

MATERIAL SAFETY DATA SHEET

COMPLIES WITH THE OSHA COMMUNICATION STANDARD 29 CFR 1910.1200

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FOR HEALTH HAZARD INFORMATION CALL: (918) 836-4626, FOR OTHER INFORMATION CALL YOUR ANCHOR PAINT REPRESENTATIVE.

I. PRODUCT IDENTIFICATION:

PRODUCT NAME.....: POLYURETHANE CONVERTER
 PRODUCT CODE.....: J1100
 CHEMICAL FAMILY.....: Cyclo Aliphatic Polyisocyanate
 CHEMICAL NAME.....: Isophorone Diisocyanate Based Polyisocyanate
 SYNONYMS.....: Polymeric Isophorone Diisocyanate
 FORMULA.....: Not Applicable

II. HAZARDOUS INGREDIENTS:

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
Aromatic 100 (Solvent Naphtha) 64742-95-6	OSHA : Not Established ACGIH: Not Established Supplier: 50.000 ppm	30%
Homopolymer of IPDI 53880-05-0	OSHA : Not Established ACGIH: Not Established	70%
Isophorone Diisocyanate (IPDI) 4098-71-9	OSHA : .005 ppm TWA (Skin) .020 ppm STEL ACGIH: .005 ppm TWA	* %
*This product contains less than 0.7% monomeric IPDI based on resin solids.		
Propyl Benzene 103-65-1	OSHA : Not Established ACGIH: Not Established	Approx. 1.8* %
*This ingredient is present at approx. 1.8% as an impurity in the Solvent Naphtha.		

II. HAZARDOUS INGREDIENTS (Continued)

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
Mesitylene (1,3,5-trimethylbenzene) 108-67-8	OSHA : Not Established ACGIH: Not Established	Approx. 3* %

*This ingredient is present at approx. 3% as an impurity in the Solvent Naphtha.

III. PHYSICAL PROPERTIES:

PHYSICAL FORM.....: Liquid
COLOR.....: Transparent pale yellow
ODOR.....: Of Solvent
BOILING POINT.....: AR100: 310-344 F (155-173 C)
MELTING/FREEZING POINT....: Not established
SOLUBILITY IN WATER: Resin is Insoluble - Reacts slowly with water to liberate CO2 gas.
SPECIFIC GRAVITY: 1.05
BULK DENSITY.....: 8.7 lbs/gal
% VOLATILE BY VOLUME.....: Approx. 36%
VAPOR PRESSURE: AR100: 31 mm Hg @ 100 F (38 C)

IV. FIRE AND EXPLOSION DATA:

FLASH POINT.....: 45.0 C (113.0 F) Tagliabue Closed Cup (ASTM D-56)
FLAMMABLE LIMITS:
UPPER EXPLOSIVE LIMIT (UEL)(%): 6.0% Solvent Naphtha
LOWER EXPLOSIVE LIMIT (LEL)(%): 0.9% Solvent Naphtha
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 fire fighters. During a fire, IPDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. (See Section VIII.) Isolate from heat, electrical equipment, sparks and open flame. Closed container may explode when exposed to extreme heat or burst when contaminated with water (CO2 evolved). Solvent vapors may be heavier than air. Stagnant air may cause vapors to accumulate and travel along the ground to an ignition source which may result in a flash back to the source of the vapors.

V. HUMAN HEALTH DATA:

ROUTE(S) OF ENTRY.....: Inhalation, Skin Contact/Absorption, Eye Contact

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION.....: IPDI 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 preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV with similar symptoms as well as an 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. Solvent vapors may be irritating to the eyes, nose and throat. Symptoms of irritation may include: redness, burning and itching of the eyes, dryness of the throat and tightness in the chest. Other possible symptoms of overexposure include: headache, nausea, narcosis, fatigue and loss of appetite.

CHRONIC INHALATION.....: As a result of previous repeated overexposures or a single large dose, certain individuals will 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 include: chest tightness, wheezing, cough, shortness of breath or asthmatic 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. Chronic overexposure to isocyanates has also been reported to cause lung damage, including decrease in lung function, which may be permanent. Sensitization may be either temporary or permanent. Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include: loss of memory, loss of intellectual ability and loss of coordination.

ACUTE SKIN CONTACT.....: Isocyanates react with skin protein and moisture and can cause irritation. Symptoms of skin irritation may be reddening, swelling, rash, scaling or blistering. Some persons may develop skin sensitization from skin contact. Cured material is difficult to remove. Repeated or prolonged skin contact with solvents can result in dry, defatted and cracked skin causing increased susceptibility to infection. In addition, skin irritation (i.e. redness, swelling) which may develop into dermatitis may occur from skin contact. These solvents can penetrate the skin and may cause systemic effects similar to those identified under acute inhalation symptoms.

CHRONIC SKIN CONTACT.....: Prolonged contact with the isocyanate can cause reddening, swelling, rash, scaling or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of

V. HUMAN HEALTH DATA (Continued)

contact with very small amounts of liquid material or even as a result of vapor-only exposure. Chronic skin exposure to solvents may cause effects similar to those identified under chronic inhalation effects.

ACUTE EYE CONTACT.....: Liquid, aerosols or vapors of this product (isocyanate and solvents) are irritating and can cause tearing, reddening and swelling accompanied by a stinging sensation and maybe a feeling like that of fine dust in the eyes.

CHRONIC EYE CONTACT.....: Prolonged vapor contact may cause conjunctivitis.

ACUTE INGESTION.....: Can result in irritation and possible corrosive action in the mouth, stomach tissue and digestive tract. Vomiting may cause aspiration of the solvent resulting in chemical pneumonitis.

CHRONIC INGESTION.....: None Found

CARCINOGENICITY

NTP.....: Not listed

IARC.....: Not listed

OSHA.....: Not regulated

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE.....: Asthma and any other respiratory disorders (bronchitis, emphysema, hyperreactivity), skin allergies, eczema.

EXPOSURE LIMITS.....: Not established for product as whole. Refer to Section II for exposure limits of hazardous constituents.

VI. EMERGENCY AND FIRST AID PROCEDURES:

FIRST AID FOR EYES.....: Flush with clean, lukewarm water (low pressure) for at least 15 minutes while lifting eyelids. Refer individual to physician or ophthalmologist for immediate follow-up.

FIRST AID FOR SKIN.....: Remove contaminated clothing immediately. Wash affected areas thoroughly with soap (green tincture soap is recommended) and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists.

FIRST AID FOR INHALATION: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. Consult physician.

FIRST AID FOR INGESTION.: DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Consult physician.

• VI. FIRST AID PROCEDURES (Continued)

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

VII. EMPLOYEE PROTECTION RECOMMENDATIONS:

REQUIRED WORK/HYGIENE PROCEDURES...: Precautions must be taken so that persons handling this product do not breathe the vapors or have it contact the eyes or skin. In spray operations, protection must be afforded against exposure to both vapor and spray mist.

EYE PROTECTION REQUIREMENTS.....: Safety glasses, splash goggles or face shield. Contact lenses should not be worn.

SKIN PROTECTION REQUIREMENTS.....: Chemical resistant gloves. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area protected only by the cream to a minimum.

RESPIRATORY/VENTILATION REQUIREMENT: Exhaust ventilation sufficient to keep the airborne concentrations of the solvents, IPDI and polyisocyanate below their respective TLV's or recommended exposure limits must be utilized. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. In addition a respirator that is recommended or approved for use in isocyanate containing environments (air purifying or fresh air supplied) may be necessary. In spray applications, when the airborne isocyanate monomer concentrations are known to be below 0.05 ppm and if the polyisocyanate (polymeric, oligomer) concentrations are known to be below 10 mg/m³, a properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, will provide sufficient protection. When the airborne isocyanate concentrations are not known, or if either of the above guidelines is exceeded, or if spraying is performed in a confined space or area with limited ventilation, the use of a positive pressure supplied air respirator is mandatory. Consider type of application and environmental concentrations. Observe OSHA regulations for respirator use (29 CFR 1910.134). Even during non-spray operations such as mixing, brush or roller application, etc., depending on the conditions (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when airborne concentrations during such non-spray operations exceed the TLV of 0.005 ppm for isocyanate monomer, but are below 0.05 ppm, at least an air purifying (organic vapor) respirator is required. If airborne concentrations are unknown; or exceed 0.05 ppm; or operations are

VII. EMPLOYEE PROTECTION (Continued)

performed in a confined space, a supplied air respirator must be worn. In addition, solvent concentrations should be considered when determining the selection and use of a respirator. Refer to Patty's Industrial Hygiene and Toxicology-Volume 1 (3rd edition) Chapter 17 and Volume III (1st edition) Chapter 3-for guidance concerning appropriate air sampling strategy to determine airborne concentrations.

MEDICAL SURVEILLANCE.....: Medical supervision of all employees who handle or come in contact with this product is recommended. This should include preemployment and periodic medical examinations with respiratory function test (FEV, 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 being sensitized to isocyanates, 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.

VIII. REACTIVITY DATA:

STABILITY.....: This is a stable material.

HAZARDOUS POLYMERIZATION...: May occur; Contact with moisture or other materials which react with isocyanates or temperatures over 400 F (204 C) may cause polymerization.

INCOMPATIBILITIES.....: Water, amines, strong bases, alcohols, metal compounds, surface active materials and strong oxidants.

INSTABILITY CONDITIONS.....: None known.

DECOMPOSITION PRODUCTS.....: By high heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen, traces of HCN, IPDI.

IX. SPILL AND LEAK PROCEDURES:

SPILL OR LEAK PROCEDURES.....: Evacuate nonessential personnel. Remove all sources of ignition and ventilate the area. Equip clean-up crew with appropriate protective equipment (i.e., clothing, respiratory, etc. See Employee Protection Recommendations). Dike or impound spilled material and control further spillage if feasible. Notify appropriate authorities if necessary. Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. Decontamination solutions: nonionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%)

IX. SPILL AND LEAK PROCEDURES (Continued)

and water (90-95%). Respiratory protection is recommended during spill cleanup (See Respiratory Protection, Section VII.).

WASTE DISPOSAL METHOD.....: Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue and combustible solvent vapor. Decontaminate containers prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH. (See Sections IV. and VIII.)

X. SPECIAL PRECAUTIONS & STORAGE DATA:

STORAGE TEMPERATURE(MIN/MAX): 32 F (0 C)/122 F (50 C)

SHELF LIFE.....: 12 months @ 77 F (25 C)

SPECIAL SENSITIVITY.....: If container is exposed to high heat, it can be pressurized and possibly rupture explosively. IPDI reacts slowly with water to form CO2 gas. This gas can cause sealed containers to expand and possibly rupture explosively.

HANDLING/STORAGE PRECAUTIONS: Keep away from heat, sparks and open flame. Ground containers during storage and transfer operations. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. At maximum storage temperatures noted, material may slowly polymerize without hazard. Ideal storage temperature range for ease of handling is 50-81 F (10-27 C). Avoid contact with skin and eyes. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard.

XI. SHIPPING INFORMATION:

TECHNICAL SHIPPING NAME.....: Polyisocyanate contains Isophorone Diisocyanate, Solvent Naphtha

FREIGHT CLASS BULK.....: Isocyanate

FREIGHT CLASS PACKAGE.....: Chemicals NOI (Isocyanate) NMFC 60000..

PRODUCT LABEL.....:

DOT (DOMESTIC SURFACE)

PROPER SHIPPING NAME.....: Combustible Liquid, N.O.S.

HAZARD CLASS OR DIVISION: Combustible Liquid

UN/NA NUMBER.....: NA1993

PACKAGING GROUP: PG III

DOT PRODUCT RQ lbs (kgs).....: None

HAZARD LABEL(s).....: None

HAZARD PLACARD(s).....: Combustible

* Applicable for domestic transportation by highway and rail, but not air or

XI. SHIPPING INFORMATION (Continued)

DOT (continued)

vessel. (See 49 CFR 173.150(F)(1)). If the quantity is in a non-bulk packaging (less than 119 gallons), this material ships as non-regulated unless the Combustible Liquid is a Hazardous Substance or a Hazardous Waste. (See 49 CFR 173.150(F)(2)).

IMO / IMDG CODE (OCEAN)

PROPER SHIPPING NAME.....: Resin Solution
HAZARD CLASS DIVISION NUMBER...: 3.3
UN NUMBER.....: UN1866
PACKAGING GROUP.....: III
HAZARD LABEL(s).....: Flammable Liquid
HAZARD PLACARD(s).....: Flammable Liquid

ICAO / IATA (AIR)

PROPER SHIPPING NAME.....: Resin Solution
HAZARD CLASS DIVISION NUMBER...: 3
UN NUMBER.....: UN1866
SUBSIDIARY RISK.....: None
PACKING GROUP.....: III
HAZARD LABEL(s).....: Flammable Liquid
RADIOACTIVE?.....: Non-Radioactive
PASSENGER AIR - MAX. QTY.: 60L
PASSENGER INSTRUCTION NUMBER...: 309
CARGO AIR - MAX. QTY.: 220L
CARGO AIR INSTRUCTION NUMBER...: 310

XII. ANIMAL TOXICITY DATA:

TOXICITY DATA FOR: Based on same polyisocyanate in different solvents.

ACUTE TOXICITY

ORAL LD50.....: Greater than 5000 mg/kg (Rat)
DERMAL LD50.....: Greater than 2000 mg/kg (Rabbit)
INHALATION LC50....: Greater than 5018 mg/m3, 4 hr (Rat)
EYE EFFECTS.....: Moderate irritation (Rabbit)
SKIN EFFECTS.....: Moderate irritation (Rabbit)
SENSITIZATION.....: Skin Sensitizer: Negative (Guinea Pig)

XIII. FEDERAL REGULATORY INFORMATION:

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

XIII. FEDERAL REGULATORY INFORMATION (Continued)

TSCA STATUS.....: On TSCA Inventory
 CERCLA REPORTABLE QUANTITY...: IPDI: 1 lb.
 SARA TITLE III:
 SECTION 302 EXTREMELY
 HAZARDOUS SUBSTANCES...: Isophorone Diisocyanate (CAS# 4098-71-9) <0.7%;
 SECTION 311/312
 HAZARD CATEGORIES.....: Immediate Health Hazard; Delayed Health Hazard;
 Fire Hazard; Reactive Hazard
 SECTION 313
 TOXIC CHEMICALS.....: None
 RCRA STATUS.....: When discarded in its purchased form, this
 product meets the criteria of ignitability, and
 should be managed as a hazardous waste (EPA
 Hazardous Waste Number D001). (40 CFR 261.20-24)

XIV. OTHER REGULATORY 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.

COMPONENT NAME /CAS NUMBER	CONCENTRATION	STATE CODE
Aromatic 100 (Solvent Naphtha) 64742-95-6	30%	PA3, NJ4
Homopolymer of IPDI 53880-05-0	70%	PA3, NJ4
Isophorone Diisocyanate (IPDI) 4098-71-9	* %	MA
Propyl Benzene 103-65-1	Approx. 1.8* %	PA1, NJ2
Mesitylene (1,3,5-trimethylbenzene) 108-67-8	Approx. 3* %	PA3, MA, NJ1

MA = Massachusetts Hazardous Substance List
 NJ1 = New Jersey Hazardous Substance List
 NJ2 = New Jersey Environmental Hazardous Substance List
 NJ4 = New Jersey Other - included in 5 predominant ingredients > 1%
 PA1 = Pennsylvania Hazardous Substance List
 PA3 = Pennsylvania Non-hazardous present at 3% or greater.

HMIS RATINGS: Health Flammability Reactivity
 2* 2 1
 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

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PRODUCT CODE: J1100
APPROVAL DATE: 09/05/95