

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Spray Foam Polymers – Thermoseal A-Side
Chemical Name: POLYMETHANE POLYPHENYL ISOCYANATE
Manufacturer: Spray Foam Polymers
 PO Box 1182
 New Canaan, CT 06840
 Phone: 800-853-1577
 Fax: 888-319-4486

Supplied by: Spray Foam Polymers
Emergency Telephone #: Phone: 800-853-1577
Intended use of Product: Component of a Foam Insulation System

Section 2: HAZARDS IDENTIFICATION

Routes of Entry: Eye contact, Skin contact, Ingestion, Inhalation.
Acute Effects:
Eye Contact: May cause moderate eye irritation. May cause slight temporary corneal injury.
Skin Contact: Prolonged contact may cause skin irritation.
Inhalation: Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs.
Ingestion: May result in severe gastric disturbances.
See Toxicological Information (Section 11)

Section 3: COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient	Approximate Concentration	CAS #	Exposure Limits
Polymeric Diphenylmethane Diisocyanate	Upper Bound 55%	9016-87-9	Not available
Methylene Diphenyldiisocyanate	Upper Bound 45%	101-68-8	Not available

Consult local authorities for acceptable exposure limits

Section 4: FIRST AID MEASURES

Skin: Remove contaminated clothing. Clean exposed area with soap and water. Seek medical attention if irritation develops.
Eyes: Immediately flush thoroughly with water; remove contact lenses, if present, for at least 20 minutes lifting eye lids occasionally. Get immediate medical attention.
Inhalation: Remove to fresh air; give artificial respiration if not breathing. Get immediate medical attention.

Ingestion: If swallowed seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

NOTE TO PHYSICIANS:

This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 3-Swallowing) when deciding whether to induce vomiting. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: respiratory tract, skin, lung (for example, asthma-like conditions). Pulmonary edema may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with Inhaled beta2 agonist and oral or parenteral corticosteroids.

Section 5: FIRE FIGHTING MEASURES

FLASH POINT: > 399°F (closed cup)

EXPLOSIVE LIMIT: No Data

AUTOIGNITION TEMPERATURE: No Data

HAZARDOUS PRODUCTS OF COMBUSTION:

May form: carbon dioxide and carbon monoxide, hydrogen cyanide, nitrogen compounds and various hydrocarbons.

OTHER FLAMMABILITY INFORMATION:

Isocyanates react with water. This reaction may produce heat and or gasses. This reaction may be violent. Closed containers (tanks, drums, etc.) may rupture from gases generated during the fire situation. Violent steam generation may occur upon direct application of a water stream to the hot liquids. Burning product produces dense smoke.

FIRE AND EXPLOSIVE HAZARDS:

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

EXTINGUISHING MEDIA:

Dry chemical; Carbon Dioxide; Foam; Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES:

Water or foam may cause frothing which can be violent and possibly endanger the life of the firefighter. Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. (See Stability and Reactivity). At temperatures greater than 400°F, polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers.

Section 6: ACCIDENTAL RELEASE MEASURES**SPILL OR LEAK PROCEDURES:**

Evacuate and ventilate the spill area; dike spill to prevent entry into water system; wear full protective equipment, including respiratory equipment during clean-up. (See Employee Protection Recommendations).

MAJOR SPILL: If temporary control of isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed, but not sealed, container for disposal.

MINOR SPILL: Absorb isocyanates with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well ventilated area (outside) and treat with neutralizing solution: mixture of water (80%), with non-ionic surfactant Tergitol TMN-10 (20%), or; Water (90%), concentrated ammonia (3-8%) and detergent (2%). Add about 10 parts of neutralizer per part of isocyanate, with mixing. Allow to stand uncovered for 48 hours to let CO₂ escape.

CLEAN-UP: Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

Section 7: HANDLING AND STORAGE

STORAGE TEMPERATURE (MIN/MAX): 50°F-80°F

SHELF LIFE: 6 Months

SPECIAL SENSITIVITY:

If container is exposed to high heat, 400°F (204°C) it can be pressurized and possibly rupture. MDI reacts slowly with water to form CO₂ gas. This gas can cause sealed containers to expand and possibly rupture.

HANDLING/STORAGE PRECAUTIONS:

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with skin and eyes. Do not breathe aerosols or vapors. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This material can produce asthmatic sensitization upon either a single inhalation exposure to relatively high concentrations or repeated exposures to low concentrations. Exposure to vapors of heated MDI can be extremely dangerous.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTIONS**EYE PROTECTION REQUIREMENT:**

Liquid chemical goggles. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be used in combination with a full face-shield.

SKIN PROTECTION REQUIREMENTS:

Permeation resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

VENTILATION REQUIREMENTS:

Local exhaust should be used to maintain levels below the TLV whenever MDI is processed, heated or spray applied. Standard reference sources regarding industrial ventilation (i.e., ACGIH Industrial Ventilation) should be consulted for guidance about adequate ventilation.

RESPIRATOR REQUIREMENTS:

Concentrations greater than the TLV can occur when MDI is sprayed, heated or used in poorly ventilated area. In such cases, or whenever concentrations of MDI exceed the TLV or are not known, respiratory protection must be worn. A supplied air respirator (either positive pressure or continuous flow type) is required. In an emergency situation, a self-contained breathing apparatus may be used. MDI has poor warning properties, since the concentration at which MDI can be smelled is substantially higher than the maximum exposure limit. Observe OSHA regulations for respirator use (29 CFR 1910.134).

MONITORING:

Isocyanate exposure levels must be monitored. Monitoring of airborne isocyanates in the breathing zone of individuals should become part of the overall employee exposure characterization program. Monitoring techniques have been developed by NIOSH, and OSHA.

MEDICAL SURVEILLANCE:

Medical supervision of all employees who handle or come in contact with isocyanates is recommended. These should include pre-employment and periodic medical examinations with pulmonary function tests (FEV, FVC as a minimum). Persons with asthmatic-type recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted.

ADDITIONAL PROTECTIVE MEASURES:

Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**Physical State** Liquid**Color** Brown**Odor** Musty**Odor Threshold** No test data available**Flash Point - Closed Cup** > 204 °C (> 399 °F) *Vendor***Flammability (solid, gas)** No**Flammable Limits In Air Lower:** No test data available**Upper:** No test data available**Autoignition Temperature** No test data available**Vapor Pressure** < 0.00001 mmHg @ 25 °C *Vendor***Boiling Point (760 mmHg)** No test data available**Vapor Density (air = 1)** No test data available**Specific Gravity (H2O = 1)** 1.24 *Vendor***Freezing Point** No test data available**Melting Point** Not applicable**Solubility in Water** insoluble, reacts, evolution of CO₂**(by weight)****pH** Not applicable**Decomposition** No test data available**Temperature****Partition coefficient, n** No data available for this product.**octanol/water (log Pow)****Evaporation Rate (Butyl** No test data available**Acetate = 1)****Kinematic Viscosity** 150 - 220 cSt *ASTM D4878***Section 10: STABILITY AND REACTIVITY****STABILITY:** This is a stable material under recommended storage conditions.**HAZARDOUS POLYMERIZATION:** May occur: Contact with moisture, other materials will react with isocyanates, or temperatures above 4000°F (2040°C) may cause polymerization.**INCOMPATIBILITIES:** Water, amines, strong bases, alcohols and polyols will react with MDI generating heat and possible off-gasses (carbon dioxide, in the case of water). If allowed to continue, these reactions may become increasingly exothermic and cause closed-container rupture. Avoid contact with metals such as copper alloys, tin, zinc and aluminum: corrosion may result.**INSTABILITY CONDITIONS:** Contamination with water and high temperatures (greater than 4000°F. (2040°C)**DECOMPOSITION PRODUCTS:** By high heat and fire: carbon monoxide, oxides of nitrogen, traces of HCN, MDI vapors or aerosols.

Section 11: TOXICOLOGICAL INFORMATION

LD50-LC50 Mixture: LD50 RAT ORAL 10,000 mg/KG

Section 12: ECOLOGICAL INFORMATION**ENVIRONMENTAL FATE****Movement & Partitioning**

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

ECOTOXICITY

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Toxicity to Soil Dwelling Organisms

LC50, Earthworm *Eisenia foetida*, adult, 14 d: > 1,000 mg/kg

Section 13: DISPOSAL CONSIDERATIONS**WASTE DISPOSAL METHOD:**

Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method.

EMPTY CONTAINER PRECAUTIONS:

Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. Do NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH. (See Fire Fighting Measures and Stability and Reactivity). Gases may be highly toxic.

Section 14: TRANSPORT INFORMATION**DOT Non-Bulk**

NOT REGULATED

DOT Bulk

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S.

Technical Name: MDI

Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III

IMDG

NOT REGULATED

ICAO/IATA

NOT REGULATED

Additional Information

Reportable quantity: 10,000 LB – MDI

Section 15: REGULATORY INFORMATION**OSHA STATUS:**

This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes

Delayed (Chronic) Health Hazard Yes

Fire Hazard No

Reactive Hazard Yes

Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component CAS # Amount

Diphenylmethane Diisocyanate, isomers and 9016-87-9 100.0%

Homologues 4,4'-Methylenediphenyl diisocyanate 101-68-8 $\geq 40.0 - \leq 50.0$ %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component CAS # Amount

4, 4'-M ethylenediphenyl diisocyanate 101-68-8 $\geq 40.0 - \leq 50.0$ %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA – Domestic Substances List (DSL)

All substances contained in this product are listed

Section 16: OTHER INFORMATION

“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 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 **Spray Foam Polymers** HEREUNDER ARE GIVEN GRATIS AND **Spray Foam Polymers** ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK”. **Spray Foam Polymers WILL** NOT MAKE ITS PRODUCTS AVAILABLE TO CUSTOMERS FOR USE IN THE MANUFACTURE OF MEDICAL DEVICES WHICH ARE INTENDED FOR PERMANENT IMPLANTATION IN THE HUMAN BODY OR IN PERMANENT CONTACT WITH INTERNAL BODILY TISSUES OR FLUIDS. WE AT **Spray Foam Polymers** TAKE PRIDE IN OUR PRODUCTS, AND OUR TRADITION OF DEVELOPING INNOVATIVE APPLICATIONS IN PARTNERSHIP WITH OUR CUSTOMERS. HOWEVER, THE POSSIBILITY OF BEING REQUIRED TO RESPOND TO UNFOUNDED LITIGATION AND/OR CLAIMS ARISING OUT OF CONCERNS RELATING TO SUCH USE PRESENTS AN UNACCEPTABLE RISK TO THE COMPANY.

Other special considerations: No additional remark

DATE: April 21, 2015

REVISION 2

PREPARED BY: Spray Foam Polymers