



**URETHANE
TECHNOLOGY
COMPANY, INC.**

MATERIAL SAFETY DATA SHEET

**EMERGENCY CONTACT: Call CHEMTREC
800-424-9300 (24 HOURS) FOR SPILLS, LEAKS, FIRE & EXPOSURE**

Issue Date: 01/04/04

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SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Material name: **UTC – A COMPONENT (Polymeric MDI)**
Product Usage: Component of a two-part polyurethane system
Company Info: URETHANE TECHNOLOGY CO
59-77 TEMPLE AVENUE
NEWBURGH NY 12550
(845) 561-5500

UTC “A” COMPONENT IS PART OF A POLYURETHANE SYSTEM. THIS MATERIAL SAFETY DATA SHEET SHOULD BE READ IN ITS ENTIRETY ALONG WITH UTC COMPONENT “B” PRIOR TO USING THIS PRODUCT.

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING!

Reacts slowly with water to produce carbon dioxide but reaction accelerates at higher temperatures. Toxic gases/fumes may be given off during burning or thermal composition. Closed container may forcibly rupture under extreme heat or when contents have been contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory sensitizer. Lung damage and respiratory sensitization may be permanent. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction. Causes eye irritation. May cause lung damage.

Phys Appearance – Liquid

Color – Brown

Potential Acute Health Effects

Eyes – Hazardous in case of eye contact (irritant).

Skin - Hazardous in case of skin contact (irritant).

Inhalation – Hazardous in case of inhalation (lung irritant).

Ingestion – Slightly hazardous in case of ingestion.

SECTION 3 INFORMATION ON INGREDIENTS (COMPOSITION)

Polymeric Diphenylmethane Diisocyanate		9016-87-9
Component Ingredients	%	CAS#
4,4'-Diphenylmethane Diisocyanate (MDI)	60-100	101-68-8
Diphenylmethane Diisocyanate Homopolymer	20-30	25686-28-6
Diphenylmethane Diisocyanate – Mixed Isomers	<2	26447-40-5

SECTION 4 FIRST AID

Eye Contact – Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin Contact – Remove contaminated clothing. After contact with skin, wash immediately with plenty of warm soapy water. If symptoms develop, obtain medical attention. Contaminated clothing should be thoroughly cleaned. An MDI study showed that a polyglycol based type skin cleanser or corn oil may be more effective than soap & water.

Inhalation – Remove patient from exposure, keep warm and at rest. Obtain immediate medical attention. If breathing is labored, oxygen should be given by qualified personnel. Apply artificial respiration if breathing has ceased or shows signs of failing.

Ingestion – Do not induce vomiting. Provided the patient is conscious, wash out mouth with water. Obtain medical attention.

Note to Physician – Exposure may cause asthma-like symptoms or aggravate pre-existing asthma or other respiratory disorders. Bronchodilators, expectorants, and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Symptomatic and supportive therapy as needed. Persons receiving significant exposure should be monitored for at least 48 hours.

SECTION 5: FIRE FIGHTING MEASURES

Autoignition Temp - >1100°F/ 600°C

Flash Point - >400°F/204°C

Flammable Limits – LFL/UFL Not applicable

Combustion Products – Carbon Monoxide, Carbon Dioxide, nitrous Oxide and HCN.

Extinguishing Media – SMALL FIRE: Use dry chemical powder. LARGE FIRE: Use water spray, fog or foam. Do NOT use direct water stream. May spread fire. Keep people away.

Protective Clothing – Splash goggles. Full suit. Boots. Gloves. A self-contained breathing apparatus (SCBA) should be used to avoid inhalation of product.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Protect people – Isolate area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill.

Small Spill – Clean up should be performed by trained personnel. People dealing with major spillages should wear full protective clothing including appropriate respiratory protection. Evacuate the area. Prevent further leakage, spillage, or entry into drains.

Large Spill - Contain and absorb large spillages into an inert, non-flammable absorbent carrier (such as sand). Shovel into open-top drums or plastic bags for further decontamination. Wash the spillage area clean with liquid decontaminant. Remove and properly dispose of residues. *Notify applicable government authorities if release is reportable. The CERCLA RQ for 4,4 MDI is 5,000 lbs.*

Decontaminant – Prepare a decontamination solution of 0.2%-0.5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for ammonium hydroxide). Allow deactivated material to stand for at least 30 minutes before shoveling into drums. Do not tighten the bungs. Mixing with wet earth is also effective, but slower.

SECTION 7: HANDLING AND STORAGE

Handling – Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Use with adequate ventilation. Wash thoroughly after handling. Keep container tightly closed.

Storage – Keep containers properly sealed and stored in a well ventilated dry place. Keep contents away from moisture. Due to reaction with water, producing CO₂ gas, a hazardous buildup of pressure could result if contaminated containers are resealed. Do not reseal contaminated containers. Do not store in containers made of copper, copper alloys or galvanized surfaces.

Ideal Storage Temp – 16-18°C (60-100°F)

SECTION 8: EXPOSURE CONTROLS/PROTECTION**4,4'-Diphenylmethane Diisocyanate (MDI) (101-68-8)**

US ACGIH Threshold Limit values – Time Weighted Average (TWA): 0.005 ppm

US OSHA Table Z-1 Limits for Air Contaminates (29 CFR 1910.1000)

Ceiling Limit Value: 0.02 ppm, 0.2 mg/m³

SECTION 8: EXPOSURE CONTROLS/PROTECTION (continued)

Preventive measures – Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices in your workplace.

Engineering controls – Use only with adequate ventilation. Provide general and/or local exhaust ventilation to control airborne levels and concentrations below the TLV. Exhaust systems should be designed to move air away from the source of vapor and the people working.

Personal Protective Equipment

Eyes – Chemical safety goggles.

Skin – Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron, or full body suit will depend on operation. Gloves – neoprene, nitrile rubber, butyl rubber. Thin latex gloves should not be used repeatedly or long term. Remove contaminated clothing immediately, wash skin area with soap and water.

Respiratory – Atmospheric levels should be maintained below the exposure guideline. When levels exceed exposure guideline, use an approved air purifying respirator equipped with an organic vapor cartridge and a HEPA (P100) particle filter. For high atmospheric levels, or where the level is unknown, use an OSHA standard positive pressure airline with auxiliary self-contained air supply. (29.C.F.R 1910.134)

Exposure Guidelines – 4,4-Diphenylmethane Diisocyanate (MDI)

ACGIH TLV	0.05 mg/m ³ (8hr, 40 hrs/wk)
OSHA PEL	0.20 mg/m ³ ceiling limit
NIOSH REL/TWA	0.05 mg/m ³ (10hr, 40 hrs/wk)
NIOSH REL/CEILING	0.20 mg/m ³ (10 minute)

Persons with respiratory problems including asthmatic type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or skin allergies should be evaluated for their suitability of working with this product. Once a person is diagnosed as sensitized, no further exposure to the material that caused the sensitization should be permitted. The Occupational Exposure Limits (above) do not apply to previously sensitized individuals.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State – Brown liquid

Odor – Musty

pH – not applicable

Vapor Pressure – 0.000004 mmHg

Vapor Density – 8.5 (air=1)

Boiling Point - >300 °C

Melting/freezing pt – not applicable

Specific Gravity – 1.23

Flash Point - >93.3°C (200°F) closed cup

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability – Stable at room temperature. See section 7, Storage.

Conditions to Avoid – Avoid high temperatures. Avoid Freezing.

Incompatibility – Reactive with moisture.

Hazardous Decomposition Products – Carbon Monoxide, Carbon Dioxide, Nitrous Oxide and HCN.

Hazardous Polymerization – May occur at elevated temperatures in the presence of alkalies, tertiary amines, and metal compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity to Animals - LD50 Rat Oral (>5000 mg/kg), LD50 Rabbit Dermal (>5000 mg/kg), LC50 Rat Vapor (2240 mg/m³ 1 hours) LC50 Rat Vapor (0.49 mg/m³ 4 hours)

Inhalation – This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization. Symptoms may include irritation to the eyes, nose, throat, and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons.

Skin Contact – Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization. There is limited evidence from animal studies that skin contact may play a role in respiratory sensitization. These results emphasize the need for protective clothing including gloves to be worn at all times when handling chemicals or in maintenance work.

Eye Contact – The vapor, aerosol, and liquid are irritant.

Ingestion – Ingestion may cause irritation of the gastrointestinal tract. Based on the acute oral LD50 this product is considered practically non-toxic by ingestion.

Carcinogenic Effects – The ingredients of this product are not classified as carcinogenic by ACGIH or IARC, not regulated as carcinogens by OSHA, and not listed as carcinogens by NTP.

Mutagenic Effects – There is no substantial evidence of mutagenic potential.

Reproductive Effects – No Adverse reproductive effects are anticipated.

Teratogenic Effects – No birth defects were seen in 2 independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal respirable concentrations well in excess of the defined occupational limits.

Remark – A study was conducted where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres of respirable polymeric MDI aerosol at concentrations of 0, 0.2, 1 and 6 mg/m³. No adverse effects were observed at 0.2 mg/m³. At the 1 mg/m³ concentrations, minimal nasal and lung irritant effects were seen. Only at the top concentration, minimal of 6 mg/m³ was there an increased incidence of a benign tumor of the lung. One malignant pulmonary tumor was witnessed in this group. MDI administration to rats in this study did not change the distribution and incidence of tumors from those seen in control animals. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is unlikely that tumor formation will occur. (MDI)

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity – Material is practically non-toxic to aquatic organisms on an acute basis. In the most sensitive species tested, Polymeric MDI: LC50 (zebra fish) > 1000 mg/l. EC50 (daphnia magna) 24 hr > 1000 mg/l. EC50 (e.coli) > 100 mg/l.

Environmental fate – It is unlikely that significant environmental exposure in the air or water will arise based on consideration of the production and use of the substance.

Persistence and Degradation – Immiscible with water, but will react with water to produce inert and non-biodegradable solids.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste – The generation of waste should be avoided or minimized wherever possible. **DO NOT DUMP INTO ANY SEWERS, ONTO GROUND, OR INTO ANY BODY OF WATER.** Disposal should be in accordance with local, state, provincial, and national regulations. This material is not a hazardous waste under RCRA 40 CFR 261. Small quantities should be treated with a decontaminant solution (see section 6). The treated waste is not a hazardous material under RCRA 40 CFR 261. Chemical waste, even small quantities, should never be poured down drains, sewers or waterways. Empty containers should be decontaminated and either passed to an approved drum recycler or destroyed.

URETHANE TECHNOLOGY COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HEREIN PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SECTION 2 OF THIS MSDS.

SECTION 14: TRANSPORT INFORMATION**Transportation Emergency Number (CHEMTREC) 1-800-424-9300**

DOT Classification – Single containers less than 5,000 lbs. are not regulated. Single containers with 5,000 lbs. or more of MDI are regulated as: other regulated substances, liquid, N.O.S. (Methylene Diphenyl Diisocyanate), 9, NA3082, PGIII, RQ.

TDG Classification – Not regulated

IMO/IMDG Classification – Not regulated

ICAO/IATA Classification – Not regulated

SECTION 15: REGULATORY INFORMATION

U.S. Federal Regulations – This material is classified as hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200)

HCS Classification: Class(es): toxic – irritating substance – sensitizing substance

US Toxic Substances Control Act: Listed on the TSCA Inventory

US EPA CERCLA Hazardous Substances (40 CFR 302) – Reportable quantity: 5000 lbs.

EPCRA Section 313 (40 CFR 372) CERCLA: 4,4-Methylene diphenyl diisocyanate (CAS 101-68-8) has a 5,000 lb. RQ (reportable quantity). Any spill or release above the RQ must be reported to the National Response Center 800-424-8802
EPCRA Section 313 (40 CFR 372): Diisocyanate Compounds (Category Code N120) 100%

SARA Section 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard

US EPA Emergency Planning and Community Right to Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): Components – None

US EPA Emergency Planning and Community Right to Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65 – Supplier Notification Required:
Components - 4,4-Diphenylmethane Diisocyanate (MDI)

US EPA Resource Conservation and Recovery Act (RCRA) Complete List of Hazardous Wastes And Appendix VIII Hazardous Constituents (40 CFR 261):

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, 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)

This product does not contain nor is it manufactured with ozone depleting substances.

State Right To Know Information

The following chemicals are specifically listed by individual states: other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

This product contains a trace (ppm) amount of phenyl isocyanate (CAS# 103-71-9) and monochlorobenzene (CAS# 108-90-7) as impurities.

SECTION 15: REGULATORY INFORMATION (continued)**Massachusetts, New Jersey, or Pennsylvania Right to Know Substance Lists:**

Weight	Components	Cas #
60-100%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
20-30%	Diphenylmethane Diisocyanate Homopolymer	25686-28-6
<2%	Diphenylmethane Diisocyanate – Mixed Isomers	26447-40-5

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

Weight	Components	Cas #
60-100%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8

California Prop 65:

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects, or other reproductive harm.

Canadian Regulations – *This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.*

WHMIS (Canada) – Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC) – Class D-2A: Material causing other toxic effects (VERY TOXIC) – Class D-2B: Material causing other toxic effects (TOXIC)

CEPA – DSL/NDSL: All ingredients listed.

SECTION 16: Other Information

Label requirements - Causes respiratory tract, eye, and skin irritation. May be harmful if swallowed or absorbed through the skin.

Hazardous Material Information System -

Health = 2	Fire Hazard = 1	Reactivity = 1
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National Fire Protection -

Health = 2	Flammability = 1	Instability = 1
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NOTE TO READER

The information herein is provided in good faith but no warranty, express or otherwise, is made or implied. In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its own particular purpose. This product may present hazards and should be used with caution. While this MSDS describes certain hazards, no guarantee is made that these are the only hazards that exist. Hazards, toxicity, and behavior of the product may differ when used with other materials and are not dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behavior should be determined by the user and made known to handlers, processors, and end users.

Prepared by: Urethane Technology Company Telephone: (845) 561-5500