



Willamette Valley Company
 660 McKinley Street
 P.O. Box 2280
 Eugene, OR 97402
 ☎ 541 484-9621
 FAX 541 343-6376

Material Safety Data Sheet

MAXCAST™ ISOCYANATE

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DISTRIBUTED BY: Willamette Valley Co.
 PO Box 2280
 Eugene OR 97402
 (541) 484-9621

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Emergency Telephone: (800) 535-5053

AVAILABLE DAYS, NIGHTS, WEEKENDS, & HOLIDAYS.
 SECTION 1 - PRODUCT INFORMATION

MAXCAST™ ISOCYANATE

Product ID: 101010125
 Common Chemical Name:
 POLYMETHYLENE POLYPHENYLISOCYANATE
 Synonyms:
 POLYMERIC MDI
 Molecular Formula:
 N/A
 Chemical Family: Aromatic Isocyanates
 Molecular Wt.: NOT ESTABLISHED

SECTION 2 - INGREDIENTS

Chemical Name:	CAS	Amount	
4,4' DIPHENYLMETHANE DIISOCYANATE	101-68-8	38.0	%
ACGIH TLV	TWA	0.005 PPM	
OSHA PEL	CEIL	0.02 PPM	
MDI PREPOLYMER	PROPRIETARY	60.0	%
PEL/TLV NOT ESTABLISHED			
MDI MIXED ISOMERS	26447-40-5	1.0	%
PEL/TLV NOT ESTABLISHED			

SECTION 3 - PHYSICAL PROPERTIES

Color:	Light Yellow			
Form/Appearance:	Liquid/Bulk			
	XXXXXXXXXXXXXXXXXXXXXSolid/Drums			
Odor:	Aromatic			
Odor Intensity:	Slight			
	Typical	Low/High	U.O.M.	
Specific Gravity:	1.14		@	25
Viscosity:	3360		CYCLES/SEC @	25
pH:	NOT AVAILABLE			
	Typical	Low/High	Deg.	@ Pressure
Boiling Pt:	200		C	5 MM HG
Freezing Pt:	NOT AVAILABLE			
Decomp. Tmp:	230		C	1 ATMOSPHERES



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SECTION 3 - PHYSICAL PROPERTIES (cont)

Solubility in Water Description: Water reactive
 VAPOR PRESSURE: 0.00003 mmHg @ 25 deg C
 NCO 33.5% wt.

SECTION 4 - FIRE AND EXPLOSION DATA

	Typical	Low/High	Deg.	Method
Flash Point:	199			C CLEVELAND OPEN CUP
Autoignition:	NOT AVAILABLE			

Extinguishing Media:

Use water fog, foam, CO2 or dry chemical extinguishing media.

Fire Fighting Procedures:

Personnel engaged in fighting isocyanate fires must be protected against nitrogen dioxide fumes as well as isocyanate vapors. Firefighters must wear self-contained breathing apparatus and turnout gear.

Unusual Hazards:

Avoid water contamination in closed containers or confined areas (CO2 evolved).

SECTION 5 - HEALTH EFFECTS

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Toxicology Test Data:

Rat, Inhalation LC50 - 178 UG/L
 Highly Toxic
 Rat, 4 hr Inhalation LC50 - 380 MG/CU. M
 Highly Toxic
 Rat, 4 hr Inhalation LC50 - 369 MG/CU. M
 Highly Toxic
 Rat, Oral LD50 - 10,000 MG/KG
 Practically Nontoxic
 Mouse, Acute Intraperitoneal LD50 - 100 MG/KG
 Toxic

Acute Overexposure Effects:

Eye contact with MDI may result in conjunctival irritation and mild corneal opacity. Skin contact may result in dermatitis, either irritative or allergic. Inhalation of MDI vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Airborne overexposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed. Gastrointestinal symptoms include nausea, vomiting and abdominal pain.



SECTION 5 - HEALTH EFFECTS (cont)

Chronic Overexposure Effects:

Acute or chronic overexposures to isocyanates may cause sensitization in some individuals, resulting in allergic symptoms of the lower respiratory tract (asthma-like), including wheezing, shortness of breath and difficulty breathing. Subsequent reactions may occur at or substantially below the PEL and TLV. Asthma caused by isocyanates, including MDI, may persist in some individuals after removal from exposure and may be irreversible. Some isocyanate sensitized persons may experience asthma reactions upon exposure to non-isocyanate containing dusts or irritants. Cross sensitization to different isocyanates may occur.

Long-term overexposure to isocyanates has also been reported to cause lung damage, including reduced lung function, which may be permanent. An animal study indicates that MDI may induce respiratory hypersensitivity following dermal exposure.

Results from a lifetime inhalation study in rats indicate that MDI aerosol was carcinogenic at 6 mg/m³, the highest dose tested. This is well above the recommended TLV of 5 ppb (0.05 mg/m³). Only irritation was noted at the lower concentration of 0.2 and 1 mg/m³. No birth defects or teratogenic effects were reported in a teratology study with rats exposed to 1, 4, and 12 mg/m³ polymeric MDI for 6 hr/day on days 6-15 of gestation. Embryotoxicity and fetotoxicity was reported at the top dose in the presence of maternal toxicity.

First Aid Procedures - Skin:

Wash affected areas with soap and water. Remove and launder contaminated clothing before reuse. Get immediate medical attention.

First Aid Procedures - Eyes:

Immediately rinse eyes with running water for 15 minutes. Get immediate medical attention.

First Aid Procedures - Ingestion:

If swallowed, dilute with water. DO NOT INDUCE VOMITING. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Get immediate medical attention.

First Aid Procedures - Inhalation:

Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

First Aid Procedures - Notes to Physicians:

There is no specific antidote to counteract the effects of MDI. Care should be supportive and treatment should be based on the judgement of the physician in response to the reaction of the patient.

Pulmonary disorders.

First Aid Procedures - Aggravated Medical Conditions:

Individuals who are sensitized to isocyanates and those with pre-existing lung diseases or conditions, including non-specific bronchial hyperreactivity or asthma, must avoid all exposure to isocyanates.

First Aid Procedures - Special Precautions:

None

Other First Aid Procedures:

Medical supervision of all employees who handle or come into contact with MDI is recommended. Preemployment and periodic medical exami-



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SECTION 5 - HEALTH EFFECTS (cont)

nations with respiratory function tests (FEV₁, FVC as a minimum are suggested). Persons with asthmatic conditions chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with MDI. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to MDI, further exposure is not permissible.

SECTION 6 - REACTIVITY DATA**Stability Data:**

Stable

Incompatibility:

Water, alcohols and strong bases.

Conditions/Hazards to Avoid:Reaction with moisture may form CO₂.**Hazardous Decomposition/Polymerization:**Hazardous decomposition products: CO, NO_x, HCN

Polymerization: May occur.

Corrosive Properties:

Not corrosive.

Oxidizer Properties:

Not an oxidizer

Other Reactivity Data:

Hazardous polymerization may occur. Avoid contamination with moisture and other products that react with isocyanates.

Contact with certain rubbers and plastics can cause embrittlement of the material with subsequent loss in strength.

SECTION 7 - PERSONAL PROTECTION**Clothing:**

Rubber gloves, coveralls, hard hat, boots and rubber apron to avoid skin contact. Contaminated equipment or clothing should be cleaned after each use or disposed of.

Eyes:

Wear fitted chemical goggles or face shield and safety glasses.

Respiration:

If the permissible exposure limit is exceeded, wear a NIOSH approved air-supplied respirator.

Ventilation:

✗ Use local exhaust as necessary to maintain P.E.L.

Explosion Proofing:

None required.

Other Personal Protection Data:

Eyewash fountains and safety showers must be easily accessible.

Maintain work area below P.E.L.

SECTION 8 - SPILL-LEAK/ENVIRONMENTAL**General:****General:**

Evacuate and ventilate spill area, dike spill to prevent entry into water system, wear full protective equipment including respiratory equipment during clean up. (See Section 7).



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SECTION 8 - SPILL-LEAK/ENVIRONMENTAL (cont)

MAJOR SPILL:

Call BASF Corporation @ 1-800-832-4357. If transportation spill involved, call CHEMTREC @ 1-800-424-9300. If temporary control of isocyanate vapor is required a blanket of protein foam or other suitable foam (available at most fire departments), may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal. Proceed with clean up of rest of material as described in "Minor Spill".

MINOR SPILL:

Absorb the isocyanate with an acceptable absorbent per the Hazardous and Solid Waste Amendments of 1984 (HSWA). See 40 CFR sections 260, 264, and 265 for further information. Shovel into open top containers Do not make pressure tight. Transport to a well ventilated area (outside) and treat with neutralizing solution consisting of a mixture of 90% water, 3-8% ammonia and 2-7% detergent. Add about 10 parts of neutralizer per part of isocyanate with mixing. Allow to stand for 48 hours letting evolved carbon dioxide to escape. Proceed with final "clean up" of spill area.

CLEAN UP:

Decontaminate spill area using neutralizing solution and letting stand over affected areas for at least 10 minutes.

Waste Disposal:

Incinerate or landfill in a licensed facility. Do not discharge into waterways or sewer systems.

Container Disposal:

Steel drums must be emptied (as defined by RCRA, Section 261.7 or state regulations that may be more stringent) and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer, or an approved landfill. Check with reconditioner to determine if they require them to be decontaminated. Drums destined for a scrap dealer or landfill must be decontaminated and punctured or crushed to prevent reuse.

Environmental Toxicity Test Data:

Daphnia magna, 24 hr LC50 - 500 MG/L

Practically Nontoxic

Zebra Fish, Static 24 hr LC50 - 500 MG/L

Practically Nontoxic

SECTION 9 - STORAGE AND HANDLING

General:

Liquids must be stored at 40-50 C under nitrogen pad to avoid dimer formation. Solid product in drums must be stored below 5C. Solids can be melted by rotating drum in hot air cabinet at 80-100 C but liquid should not be heated above 70 C to avoid dimer formation. Outage of containers should be replaced with nitrogen or dry air to avoid water reaction with MDI. Contamination with moisture or basic compounds can cause dangerous pressure buildup of CO2 in closed containers.



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SECTION 10 - REGULATORY INFORMATION

TSCA Inventory Status

Listed on Inventory: YES

SARA - 313 Listed Chemicals:

CAS: 101-68-8 AMOUNT: 37.9 %

NAME: 4,4' DIPHENYLMETHANE DIISOCYANATE

RCRA Haz. Waste No.: NO

CERCLA: YES Reportable Qty.: (If YES) 5000 LBS

Hazard Ratings:

	Health:	Fire:	Reactivity:	Special:
HMIS	3	1	1	NA

FDA Approved: NO Use:

This product is hazardous or contains components which are hazardous according to the OSHA Hazard Communication Standard.

SECTION 11 - TRANSPORTATION INFORMATION

See Bill of Lading for Proper Shipping 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 EXPRESS 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