

1. PRODUCT AND COMPANY IDENTIFICATION

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|----------------------------|---|
| Product name | Thiokol 2235M Polysulfide Joint Sealant - Resin/Side A |
| Version # | 1.0 |
| Revision date | 17-Nov-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 |
|--|------------|---------|
| Carbonic acid, calcium salt (1:1) | 471-34-1 | < 40 |
| Titanium dioxide | 13463-67-7 | < 10 |
| Non-hazardous and other components below reportable levels | | > 60 |

3. HAZARDS IDENTIFICATION

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| Emergency overview | Danger of serious damage to health by prolonged exposure. May cause cancer. May cause breathing disorders and lung damage. |
| Potential short term health effects | |
| Inhalation | May cause breathing disorders and lung damage. |
| Ingestion | Do not ingest. |
| Target organs | Lungs. Respiratory system. |

4. FIRST AID MEASURES

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| 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 | Get medical attention 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. If breathing is difficult, give oxygen. Get medical attention, if needed. |
| 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 | Keep victim warm. Keep victim under observation. In case of shortness of breath, give oxygen. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. FIRE FIGHTING MEASURES

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| Suitable extinguishing media | Small Fires: Dry chemical, CO ₂ , water spray or regular foam. Large Fires: Water spray, fog or regular foam. |
| 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. |

Flash point 200 °F (93.3 °C) Pensky-Martens Closed Cup

6. ACCIDENTAL RELEASE MEASURES

Evacuation procedures 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.

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.

Methods for cleaning up 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.

7. HANDLING AND STORAGE

Handling Do not breathe gas/fumes/vapor/spray. Wear personal protective equipment. Do not handle or store near an open flame, heat or other sources of ignition. Surfaces may become slippery after spillage.

Storage Keep container tightly closed. 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 - Time Weighted Averages (TLV-TWA)

| | | |
|-----------------------------------|------------|--|
| Carbonic acid, calcium salt (1:1) | 471-34-1 | 10 Mg/m ³ TWA (particulate matter containing no asbestos and < 1% crystalline silica) |
| Titanium dioxide | 13463-67-7 | 10 Mg/m ³ TWA |

ACGIH - Threshold Limits Values - TLV Basis - Critical Effects

| | | |
|-----------------------------------|------------|------------|
| Carbonic acid, calcium salt (1:1) | 471-34-1 | irritation |
| Titanium dioxide | 13463-67-7 | lung |

OSHA - Final PELs - Time Weighted Averages (TWAs)

| | | |
|------------------|------------|---------------------------------------|
| Titanium dioxide | 13463-67-7 | 15 Mg/m ³ TWA (total dust) |
|------------------|------------|---------------------------------------|

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.

Skin and body protection Wear suitable protective clothing.

General 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. Handle in accordance with good industrial hygiene and safety practice for diagnostics. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL & CHEMICAL PROPERTIES

Density 13.08 lb/gal

Form Liquid.

Specific gravity 1.57

10. CHEMICAL STABILITY & REACTIVITY INFORMATION

Stability Stable at normal conditions.

Conditions to avoid Direct sources of heat.

Hazardous polymerization Will not occur.

Incompatibility None known.

11. TOXICOLOGICAL INFORMATION

Component analysis - LD50

NIOSH - Selected LD50s and LC50s

Carbonic acid, calcium salt (1:1) 471-34-1 Oral LD50 Rat: 6450 mg/kg

Carcinogenicity Cancer hazard.

ACGIH - Threshold Limits Values - Carcinogens

Titanium dioxide 13463-67-7 A4 - Not Classifiable as a Human Carcinogen

Chronic toxicity Prolonged or repeated exposure may cause lung injury.

12. ECOLOGICAL INFORMATION

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

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.

14. TRANSPORTATION INFORMATION

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

ERG number 138

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.

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

Carbonic acid, calcium salt (1:1) 471-34-1 207-439-9

Titanium dioxide 13463-67-7 236-675-5

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

Carbonic acid, calcium salt (1:1) 471-34-1 Present

Titanium dioxide 13463-67-7 Present

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

NFPA ratings

Health: 0
Flammability: 1
Instability: 0

State regulations**Massachusetts - Right To Know List**

Titanium dioxide 13463-67-7 Present

New Jersey - Right to Know Hazardous Substance List

Titanium dioxide 13463-67-7 sn 1861

Pennsylvania - RTK (Right to Know) List

Titanium dioxide 13463-67-7 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

17-Nov-2008

MSDS sections updated

Hazards Identification: Emergency Overview
Fire Fighting Measures: Suitable extinguishing media
Accidental Release Measures: Environmental precautions
Accidental Release Measures: Methods for cleaning up
Chemical Stability & Reactivity Information: Incompatibility
Ecological Information: Ecotoxicity
Ecological Information: Environmental effects