



## MATERIAL SAFETY DATA SHEET

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Issued: 03/05/2008

Date of Printing: 02/24/2011

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Id:** Uradur 1146  
**Chemical Family:** Moisture Cure Polyurethane Solution  
**Application:** Coating Solution  
**Prepared By:** Health, Safety and Environment Department  
**HMIS Classification:** Health: 4\* 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
Ethyl Acetate 141-78-6	25 to 30	1400 mg/m <sup>3</sup> 400 ppm	400 ppm
Isophorone Diisocyanate 4098-71-9	1 to 5	N/A	0.005 ppm

**Other Information:** Not Applicable

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW:

**DANGER:** Clear to amber  
Flammable liquid and vapor. Contains monomeric ISOPHORONE DIISOCIANATE. Causes skin irritation. May cause allergic skin reaction. may cause allergic respiratory reaction. may cause eye irritation. May be fatal if aerosol or mist is inhaled. Closed containers may explode under extreme heat or when contaminated with water; 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. Do not seal containers that have been contaminated with water.

<b>Inhalation:</b>	Highly toxic by inhalation of aerosol or mist. IPDI is a respiratory sensitizer, and exposure to high concentrations can be fatal due to pulmonary edema, which can be delayed until several hours after exposure. This effect can be aggravated by physical exertion. Vapors and/or aerosols of this material will probably irritate mucous membranes, eyes, nose, and respiratory passages. May cause drowsiness and/or dizziness. May cause Central Nervous System effects.
<b>Skin Contact:</b>	May cause moderate skin irritation. May cause an allergic skin reaction. IPDI - Severly irritating. May cause skin sensitization, an allergic reaction, which becomes evident on re-exposure to this material. Possible sensitizer.
<b>Eye Contact:</b>	Causes severe eye irritation. Possible sensitizer.
<b>Ingestion:</b>	May be harmful if swallowed. ETHYL ACETATE - Swallowing a large quantity may cause nausea and central nervous system depression, with weakness, drowsiness, and loss of consciousness.

#### 4. FIRST AID MEASURES

<b>Inhalation:</b>	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.
<b>Skin Contact:</b>	For skin contact, wipe away excess material with dry towel. Then wash affected areas with plenty of water, and soap if available, for several minutes. Get medical attention if irritation occurs. Remove contaminated clothing and launder before reuse. Remove contaminated shoes and discard.
<b>Eye Contact:</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention.
<b>Ingestion:</b>	If swallowed, give 1-2 glasses of water, but do not induce vomiting. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention.

#### 5. FIRE FIGHTING MEASURES

<b>Lowest Component Flash Point (°F):</b>	Ethyl Acetate = 24F
<b>Flash Point Method:</b>	Closed Cup
<b>FLAMMABILITY</b>	(Lowest Component Information)
<b>LFL (% Vol):</b>	Ethyl Acetate = 2.2%
<b>UFL (% Vol):</b>	Ethyl Acetate = 9.0%
<b>Extinguishing Media:</b>	Water fog, carbon dioxide, foam, dry chemical.
<b>Special Fire Hazards:</b>	Containers can rupture in a fire releasing toxic and corrosive gases. Vapors are heavier than air and can travel along the ground to a source of ignition and flash back; they can accumulate in low lying areas.
<b>Special Exposure Hazards:</b>	During a fire, IPDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion.
<b>Special Protective Equipment:</b>	Fire fighters should wear full protective clothing, including self-contained breathing equipment: Use water spray to keep fire-exposed containers cool.
<b>NFPA Rating:</b>	Health: 4 Flammability: 3 Reactivity: 1 Special: W

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautionary Measures:</b>	Wear appropriate protective equipment (See Section 8).
<b>Environmental Precautions:</b>	Prevent from entering sewers, waterways or low areas. Prevent contamination of soil.

## 6. ACCIDENTAL RELEASE MEASURES

### Spill Procedures:

Remove all sources of ignition and ventilate the area. Vapors are much heavier than air and as such will accumulate in low-lying areas, presenting a hazard to anyone entering such places. Low-lying areas should be ventilated and checked before permitting access. 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. Clean up spill area with a decontamination solution made up of 50% isopropyl alcohol, 45% water, and 5% concentrated ammonia solution. Solution should cover the area for at least an hour. Allow for ventilation of containers with spill clean up as CO<sub>2</sub> generation will occur with clean up solution.

## 7. HANDLING AND STORAGE

### NORMAL HANDLING:

Wear appropriate protective equipment. See Section 8 for normal handling recommendations. Avoid contact with eyes, skin, and clothing. Use in well ventilated area. Ground and bond containers before transferring liquid.

### STORAGE RECOMMENDATIONS: Flammable Storage

Keep containers tightly closed. Store in a cool dry place. Ground equipment to prevent static build-up. Ground containers when pouring or transferring.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering Controls:

Use local exhaust ventilation to assure that isophorone diisocyanate levels in the air are below established exposure limits.

### Respiratory Protection:

In operations where the exposure limits can be exceeded, wear a NIOSH approved respirator selected by a technically qualified person. If a respirator is worn, OSHA requires compliance with its respiratory protection program (29 CFR 1910.134).

### Eyes:

Safety glasses (with side shields)

### Gloves:

Butyl rubber.

### Protective Clothing:

Long sleeved clothing and Apron

### Hygienic Work Practices:

Use 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. Remove clothing or shoes that have become wet with this product. Launder clothing before reuse. Decontaminate or discard shoes.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical State:

Liquid

### Color:

AMBER/CLEAR LIQUID

### Odor:

PUNGENT SWEET

### % Solids by Weight:

75 %

### % Volatile by Volume:

31.25 %

### pH:

Not Determined

### Specific Gravity:

1.13

### Density:

9.4 lbs/gal

### Solubility in Water:

Nil

### Molecular Weight:

Not Determined

### VOCs (lbs/gallon):

2.35 lbs./gal

### Evaporation Rate (Highest Component Information):

(Normal Butyl Acetate=1) ETHYL ACETATE = 4.5

**Boiling Point (°F)** Ethyl Acetate = 171F  
**(Lowest Component Information):**

**Flash Point (°F/C)** Ethyl Acetate = 24 F (-4 C)  
**(Lowest Component Information):**

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under normal conditions of handling, use and transportation.  
**Hazardous Polymerization:** Will not occur under normal conditions. Avoid contact with water or moisture. Polymerization will occur releasing CO<sub>2</sub>. Pressure buildup in closed container may occur  
**Conditions to Avoid:** Avoid contact with heat, sparks, open flame, and static discharge.  
**Materials to Avoid:** Avoid contact with Moisture and water as polymerization will occur to release CO<sub>2</sub> which may pressurize non-vented containers. Avoid contact with alcohols, amines, acids, strong oxidizing agents, strong bases.  
**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: IPDI - LD<sub>50</sub>, Oral-Rat 4825 mg/kg; LD<sub>50</sub>, Dermal-Rabbit >7000 mg/kg; LC<sub>50</sub>, Inhalation-Rat 0.04 mg / L / 4 hours (literature value for aerosols). ETHYL ACETATE - LD<sub>50</sub>, Oral-Rat 6.1 g/kg; LC<sub>50</sub>, Inhalation-Rat 1600 ppm 8 hrs

**Chronic Effects:** Chronic Health Effects of this product have not been determined. The following information is available on major components: IPDI - No additional test data found for this product. ETHYL ACETATE - Rats received 0, 300, 900, or 3600 mg/kg ethyl acetate daily by gavage for 90 days. The high dose male rats showed significantly depressed body and organ weights and depressed food consumption. the No-Observed-Adverse-Effect-Level (NOAEL) was considered to be 900 mg/kg. rats were exposed to 0, 350, 750, 1500 ppm ethyl acetate vapor for 6 hours per day, 5 days per week, for 13 weeks. No mortality was observed. Observations noted in the 750 and 1500 ppm groups included diminished alerting response due to the sedative properties of ethyl acetate) during the daily 6-hour exposure periods which reversed after exposure ended. Decreased body weight and food consumption were also noted. No persistent neurotoxic effects were observed in a battery of tests conducted to assess this endpoint during subchronic inhalation exposure. Microscopic examination of the tissues and organs did not reveal evidence of systemic toxicity at any dose level. The only microscopic finding was irritation of the nasal tissue (nasal olfactory mucosa) at all doses. At 350 ppm, the nasal irritation was graded as "minimal" in severity.

**Aggravated Conditions:** Not determined.

**Carcinogenicity:** Carcinogenic effects of this product have not been determined. The following information is available on major components: IPDI - Not Classified as a Carcinogen. ETHYL ACETATE - No additional test data found for this products.

**Reproductive/Developmental Toxicity:** Reproductive / Developmental health effects of this product have not been determined. The following information is available on major components: IPDI - No additional test data found for this product. ETHYL ACETATE - In the subchronic inhalation study previously discussed, there were no effects at any does level on the number of spermitids in the testes, the number of sperm in the epididymides, sperm motility or sperm morphology. No other studies conducted according to established scientific principles were available.

**Mutagenicity:**

Mutagenicity of this product has not been determined. The following information is available on major components: IPDI - No additional test data found for this product. ETHYL ACETATE - IN VITRO: Results were equivocal. Was negative in two Ames tests with Salmonella typhimurium and in a recombination assay with Bacillus subtilis. In the Sister Chromatid Exchange (SCE) assay with Chinese hamster ovary (CHO) cells, it was positive with activation and negative without activation. In five separate tests for aneuploidy with Saccharomyces cerevisiae, it was positive four times. It was negative for chromosomal aberrations in CHO cells, but positive in Chinese hamster lung fibroblasts. IN VIVO: Not Mutagenic: Ethyl Acetate was negative in three separate micronucleus assays - mouse (i.p.), Chinese hamster (I.P.) and Chinese hamster (gavage).

**Other:**

None known.

## 12. ECOLOGICAL INFORMATION

### Ethyl Acetate 141-78-6 (25 to 30)

Water Flea Data	717 mg/L EC50 Daphnia magna 48 h
Microtox Data	1180 mg/L EC50 Photobacterium phosphoreum 5 min 1500 mg/L EC50 Pseudomonas fluorescens 15 min 5870 mg/L EC50 Photobacterium phosphoreum 15 min 7400 mg/L EC50 Pseudomonas fluorescens 2 h
Freshwater Fish Species Data	230 mg/L LC50 Pimephales promelas 96 h 484 mg/L LC50 Oncorhynchus mykiss 96 h
Freshwater Algae Data	3300 mg/L EC50 Scenedesmus subspicatus 48 h

### Isophorone Diisocyanate 4098-71-9 (1 to 5)

Water Flea Data	83.7 mg/L EC50 Daphnia magna 24 h
Freshwater Fish Species Data	1.8 mg/L LC50 Leuciscus idus 48 h
Freshwater Algae Data	118.7 mg/L EC50 Scenedesmus subspicatus 72 h

## 13. DISPOSAL CONSIDERATIONS

**Other Disposal Considerations:  
Contaminated Packaging:**

Do not dump into any sewers, on the ground or into any body of water. 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. Empty containers may contain explosive vapors. Keep from spark, flame, and heat sources. Do not Cut or Weld.

**RCRA Status: (Classification  
applies to the product as sold.)**

D001 (Ignitable) D003 (Reactive)

## 14. TRANSPORT INFORMATION

**DOT:**

<b>DOT Shipping Name:</b>	ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S. (Ethyl Acetate, Isophorone Diisocyanate)
<b>DOT Information:</b>	3, 6.1 UN2478 PG II
<b>DOT Label:</b>	FLAMMABLE LIQUID, TOXIC
<b>DOT ERG:</b>	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.	
Ethyl Acetate 141-78-6 (25 to 30)	2270 kg final RQ 5000 lb final RQ	N/A	Not Listed.	
Isophorne Diisocynate 4098-71-9 (1 to 5)	N/A	500 lb TPQ	Not 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	Not present	Not Present	Not Present
Ethyl Acetate 141-78-6 (25 to 30)	Toxic; Flammable	Present	sn 0841	Present	Environmental hazard
Isophorne Diisocynate 4098-71-9 (1 to 5)	Toxic	Skin	sn 1068	Extraordinarily hazardous	Environmental hazard

### CANADIAN REGULATIONS

**Canadian Inventory:** This product contains one or more chemicals not listed on the Canadian DSL.  
**WHMIS Hazard Classification:** B2 FLAMMABLE LIQUIDS  
D1A VERY TOXIC MATERIALS  
D2A VERY TOXIC MATERIALS  
D2B TOXIC MATERIALS



### OTHER REGULATIONS

## 16. OTHER INFORMATION

The following has been revised since the last issue of this MSDS: New Address

**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\*\*\***