

### Section 1 - Product and Company Identification

Hazard Label CAUTION

#### Company Information

Johns Manville  
Insulation Systems  
P.O. Box 5108  
Denver, CO 80127 USA

Telephone: 303-978-2000  
Internet Address: <http://www.jm.com>  
Emergency: 800-424-9300 (Chemtrec)

Trade Names: Zeston® Heat Transfer Compounds Z10, Z20, Z30

**Use:** Used to provide a thermal bridge wherever external devices such as tracers or plate coils are used to maintain the temperature of material within process pipes or storage vessels.

### Section 2 - Hazards Identification

#### Inhalation

Irritation of the upper respiratory tract (scratchy throat), coughing, and congestion may occur in extreme exposures.

#### Skin

This product is irritating to the skin and may cause sensitization.

#### Ingestion

This product is not intended to be ingested (eaten). If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

#### Eyes

Temporary irritation (itching) or redness may occur.

### Section 3 - Composition/Information on Ingredients

CAS #	Component	Percent
1344-09-8	Sodium silicate	40-50
7782-42-5	Graphite	35-55
1302-78-9	Bentonite	5-18
7732-18-5	Water	5
56-81-5	Glycerin	2-3

#### Component Information

Note: Dusts generated from dried product are considered nuisance dust. Exposure limits for the actual mastic product have not been established.

#### General Product Description

Gray mastic. No significant odor.

### Section 4 - First Aid Measures

#### First Aid: Inhalation

Remove to fresh air. If symptoms persist contact a physician.

#### First Aid: Skin

Wash exposed skin with soap and water. If irritation develops or persists, seek medical attention.

#### First Aid: Ingestion

Product is not intended to be ingested or eaten. If this product is ingested, do not induce vomiting and seek medical attention immediately.

#### First Aid: Eyes

Flush eyes with large amounts of water until irritation subsides. If irritation persists, seek medical attention.

#### First Aid: Notes to Physician

Material is alkaline and may cause irritation to sensitive skin. Also, dust from the dried material is a nuisance dust, which may cause mechanical irritation to skin, eyes and upper respiratory system. This product is a mechanical irritant, and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

**Section 5 - Fire Fighting Measures****Flash Point:** Not applicable**Upper Flammable Limit (UFL):** Not applicable**Auto Ignition:** Not determined**Rate of Burning:** Not determined**General Fire Hazards**

There is no potential for spontaneous fire or explosion.

**Extinguishing Media**Carbon dioxide (CO<sub>2</sub>), dry chemical.**Fire Fighting Equipment/Instructions**

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

**Method Used:** Not applicable**Lower Flammable Limit (LFL):** Not applicable**Flammability Classification:** Not determined**Section 6 - Accidental Release Measures****Containment Procedures**

Remove all sources of ignition. Evacuate and ventilate spill area. Dam spill area with sand, earth, or other suitable absorbent. Prevent entry of material into sewers, other water sources, or land areas. Wear full protective clothing and respiratory protection during clean-up as required to maintain exposures below the applicable exposure limit. Shovel absorbed material into containers in well-ventilated area.

**Clean-Up Procedures**

Place in closable container for disposal.

**Section 7 - Handling and Storage****Handling Procedures**

Use protective equipment as described in Section 8 of this safety data sheet when handling uncontained material. Handle in accordance with good industrial hygiene and safety practices.

**Storage Procedures**

Warehouse storage should be in accordance with package directions, if any. Material should be kept clean and in original packaging.

**Section 8 - Exposure Controls / Personal Protection****A: Component Exposure Limits****Graphite (7782-42-5)**OSHA: 2.5 mg/m<sup>3</sup> TWA (respirable dust)  
15 mppcf TWAACGIH: 2 mg/m<sup>3</sup> TWA (respirable fraction, all forms except graphite fibers)**Glycerin (56-81-5)**OSHA: 15 mg/m<sup>3</sup> TWA (total); 5 mg/m<sup>3</sup> TWA (respirable fraction)  
10 mg/m<sup>3</sup> TWA (total dust); 5 mg/m<sup>3</sup> TWA (respirable fraction)ACGIH: 10 mg/m<sup>3</sup> TWA (mist)**PERSONAL PROTECTIVE EQUIPMENT****Personal Protective Equipment: Eyes/Face**

Safety glasses with side shields or chemical goggles are recommended.

**Personal Protective Equipment: Skin**

Impervious gloves such as nitrile rubber should be used to help prevent excessive skin contact.

**Personal Protective Equipment: Respiratory**

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust levels below the applicable exposure limits referenced in Section 8 of this SDS. Wear a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (per 42 CFR 84) when dust concentrations exceed the applicable exposure limits. Operations such as sawing, blowing, tear out, and spraying may generate airborne dust concentrations requiring a higher level of respiratory protection. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.

**Ventilation**

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting, milling or other processing to remove airborne dust.

**Personal Protective Equipment: General**

Protective equipment should be provided as necessary to prevent irritation of the throat, eyes, and skin, and to keep exposures below the applicable exposure limits identified in Section 8.

**Section 9 - Physical & Chemical Properties**

<b>Appearance:</b>	Gray mastic	<b>Odor:</b>	No specific odor
<b>Physical State:</b>	liquid	<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	Not determined	<b>Vapor Density:</b>	Not applicable
<b>Boiling Point:</b>	Not applicable	<b>Melting Point:</b>	Not applicable
<b>Solubility (H<sub>2</sub>O):</b>	40%	<b>Specific Gravity:</b>	2.0
<b>Freezing Point:</b>	Not determined	<b>Evaporation Rate:</b>	Not applicable
<b>Viscosity:</b>	Not determined	<b>Percent Volatile:</b>	Not determined
<b>VOC:</b>	Not determined		

**Section 10 - Stability & Reactivity Information****Stability**

These products are not reactive.

**Incompatibility**

Strong acids, alkalis, and oxidizing agents

**Hazardous Decomposition**

May form carbon dioxide, carbon monoxide, halogenated hydrocarbons, nitrogen oxides, various hydrocarbons.

**Hazardous Polymerization**

Will not occur.

**Section 11 - Toxicological Information****Acute Toxicity****A: General Product Information**

If dust evolves from this product during use it may cause temporary mechanical irritation or scratchiness of the throat and/or itching of the eyes and skin.

**B: Component Analysis - LD50/LC50****Sodium silicate (1344-09-8)**

Oral LD50 Rat: 1153 mg/kg; Dermal LD50 Rabbit:>4640 mg/kg

**Bentonite (1302-78-9)**

Oral LD50 Rat: >5000 mg/kg

**Water (7732-18-5)**

Oral LD50 Rat: >90 mL/kg

**Glycerin (56-81-5)**

Inhalation LC50 Rat: >570 mg/m<sup>3</sup>/1H; Oral LD50 Rat:12600 mg/kg; Dermal LD50 Rat:>21900 mg/kg

**Component Carcinogenicity**

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

**Section 12 - Ecological Information****Ecotoxicity****A: General Product Information**

No data available for this product.

**B: Component Analysis - Ecotoxicity - Aquatic Toxicity****Sodium silicate (1344-09-8)**

96 Hr LC50 Lepomis macrochirus: 301-478 mg/L; 96 Hr LC50 Brachydanio rerio: 3185 mg/L [semi-static]  
96 Hr EC50 Daphnia magna: 216 mg/L

**Bentonite (1302-78-9)**

96 Hr LC50 Salmo gairdneri: 8-19 g/L

**Glycerin (56-81-5)**

96 Hr LC50 Oncorhynchus mykiss: 51000-57000 mg/L  
24 Hr EC50 Daphnia magna: >500 mg/L

### Section 13 - Disposal Considerations

**US EPA Waste Number & Descriptions****A: General Product Information**

This product is not expected to be a hazardous waste when it is disposed of according to the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations. Product characterization after use is recommended to ensure proper disposal under federal and/or state requirements.

**B: Component Waste Numbers**

No EPA Waste Numbers are applicable for this product's components.

**Disposal Instructions**

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

### Section 14 - Transport Information

**International Transport Regulations**

These products are not classified as dangerous goods according to international transport regulations.

### Section 15 - Regulatory Information

**US Federal Regulations****A: General Product Information**

SARA 311 Status. The following SARA 311 designations apply to this product: Immediate (acute) health hazard.

**B: Component Analysis**

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

**State Regulations****A: General Product Information**

Other state regulations may apply. Check individual state requirements.

**B: Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Graphite	7782-42-5	Yes	No	Yes	Yes	Yes	Yes
Glycerin	56-81-5	No	No	Yes	Yes	Yes	Yes

**TSCA Status**

This product and its components are listed on the TSCA 8(b) inventory.

None of the components listed in this product are listed on the TSCA Export Notification 12(b) list.

**Component Analysis - WHMIS IDL**

No components are listed in the WHMIS IDL.

**WHMIS Classification**

This is not a WHMIS controlled product. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations. This SDS contains all the information required by the Controlled Products Regulations.

### Section 16 - Other Information

**Other Information**

Prepared for:  
Johns Manville  
Insulation Systems  
P. O. Box 5108

**Material Name: Heat Transfer Compound**

**Safety Data Sheet  
ID: 2010**

Denver, CO USA 80217-5108

Prepared by:  
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P.O. Box 625005  
Littleton, CO USA 80162-5005

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

<b>Date</b>	<b>MSDS #</b>	<b>Reason</b>
08/01/00	2010-1.0000	New MSDS authoring system.
05/22/01	2010-1.0100	Update DOT Information, Section 14.
11/06/03	2010-1.0101	Regulatory review. Minor edits.
01/19/09	2010-1.0102	Regulatory update. SDS updated to GHS format.

End of Sheet 2010