MATERIAL SAFETY DATA SHEET

Health: 2*
Flammability: 3
Physical hazard: 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	**Thiokol TRP 415 Primer for Polysulfide Sealants**
Version #	1.0
Revision date	23-Jun-2008
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
Toluene	108-88-3	< 80
Non-hazardous and other components below reportable levels		> 20

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

3. HAZARDS IDENTIFICATION

Emergency overview Highly flammable. In use, may form flammable/explosive vapor-air mixture. Irritating to skin. Irritating to respiratory system. Kidney injury may occur. Harmful in contact with eyes.

Danger of serious damage to health by prolonged exposure. May cause breathing disorders and lung damage. Will be easily ignited by heat, spark or flames. May cause brain and central nervous system damage.

Potential short term health effects

Eyes	Contact may irritate or burn eyes. Eye contact may result in corneal injury.
Skin	Components of the product may be absorbed into the body through the skin. Irritating to skin.
Inhalation	May cause breathing disorders and lung damage. Irritating to respiratory system.
Ingestion	Do not ingest.
Target organs	Central nervous system. Eyes. Kidney. Liver. Respiratory system. Skin.
Main symptoms	Chronic exposure to neurotoxins damages the brain and the central nervous system. Liver injury may occur. Kidney injury may occur.

4. FIRST AID MEASURES

First aid

Eye contact	Immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention if irritation develops or persists.
Skin contact	Remove and isolate contaminated clothing and shoes. Wash off immediately with plenty of water. If skin irritation persists, call a physician.
Inhalation	If breathing is difficult, give oxygen. Move to fresh air. Get medical attention, if needed.
Ingestion	Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Drink plenty of water. Do not induce vomiting without medical advice.
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.

5. FIRE FIGHTING MEASURES

Unusual fire & explosion hazards	Vapors form flammable or explosive mixtures with air at room temperature. Vapor or gas may spread to distant ignition sources and flash back. Runoff to sewer may cause fire or explosion hazard. Containers may explode when heated.
Hazardous combustion products	Irritating and toxic gases or fumes may be released during a fire. Fire may produce irritating, corrosive and/or toxic gases.
Suitable extinguishing media	Carbon dioxide (CO2). Dry chemical. Foam.

Fire fighting equipment/instructions	Move containers from fire area if you can do it without risk. In the event of fire, wear self contained breathing apparatus. 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. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. ALWAYS stay away from tanks engulfed in flame. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire.
Flash point	45 °F (7.2 °C) Pensky-Martens Closed Cup

6. ACCIDENTAL RELEASE MEASURES

Evacuation procedures	Keep unnecessary personnel away. Ventilate closed spaces before entering. Stay upwind. Keep out of low areas.
Containment procedures	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). 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.
Personal precautions	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.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
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. Should not be released into the environment.

7. HANDLING AND STORAGE

Handling	Do not handle or store near an open flame, heat or other sources of ignition. Vapors may form explosive mixtures with air. Heat only in areas with appropriate exhaust ventilation. Do not breathe gas/fumes/vapor/spray. All equipment used when handling the product must be grounded. Avoid contact with eyes. Surfaces may become slippery after spillage.
Storage	Keep away from heat and sources of ignition. 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. The pressure in sealed containers can increase under the influence of heat. Do not freeze.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)

Toluene	108-88-3	50 Ppm TWA

ACGIH - Threshold Limits Values - TLV Basis - Critical Effects

Toluene	108-88-3	CNS

OSHA - Final PELs - Ceiling Limits

Toluene	108-88-3	300 Ppm Ceiling

OSHA - Final PELs - Time Weighted Averages (TWAs)

Toluene	108-88-3	200 Ppm TWA

Personal protective equipment

Respiratory protection	None required where adequate ventilation conditions exist. 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.
Hand protection	Protective gloves.
Eye protection	Wear chemical goggles. Face-shield.
Skin and body protection	Wear suitable protective clothing. Wear appropriate chemical resistant clothing.
General	Avoid contact with the skin and the eyes. Structural firefighters protective clothing will only provide limited protection.
Engineering measures to reduce exposure	Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.
Hygiene measures	When using do not smoke. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with the skin and the eyes.

9. PHYSICAL & CHEMICAL PROPERTIES

Density	8.0802 lb/gal

Form	Liquid.
Specific gravity	0.9696

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

Stability	Risk of ignition.
Conditions to avoid	Heat, flames and sparks. Vapors may form explosive mixture with air.
Hazardous polymerization	Will not occur.
Incompatibility	Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Local effects Liver toxicity. Risk of serious damage to eyes. Components of the product may be absorbed into the body through the skin. Irritating to respiratory system. Irritating to skin.

Component analysis - LD50

NIOSH - Selected LD50s and LC50s

Toluene	108-88-3	Inhalation LC50 Rat: 49 g/m3/4H; Inhalation LC50 Mouse: 400 mg/kg/24H; Oral LD50 Rat: 636 mg/kg; Dermal LD50 Rabbit: 14100 µL/kg

Carcinogenicity

ACGIH - Threshold Limits Values - Carcinogens

Toluene	108-88-3	A4 - Not Classifiable as a Human Carcinogen

Chronic toxicity Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury.

Subchronic toxicity Kidney injury may occur.

Further information Symptoms may be delayed.

Routes of exposure Inhalation. Skin contact.

12. ECOLOGICAL INFORMATION

Ecotoxicity Components of this product are hazardous to aquatic life.

Environmental effects Harmful to aquatic life.

Ecotoxicity - Freshwater Fish Species Data

Toluene	108-88-3	96 Hr LC50 fathead minnow (1 day old): 25 mg/L (flow-through);96 Hr LC50 rainbow trout: 24.0 mg/L (Static);96 Hr LC50 bluegill: 24.0 mg/L (Static);96 Hr LC50 fathead minnow: 31.7 mg/L (flow-through)

Ecotoxicity - Microtox Data

Toluene	108-88-3	30 Min EC50 Photobacterium phosphoreum: 19.7 mg/L

Ecotoxicity - Water Flea Data

Toluene	108-88-3	48 Hr EC50 water flea: 11.3 mg/L;48 Hr EC50 water flea: 310 mg/L

13. DISPOSAL CONSIDERATIONS

Waste codes D001: Waste Flammable material with a flash point <140 F

Disposal instructions Consult authorities before disposal. If discarded, this product is considered a RCRA ignitable waste, D001. Incinerate the material under controlled conditions in an approved incinerator. Dispose of this material and its container at hazardous or special waste collection point. Dispose in accordance with all applicable regulations. 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.

14. TRANSPORTATION INFORMATION

Department of Transportation (DOT) Requirements

Proper shipping name	PAINT RELATED MATERIAL
Hazard class	3
Special provisions	B52, IB2, T4, TP1, TP8
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242
Quantity limits passenger	5 L
Quantity limits cargo	60 L
Vessel stowage location	B
UN number	UN1263
Packaging group	II
Labels required	3
ERG number	128

DOT

International Air Transport Association (IATA) Requirements

Proper shipping name	PAINT RELATED MATERIAL
Hazard class	3
Special provisions	B52, IB2, T4, TP1, TP8
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242
Quantity limits passenger	5 L
Quantity limits cargo	60 L
Vessel stowage location	B
UN number	UN1263
Packaging group	II
Labels required	3
Passenger Cargo Pkg Inst	Y305
LQ	305
Packaging Instructions	307
Pkg Inst Cargo Only	

IATA

International Maritime Dangerous Goods (IMDG) Code Requirements

Proper shipping name	PAINT
Hazard class	3
Special provisions	163, 640C
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242
Quantity limits passenger	5 L
Quantity limits cargo	60 L
Vessel stowage location	B
Item	F1
UN number	UN1263
Packaging group	II
Labels required	3
Hazard ID	33
Transport Category	2

IMDG

15. REGULATORY INFORMATION

US federal regulations

CERCLA/SARA - Section 313 - Emission Reporting

Toluene	108-88-3	1.0 % de minimis concentration

Inventory - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

Toluene	108-88-3	203-625-9

Inventory - United States - Section 8(b) Inventory (TSCA)

Toluene	108-88-3	Present

Occupational safety and health administration (OSHA)

29 CFR 1910.1200 hazardous chemical	Yes

CERCLA (superfund) reportable quantity

Toluene: 1000.0000

Superfund amendments and reauthorization act of 1986 (SARA)

Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	Yes
Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
NFPA ratings	Health: 2 Flammability: 3 Instability: 0

International regulations

Canada - 2004 NPRI (National Pollutant Release Inventory)

Toluene	108-88-3	Part 1, Group 1 Substance; Part 5 Substance

Canada - WHMIS - Ingredient Disclosure List

Toluene	108-88-3	1 % (English Item 1578, French Item 1622)

State regulations

California - Proposition 65 - Developmental Toxicity

Toluene	108-88-3	developmental toxicity, initial date 1/1/91

Massachusetts - Right To Know List

Toluene	108-88-3	Present

New Jersey - Right to Know Hazardous Substance List

Toluene	108-88-3	sn 1866

Pennsylvania - RTK (Right to Know) List

Toluene	108-88-3	Environmental hazard

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.
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MSDS sections updated	Disposal Considerations: Disposal instructions Other Information: Disclaimer