

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH)

1. PRODUCT IDENTIFICATION

Trade Name(s): Urethane 105-D
Product Description: Expandable urethane foam
Synonyms: Aromatic Isocyanate
CAS No: N/A

Supplier:
EPRO Services, Inc.
PO Box 347
Derby, KS 67037
800-882-1896 (8:00am – 5:00pm CST)

2. HAZARD(S) IDENTIFICATION

Acute tox: Acute toxicity (inhalation) 4 (material is designed and intended to be pumped, not sprayed. MDI becomes more hazardous when atomized (sprayed).

Skin irrit: Skin corrosion/irritation 2

Eye irrit: Serious eye damage/irritation 2A

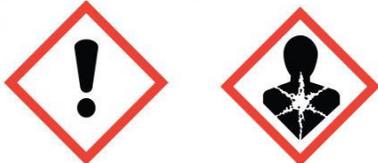
Resp. sens: Respiratory sensitization 1

Skin sens: Skin sensitization 1

Carc: Carcinogenicity 2

STOT SE: (Respiratory System) Specific target organ toxicity – single exposure 1

Signal Word: Danger



Skin Contact: Causes skin irritation. May cause an allergic skin reaction.

Eye Contact: Causes serious eye irritation.

Ingestion: ingestion could result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. These irritations would be followed by vomiting and cramps.

Inhalation: Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Causes damage to internal organs (respiratory tract) through prolonged or repeated exposure if inhaled.

Precautionary Statements: Do not handle until all safety precautions have been read and understood. Do not breathe vapors. In case of inadequate ventilation wear respiratory protection. Wear protective gloves and eye protection. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Store locked up. Keep away from children. Dispose of contents and container in accordance with applicable local, regional, and national regulations.

Hazard Statement: Chronic: As a result of previous repeated overexposure or a single large dose, certain individuals develop isocyanine sensitization (chemical asthma) or tissue injury in the upper respiratory tract. Animal tests indicate skin contact alone may also lead to allergic respiratory reaction. These effects may be permanent. Any person developing asthmatic reaction or other sensitization should be removed from further exposure.

Potential Health Effects: Contains isocyanates. Inhalation of isocyanate mists/vapors may cause respiratory irritation, breathlessness, chest discomfort and reduced pulmonary functions. Overexposure well above the PEL may result in bronchitis, bronchial spasms, and pulmonary edema. Long-term exposure to isocyanates has been reported to cause lung damage, including reduced lung function which may be permanent. Acute or chronic overexposure to isocyanates may cause sensitization in some individuals, resulting in allergic respiratory reactions including wheezing, shortness of breath and difficulty breathing. Animal tests indicate that skin contact may play a role in causing respiratory sensitization. Persons with Known Respiratory or Allergy Problems Must Not Be Exposed to This Product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	% By Weight	Exposure Limits	CAS #
4.4' Diphenylmethane diisocyanate (MDI)	Trade Secret	N.E.	101-68-8
Vycel U	14%	N.E.	68477-30-5
104	Trade Secret	N.E.	

4. FIRST-AID MEASURES

Eyes: Flush eyes with plenty of water for at least 15 minutes. Materials containing MDI may react with the moisture of the eye forming a thick material that may be difficult to wash from the eyes. Seek medical attention.

Skin: Wash off in flowing water or shower. Remove and wash contaminated clothing and discard contaminated shoes. Seek medical attention if redness, itching or a burning sensation develops or persists after the area is washed.

Ingestion: If swallowed, drink 1 or 2 glasses of water or milk. Do not induce vomiting unless directed to do so by medical personnel. If gastrointestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person.)

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility immediately

NOTE TO PHYSICIAN:

Eyes: Strain 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 material 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 of the irritating nature of this product.

5. FIRE-FIGHTING MEASURES

Fire Degradation Products: Harmful if inhaled. Toxic fumes are released in fire situations

Extinguishing Media: Dry chemical, carbon dioxide foam, water spray for large fires

Protective equipment: In case of fire, use normal firefighting equipment including a NIOSH approved, self-contained breathing apparatus (SCBA). Use water to cool containers.

Flammable Limits: LEL:(%)N.D. UEL: (%) N.D.

6. ACCIDENTAL RELEASE MEASURES

Spill: Evacuate spill area. With adequate ventilation and appropriate personal protective equipment, cover the area with an inert absorbent such as clay or vermiculite and transfer to metal waste containers. Saturate with water or decontamination solution below, but do not seal the container with the isocyanate mixture. Larger quantities of liquid may be transferred directly to drums for disposal.

Clean up: The area should then be flushed with a decontamination solution. The decontamination solution is a 5-10% mixture of sodium carbonate and .5% liquid detergent in water solution or a 3% concentrated ammonium hydroxide and .5% liquid detergent in water. Use 10 parts decontamination solution to 1 part spilled material. If the ammonium hydroxide solution is used, ammonia will be evolved as a vapor. Use caution to avoid exposure to high concentrations of ammonia. Allow to stand for 48 hours letting evolved carbon dioxide to escape.

Note: Isocyanate will react with water and generate carbon dioxide. This could result in the rupture of any closed container.

Disposal: Any disposal practice must be in compliance with all federal, state, and local laws and regulations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate, or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. Refer to

RCRA 40 CFR 261 and/or any other appropriate federal, state, or local requirements for proper classification information.

Container Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 1 to 5 gallons of decontamination solution into the drum making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hours. Pour out the decontamination solution and triple rise the empty container. Puncture or otherwise destroy the rinsed container before disposal. Do not heat or cut empty containers with electric or gas torch.

7. HANDLING AND STORAGE

Storage: When stored between 60°F and 85°F (15°C and 30°C) in sealed containers, typical shelf life is 6 months or more from the date of manufacture. Consult technical data sheet for shelf life requirements affecting performance quality. Should freezing occur, the material must be thawed thoroughly and mixed until uniform. Opened containers must be handled properly to prevent moisture contamination.

Handling: Heating: Use personal protective equipment when transferring material to or from drums, totes, or other containers. Safety glasses and gloves are the minimum protection. Additional precautions must be used when splash hazards are present. The reaction of polyols and isocyanates generate heat. Contact of the reacting materials with skin or eyes can cause severe burns and may be difficult to remove from the affected areas. Immediately wash affected areas with plenty of water and seek medical attention. In addition, such contact increases the risk of exposure to isocyanate vapors. Do not smoke or use naked lights, open flames, space heaters or other ignition sources near pouring or frothing operations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure: MDI contains reactive isocyanate groups. Use with adequate ventilation to keep airborne isocyanate level below TLV or 0.005 ppm TWA (ACGIH) and PEL 0.02 ppm ceiling (OSHA). These control limits do not apply to previously sensitized individuals or to individuals with existing respiratory disease, such as bronchitis, emphysema, or asthma. Respiratory protection may be needed where material is heated,

sprayed, or used in confined space, or if TLV is exceeded. Never try to detect MDI vapor by odor.

Persons with known respiratory or allergic problems must not be exposed to this product.

Respiratory Protection: A supplied air, full face piece, positive pressure or continuous flow respirator or a supplied air hood is required when airborne concentrations are unknown or exceed threshold values. A positive pressure self-contained breathing apparatus can be used in emergencies or other unusual situations. All equipment must be NIOSH/MSHA approved and maintained. Air purifying (cartridge type) respirators are not approved for protections against isocyanates.

Ventilation: MDI has a very low vapor pressure at room temperature. General/local ventilation typically controls exposure levels very adequately. More aggressive engineering controls or personal protective equipment may be required in some applications such as heating. Monitoring is required to determine engineering controls.

Eye Protection: Chemical splash goggles or safety glasses or full-face shield must be used consistent with splash hazard present. If vapor exposure causes eye discomfort, use a full-face piece respirator or air supplied hood.

Protective Clothing: Wear clothing and gloves impervious to MDI under conditions of use. Materials may include butyl rubber, nitrile rubber, neoprene and Saranex coated Tyvek. **Protective Gloves:** Rubber or polyethylene.

9. PHYSICAL AND CHEMICAL PROPERTIES

Flash Point: 398°F (method=PMCC)

Boiling Point: 406°F 5 mm HG

VD: 1.5 (MDI) Air = 1

% Volatile by wt: ND

Solubility in Water: Resin reacts slowly to liberate CO₂ gas

Flammable Limits: LEL 9% N.D. – UEL (%) N.D.

Density: 10.31 lb/gal

VP: <10 5 (NW HG)

Evaporation Rate: Slower than ethyl ether

10. STABILITY AND REACTIVITY

Stability: Polyisocyanates are highly reactive chemicals and should be handled and stored in a way to avoid exposure to many common substances, including water and moisture. Material is stable when stored in sealed containers under normal conditions. Avoid extended exposure over 110°F (45°C).

Hazardous Polymerization: May occur with incompatible reactants especially strong bases, water, or temperatures over 320°F (160°C). Possible evolution of carbon dioxide gas from overheating or exposure to contaminants may rupture closed containers.

Reactivity: Reacts with water, acids, bases, alcohols, metal compounds. The reaction with water is very slow under 102°F (50°C) but is accelerated at higher temperatures and in the presence of alkalis, tertiary amines, and metal compounds. Some reactions can be vigorous or even violent.

11. TOXICOLOGICAL INFORMATION

Toxicity data for 4,4' Diphenylmethane diisocyanata (MDI)

Acute Inhalation Toxicity: LC50: 369 mg/m³, 4 hrs (rat Male/Female)

Acute Inhalation Toxicity: LC50: >2240 mg/m³, aerosol (rat)

Acute Dermal Toxicity: > 10,000 mg/kg (rabbit)

Skin Irritation: (rabbit) draize test: Slightly irritating

Eye Irritation: (rabbit) draize test: Slightly irritating

Sensitization Dermal: (guinea pig) maximisation test (GPMT) inhalation: Sensitizer

Repeated Dose Toxicity: 90 days, inhalation: NOAEL: 0.3 mg/m³, (rat, male/female, 18 hrs/days, 5 days/week): Irritation to lungs and nasal cavity

Mutagenicity: Genetic toxicity in Vitro: Ames: (samonella typhimurium, metabolic activation: with/without)

Positive and Negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing the positive Mutagenicity results

Carcinogenicity: (rat), female, inhalation, 2 years, 17 hrs/day, 5 days/week: Negative

Inhalation: As a result of previous repeated overexposure or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) or tissue injury in the upper respiratory tract.

Animal tests indicate skin contact alone may also lead to allergic respiratory reaction. These effects may be permanent. Any person developing asthmatic reaction or other sensitization should be removed from further exposure.

This material is designed and intended to be pumped, not sprayed. MDI becomes more hazardous when atomized (sprayed). The following data is derived from tests performed when the material is sprayed and should be considered but may not apply to pumping operations as recommended by the manufacturer. Harmful if inhaled. Toxic fumes are released in fire situations.

12. ECOLOGICAL INFORMATION (non-mandatory)

Ecotoxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers).

Biodegradation: 0 %, Exposure time: 28 d, i.e. not degradable

Bioaccumulation: *Oncorhynchus mykiss* (rainbow trout), Exposure time: 112 d, < 1 BCF Does not bioaccumulate.

Acute Toxicity to Aquatic Invertebrates: EC50: > 1,000 mg/l (Water flea (*Daphnia magna*), 24 h)

Toxicity to Aquatic Plants: NOEC: 1,640 mg/l, End Point: growth (*Green algae (Scenedesmus subspicatus)*, 72 h)

Ecological Data for Polyurethane Prepolymer

Additional Ecotoxicological Remarks

Ecological Data for 4,4' – Diphenylmethane Diisocyanate (MDI) Acute and Prolonged Toxicity to Fish:

LC50: > 500 mg/l (*Zebra fish (Brachydanio rerio)*, 24 h)

Acute Toxicity to Aquatic Invertebrates

EC50: > 500 mg/l (Water flea (*Daphnia magna*), 24 h)

13. DISPOSAL CONSIDERATIONS (non-mandatory)

Disposal: Any disposal practice must be in compliance with all federal, state, and local laws and regulations.

Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate, or otherwise inappropriate. Waste characterization and disposal compliance is the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. Refer to RCRA 4 CFR 261 and/or any other appropriate federal, state, or local requirements for proper classification information.

Container Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 1 to 5 gallons of decontamination solution into the drum making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hours. Pour out the decontamination solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal. Do not heat or cut empty containers with electric or gas torch.

RCRA/EPA Waste Information: The generation of waste should be avoided or minimized whenever possible. Chemical waste, even small quantities, should never be poured down drains, sewers, or waterways.

14. TRANSPORT INFORMATION (non-mandatory)

DOT (Domestic surface): Shipping name: Compound resin. Not regulated (Class55)

IMO (Ocean): Not regulated

ICAO (AIR): Not regulated

15. REGULATORY INFORMATION (non-mandatory)

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

TSCA Status: On the TSCA inventory

No substances are subject to TSCA 12(b) export notification requirements.

US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:

4,4'-Diphenylmethane Diisocyanate Reportable quantity: 5000 lbs (MDI)

Canadian CEPA DSL Status: All components are listed or exempt.

CERCLA Reportable Quantity: 4,4, Diphenylmethane Diisocyanate = 5,000 lbs

SARA Title III

Section 311/312 Hazard Categories: None

Section 313 Toxic Chemicals: Immediate Health Hazard, Delayed Health Hazard, Reactive Hazard.

RCRA Status: MDI is not a hazardous waste. Under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24)

16. OTHER INFORMATION

This information provided on this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designated only as a guide for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.