



MATERIAL SAFETY DATA SHEET

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Issued: 07/22/2008

Date of Printing: 02/24/2011

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Id: Uradur 1121
Chemical Family: Moisture Cure Polyurethane Solution
Application: Liquid Adhesive
Prepared By: Health, Safety and Environment Department
HMIS Classification: Health: 2* Flammability: 3 Physical Hazard: 1
HMIS Ratings: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
(* Chronic Health Hazard)

For Chemical Emergency

Chemtrec Day & Night International 800-424-9300
703-527-3887

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME/ CAS NUMBER	WEIGHT %	OSHA PEL	ACGIH TLV (8 hr.)
Polyurethane Polymer	70 to 100	N/A	N/A
Methyl Ethyl Ketone 78-93-3	10 to 15	200 ppm 590 mg/m ³	200 ppm
4,4'-Diphenylmethane Diisocyanate 101-68-8	1 to 5	N/A	0.005 ppm

Other Information: Not Applicable

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER: Flammable liquid and vapor. Straw Colored Liquid. Musty Odor. Contains monomeric MDI. May cause eye, skin, and respiratory tract irritation; Harmful if swallowed; May cause allergic respiratory reaction; May cause allergic skin reaction; may cause lung damage; use cold water spray to cool fire-exposed containers to minimize the risk of rupture; Toxic gases / fumes are given off during burning or thermal decomposition; closed containers may explode under extreme heat.

Inhalation: Toxic if inhaled. Excessive exposure causes headaches, dizziness, nausea and vomiting. Inhalation of mists may cause irritation to the respiratory tract.

Skin Contact: MDI - has been shown to produce dermal sensitization in laboratory animals. MEK - Studies show that MEK causes no or mild irritation.

Eye Contact: May cause eye irritation.
Ingestion: Harmful if swallowed. May cause irritation of the mouth, throat and stomach. May cause pain, nausea, vomiting and diarrhea.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Skin Contact: Remove contaminated clothing and clean before reuse. Wash skin with water, using soap if available. If irritation occurs, seek medical attention.
Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention.
Ingestion: If swallowed dilute with 1-2 glasses of water and then induce vomiting.

5. FIRE FIGHTING MEASURES

Lowest Component Flash Point (°F): MEK = 23 F

Flash Point Method: Tag Closed Cup

FLAMMABILITY (Lowest Component Information)
LFL (% Vol): Not Available
UFL (% Vol): Not Available

Extinguishing Media: Sand, Water fog, carbon dioxide, foam, dry chemical.
Special Exposure Hazards: Flammable Liquid. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermo decomposition or combustion.
Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment:

NFPA Rating: HEALTH 2, FLAMMABILITY 3, REACTIVITY 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear self-contained breathing apparatus in enclosed areas. Use Appropriate protective equipment.
Environmental Precautions: Prevent from entering sewers, waterways or low areas. Prevent contamination of soil.
Spill Procedures: Remove all sources of ignition and ventilate the area. Soak up residue with an absorbent such as clay or sand. Place in a non-leaking container for proper disposal according to Federal, State, and Local regulations. Do not discharge into waterways or sewage systems.

7. HANDLING AND STORAGE

NORMAL HANDLING: Use approved organic vapor face mask or self contained breathing apparatus. Wear chemical goggles and chemical resistant gloves. This product reacts slowly with water to form CO₂ gas. Sealed containers may become pressurized.
STORAGE RECOMMENDATIONS: Keep in cool, dry, ventilated storage and in closed containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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Engineering Controls:	Good mechanical ventilation is necessary to remove fumes from work place to reduce fire and health hazards. If ventilation is inadequate, use approved organic vapor face mask.
Respiratory Protection:	Use an approved NIOSH organic vapor respirator below the TLV. If TLV is exceeded or overexposure is likely, use positive pressure or self contained breathing apparatus.
Eyes:	Wear safety glasses or goggles to protect against exposure.
Gloves:	Appropriate chemical resistant gloves should be worn. Dispose of gloves after use. Precautions should be taken to prevent contamination of inside of gloves.
Protective Clothing:	Long sleeved clothing
Hygienic Work Practices:	Use with proper ventilation. Follow good industrial chemical hygiene practices. Safety showers and eyewash stations should be available. Educate and train employees in safe use of product.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	AMBER YELLOW
Odor:	MILD MUSTY
% Solids by Weight:	87 %
% Volatile by Volume:	17.4 %
pH:	Not Determined
Specific Gravity:	1.072
Density:	8.94 lbs./gallon
Solubility in Water:	Not Soluble
Molecular Weight:	Not Determined
VOCs (lbs/gallon):	1.16 lbs/gal
Evaporation Rate (Highest Component Information):	(Normal Butyl Acetate = 1) MEK= 3.8
Boiling Point (°F) (Lowest Component Information):	MEK = 175 F
Flash Point (°F/C) (Lowest Component Information):	MEK = 23 F (-5 C)

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal conditions of handling, use and transportation. Avoid contact with water or moisture
Hazardous Polymerization:	Will not occur under normal conditions. Avoid contact with water or moisture. Polymerization will occur releasing CO ₂ . Pressure buildup in closed container may occur
Conditions to Avoid:	Avoid contact with heat, sparks, open flame, and static discharge. Keep away from any contact with water.
Materials to Avoid:	Reacts with water and other active hydrogen containing compounds. Avoid contact with amines. Keep containers tightly closed. Strong oxidizing agents.
Hazardous Decomposition Products:	Combustion of the dried polymer may release : Carbon Dioxide, Carbon Monoxide, Oxides of Nitrogen, Traces of HCN.
Additional Guidelines:	Not Applicable

11. TOXICOLOGICAL INFORMATION

Acute Effects:	Acute Health Effects of this product have not been determined. The following information is available on major components: MEK - LD50, Oral-Rat 2900 mg/kg; LD50, Dermal-Rabbit 5000 mg/kg; LD50, Inhalation-Rat 5000 ppm / 7 hr. MDI - LD50, Oral-Rat > 10,000 mg/kg; LD50, Dermal-Rabbit 6,200 mg/kg; LC50, Inhalation-Rat 172-187 mg/m ³ - 4 hours
Chronic Effects:	Chronic Health Effects of this product have not been determined. The following information is available on major components: MDI - In a combined chronic inhalation toxicity / oncogenicity study, rats were exposed to an aerosol of polymeric MDI for 6 hours per day, 5 days per week for one or two years. The exposure concentrations were 0, 0.2, 1.0, 6.0 mg/m ³ . Microscopic examination of tissues revealed the effects of irritation to the nasal cavity and lungs in animals exposed to 1.0 and 6.0 mg/m ³ . The No Observable Effect Level (NOEL) was 0.2 mg/m ³ . MEK - Target organs include central nervous system.
Aggravated Conditions:	Not determined.
Carcinogenicity:	Carcinogenic effects of this product have not been determined. The following information is available on major components: MDI - In the study described above (see CHRONIC TOXICITY), the occurrence of pulmonary adenomas and a single pulmonary adenocarcinoma was considered to be related to MDI. These tumors were observed only in rats exposed to the high concentration of 6.0 mg/m ³ . NEITHER MDI NOR POLYMERIC MDI ARE LISTED BY THE NTP, IARC OR REGULATED BY OSHA AS CARCINOGENS.
Reproductive/Developmental Toxicity:	Reproductive / Developmental health effects of this product have not been determined. The following information is available on major components: MDI - Rats were exposed to polymeric MDI at air concentrations of 0, 1, 4, and 12 mg/m ³ during days 6-15 of gestation. Maternal toxicity (including mortality) was observed at the highest concentration of 12 mg/m ³ accompanied by embryo and fetal toxicity. However, no teratogenic effects were observed even at this lethal concentration.
Mutagenicity:	Mutagenicity of this product has not been determined. The following information is available on major components: MDI - Positive (Salmonella microsome test with metabolic activation, cell transformation assay) as well as negative (mouse lymphoma specific locus mutation test with or without metabolic activation) results have been observed "in vitro". The use of certain solvents which rapidly hydrolyze MDI is suspected of producing mutagenicity in some of these studies. MDI was negative in an "in vivo" (mouse micronucleus) assay.
Other:	None known.

12. ECOLOGICAL INFORMATION

Methyl Ethyl Ketone 78-93-3 (10 to 15)

Water Flea Data	5091 mg/L EC50 Daphnia magna 48 h 520 mg/L EC50 water flea 48 h
Microtox Data	3403 mg/L EC50 Photobacterium phosphoreum 30 min 3426 mg/L EC50 Photobacterium phosphoreum 5 min
Freshwater Fish Species Data	1690 mg/L LC50 Lepomis macrochirus 96 h 3220 mg/L LC50 Pimephales promelas 96 h

13. DISPOSAL CONSIDERATIONS

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Other Disposal Considerations: None
Contaminated Packaging: Empty drums may contain harmful vapors and residue. If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Dispose according to national or local regulations.
RCRA Status: (Classification applies to the product as sold.) Not classified as a RCRA waste.

14. TRANSPORT INFORMATION

DOT:
DOT Shipping Name: ISOCYANATE, SOLUTIONS, TOXIC, N.O.S. (Methyl Ethyl Ketone, 4,4'-Diphenylmethane Diisocyanate)
DOT Information: 3, 6.1 UN2478 PG II
DOT Label: FLAMMABLE LIQUID TOXIC
DOT ERG: 155

15. REGULATORY INFORMATION

U.S. REGULATORY RULES

TSCA Inventory Status: All components are included in the EPA Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

INGREDIENT NAME/ CAS NUMBER	CERCLA Reportable Quantity	CERCLA/SARA - 302 Ext. Haz. Substances	TSCA - Sect. 12(b) Export Notification	SARA 313 Chemicals
Polyurethane Polymer (70 to 100)	N/A	N/A	Not Listed.	
Methyl Ethyl Ketone 78-93-3 (10 to 15)	2270 kg final RQ 5000 lb final RQ	N/A	Not Listed.	
4,4'-Diphenylmethane Diisocyanate 101-68-8 (1 to 5)	2270 kg final RQ 5000 lb final RQ	N/A	Listed	1.0 % de minimis concentration

STATE REGULATIONS

PROPOSITION 65 STATUS: No components present in this product are known to the State of California to cause cancer and/or reproductive toxicity and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986.

INGREDIENT NAME/ CAS NUMBER	RI Hazardous Substance List	MN Right to Know List	NJ Right to Know List	MA Right to Know List	PA Right to Know List
Polyurethane Polymer (70 to 100)	Not Present	Not Present	TSRN 050250533-5028	Not Present	Not Present
Methyl Ethyl Ketone 78-93-3 (10 to 15)	Toxic; Flammable	Present	sn 1258	Present	Environmental hazard
4,4'-Diphenylmethane Diisocyanate 101-68-8 (1 to 5)	Toxic	Present	sn 1253	Present	Environmental hazard

CANADIAN REGULATIONS

Canadian Inventory: All components are included on the Canadian DSL.

WHMIS Hazard Classification: Not determined

OTHER REGULATIONS

16. OTHER INFORMATION

The following has been revised since the last issue of this MSDS: General revision and clarification.

Label Number: # 12

Additional Information: Not Applicable

Important Note: This company makes no warranty regarding the safety of this product when used incorrectly.

*****END OF MSDS*****