

SWD URETHANE COMPANY

Material Safety Data Sheet

MSDS-SWD 125 "A"

15-NOVEMBER 2003

SWD 125 "A"

1. CHEMICAL PRODUCT/ COMPANY IDENTIFICATION

Material Identification

PRODUCT NAME **SWD 125 "A"**
CHEMICAL FAMILY Aromatic Isocyanate
CHEMICAL NAME Isocyanic Acid, Polymethylene Polyphenylene Ester
SYNONYMS Polymeric Diphenylmethane Diisocyanate (MDI)
CAS NUMBER 9016-87-9
FORMULA Not Applicable

Company Identification

MANUFACTURER/ DISTRIBUTOR

SWD Urethane Company
 539 South Drew Street
 Mesa, Arizona 85210

PHONE NUMBERS

Transportation Emergency/ Chemtrec: 1-800-424-9300
 SWD Urethane Company/ Emergency: 1-800-828-1394

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Material:	CAS Number	Percent
4,4'-Diphenylmethane Diisocyanate (MDI).....	101-68-8.....	40-55 %
Diphenylmethane Diisocyanate (2,2; 2,4)	26447-40-5.....	1-10 %
Higher Oligomers of MDI	9016-87-9.....	45-55 %
Phenyl Isocyanate.....	103-71-9.....	trace %

Ingredients not identified are proprietary or non-hazardous.
 Values are not product specifications.

Regulated as a Toxic Chemical under Section 313 of Title III of the
 Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

3. HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****
 * IRRITANT TO EYES, SKIN AND RESPIRATORY PASSAGES.
 * DARK BROWN LIQUID.

Potential Health Effects:

EYE: Contact with liquid product or fumes will cause irritation.

SKIN: Contact may cause irritation.

INGESTION: Not a likely route of exposure. Relatively non-toxic

INHALATION: Irritation of the nose, throat, and lungs may result from exposure to vapors or mist. Severe overexposure may cause pulmonary edema. Can cause asthma like symptoms. May aggravate existing conditions.

CHRONIC (CANCER) INFORMATION: Not classified as carcinogenic.

LONG TERM TOXIC EFFECTS: Skin and respiratory sensitization may result.

4. FIRST AID MEASURES

First Aid:

INHALATION: Remove to fresh air.

SKIN CONTACT: Wash thoroughly. Consult medical personnel if irritation develops.

EYE CONTACT: Irrigate eyes with running water for at least 15 minutes. Get medical attention.

INGESTION: None applicable but consult a physician.

NOTE TO PHYSICIAN:..... Eyes. Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision.
Skin. This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn.
Ingestion. Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound.
Respiratory. This compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any Isocyanate.

5. FIRE FIGHTING MEASURES

FLASH POINT 390 des. F (198.8 deg. C) Pensky-Martens Closed Cup (ASTM D-93)

EXTINGUISHING MEDIA..... Dry Chemical; Carbon Dioxide; Foam; Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES:.... Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire, MDI vapors and other irritation, highly toxic gases may be generated by thermal decomposition or combustion. (See Section VIII). At temperatures greater than 400 deg. F (204 deg. C), polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE (MIN/ MAX):.....64 deg.F (18 deg.C) 86 deg. F (30 deg. C)
 SHELF LIFE:.....Six months
 SPECIAL SENSITIVITY.....If container is exposed to high heat, 400 deg. F (204 deg. C), it can be pressurized and possibly rupture. MDI reacts slowly with water to form carbon dioxide gas which can cause sealed containers to expand and possibly rupture.

HANDLING/ STORAGE PRECAUTION:..... 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 single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Exposure to vapors of heated MDI can be extremely dangerous. Employee education and training in the safe handling of this compound are required under the OSHA Hazard Communication Standard.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

EYE PROTECTION REQUIREMENTS:.. ...Chemical tight goggles full-face shield if splashing is possible.

SKIN PROTECTION REQUIREMENTS:.. Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before rewearing.

RESPIRATOR REQUIREMENTS:..... ... Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full-face piece, or an air-supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against Isocyanates.

VENTILATION REQUIREMENTS:..... ... If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation." Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

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. NIOSH, and OSHA have developed monitoring techniques.

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 (FEV₁, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or 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.

Exposure Guidelines / Exposure Limits

4,4'-Diphenylmethane-diisocyanate
 OSHA (PEL): 0.02 ppm
 ACGIH (TLV): 0.005 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM Liquid
 COLOR Dark Brown
 ODOR Slightly musty odor
 MOLECULAR WEIGHT About 350
 pH Not Established
 BOILING POINT 406 deg. F (208 deg. C) at 5 mm Hg for MDI
 MELTING/ FREEZING POINT Below 32^o F (0^o C) for MDI
 SOLUBILITY IN WATER Not soluble. Reacts slowly with water to liberate CO₂ gas.
 SPECIFIC GRAVITY 1.24 @ 77 deg. F (25 deg. C)
 BULK DENSITY 10.3 lbs/gal
 VOLATILITY BY VOLUME (%) Negligible
 VAPOR PRESSURE Less than 10-5 mm Hg at 77 deg. F (25 deg. C) for MDI
 VAPOR DENSITY 8.5 (MDI) (Air = 1)

10. STABILITY AND REACTIVITY

STABILITY: This is a stable material.

HAZARDOUS POLYMERIZATION:..... May occur. Contact with moisture or other materials which react with isocyanates, or temperatures above 400 deg. F (104 deg. C), may cause polymerization.

INCOMPATIBILITIES: Water, amines, strong bases, alcohols. Will cause some corrosion to copper alloys and aluminum.

INSTABILITY CONDITIONS: Contamination with water.

DECOMPOSITION PRODUCTS:..... By high heat and fire: carbon monoxide, oxides of nitrogen, traces of HCN, MDI vapors or aerosols.

11. TOXICOLOGICAL INFORMATION

ROUTE(S) OF ENTRY:..... Skin Contact from liquid and aerosols (spray application). Inhalation. Although MDI is low in volatility, an inhalation hazard can exist from MDI aerosols or vapors formed during heating, foaming or spraying.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION:.....	MDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a pre-existing, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar systems as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, chills) has also been reported. These systems can be delayed up to several hours after exposure.
CHRONIC INHALATION:.....	As a result of previous repeated overexposures or a single large dose, certain individuals develop Isocyanate sensitization (chemical asthma), which will cause them to react to a later exposure to Isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function), which may be permanent. Sensitization can either be temporary or permanent.
ACUTE SKIN CONTACT:.....	Isocyanates react with skin protein and moisture and can cause irritation, which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.
CHRONIC SKIN CONTACT:.....	Prolonged contact can cause reddening, swelling, rash, scaling, blistering and in some cases, skin sensitization. Individuals who have skin sensitization can develop these symptoms from contact with liquid or vapors.
ACUTE EYE CONTACT:.....	Liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.
CHRONIC EYE CONTACT:	None Found
ACUTE INGESTION:.....	Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.
CHRONIC INGESTION:.....	None Found

None of the components are listed as carcinogens.

12. ECOLOGICAL INFORMATION

No data.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14. TRANSPORTATION INFORMATION

TECHNICAL SHIPPING NAME: Diphenylmethane 4, 4'Diisocyanate
 FREIGHT CLASS BULK: Chemicals, NOI (Isocyanate)
 FREIGHT CLASS PACKAGE: Chemicals, NOI (Isocyanate) NMFC 60000
 PRODUCT LABEL: SWD 125 "A"

DOT (HM-181)

PROPER SHIPPING NAME: Other regulated substances, liquid, n.o.s.
 (Methylene Diphenyl Diisocyanate)

UN/NA NUMBER..... NA3082

PG.....III

HAZARDOUS CLASS9

Single containers less than 5,000 lbs. are not regulated.

15. REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status: Reported/ Included.

CERCLA and SARA Regulations (40 CFR 355, 370, and 372): Section 313, Supplier Notification.

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

40-55% MDI, listed as Methylenebis (phenylisocyanate), MBI - N 120 Diisocyanate category 94-96 %

16. OTHER INFORMATION

This law requires that certain industrial facilities which manufactures/uses these chemicals to report annually on emissions and waste management of these chemicals. Additional information is available at the EPA's EPCRA hotline: 800-424-9346.

Additional Information

NA = Not Applicable

NE = Not Established

= Indicates updated section

STATE RIGHT-TO-KNOW LAWS

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated. While we do not specifically analyze these products, or the raw materials used in their manufacture, for substances on various state hazardous substances lists, to the best of our knowledge the products on this Material Safety Data Sheet

contain no such substances except for those specifically listed below:

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER:
None known.

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS
OR OTHER REPRODUCTIVE HARM: None known.

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of SWD Urethane Company. The data on this sheet relates only to the specific material designated herein. SWD Urethane Company assumes no legal responsibility for use or reliance upon this data.

Responsibility for MSDS

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