Rabbit: 2140 µL/kg

Routes of exposure	Inhalation. Skin contact. Ingestion.
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12. ECOLOGICAL INFORMATION

Ecotoxicity	Components of this product have been identified as having potential environmental concerns.
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Environmental effects

Ecotoxicity - Freshwater Algae Data

Nonylphenol	25154-52-3	96 Hr EC50 green algae (Selenastrum capricornutum): 0.41 mg/L
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Ecotoxicity - Freshwater Fish Species Data

Benzyl Alcohol	100-51-6	96 Hr LC50 fathead minnow: 460 mg/L (Static); 96 Hr LC50 bluegill: 10 mg/L (Static)
N-aminoethyl piperazine	140-31-8	96 Hr LC50 fathead minnow: 2190 mg/L (flow-through)
Nonylphenol	25154-52-3	96 Hr LC50 fathead minnow: 0.14 mg/L (flow-through)

Ecotoxicity - Microtox Data

Benzyl Alcohol	100-51-6	5 Min EC50 Photobacterium phosphoreum: 63.7 mg/L; 15 min EC50 Photobacterium phosphoreum: 63.7 mg/L; 30 min EC50 Photobacterium phosphoreum: 71.4 mg/L
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Ecotoxicity - Water Flea Data

Benzyl Alcohol	100-51-6	48 Hr EC50 water flea: 23 mg/L
Nonylphenol	25154-52-3	48 Hr EC50 water flea: 0.18 mg/L

13. DISPOSAL CONSIDERATIONS

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). 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 in accordance with all applicable regulations.
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14. TRANSPORTATION INFORMATION

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

ERG number	153
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International Air Transport Association (IATA) Requirements

Not regulated as dangerous goods.

International Maritime Dangerous Goods (IMDG) Code Requirements

Not regulated as dangerous goods.

15. REGULATORY INFORMATION

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
CERCLA/SARA Hazardous Substances - Not applicable.

Occupational safety and health administration (OSHA)

29 CFR 1910.1200 Yes
hazardous chemical

CERCLA (superfund) reportable quantity

None

Superfund amendments and reauthorization act of 1986 (SARA)

Section 302 extremely No
hazardous substance

Section 311 hazardous Yes
chemical

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

NFPA ratings

Health: 3
Flammability: 1
Instability: 0

International regulations

Canada - WHMIS - Ingredient Disclosure List

Benzyl Alcohol	100-51-6	1 % (English Item 169, French Item 170)
N-aminoethyl piperazine	140-31-8	1 % (English Item 68, French Item 213)
Nonylphenol	25154-52-3	1 % (English Item 1214, French Item 1276)

State regulations

Massachusetts - Right To Know List

Benzyl Alcohol	100-51-6	Present
N-aminoethyl piperazine	140-31-8	Present
Nonylphenol	25154-52-3	Present

New Jersey - Right to Know Hazardous Substance List

N-aminoethyl piperazine	140-31-8	sn 0075
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Pennsylvania - RTK (Right to Know) List

Benzyl Alcohol	100-51-6	Present
N-aminoethyl piperazine	140-31-8	Present
Nonylphenol	25154-52-3	Present

16. OTHER INFORMATION

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 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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.

Issue date

19-Apr-2007

MSDS sections updated

Handling and Storage: Handling
Exposure Controls / Personal Protection: Respiratory protection