

# MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME:

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EMERGENCY TELEPHONE NO:

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DATE PREPARED: 05/17/2013

## SECTION I -- PRODUCT IDENTIFICATION

PRODUCT NUMBER: UH-1000-OX

HMIS RATINGS: H F R PP

PRODUCT NAME: UH-1000-OX Super Catalyst & Hardener - Low VOC 2 3 1 K

PRODUCT CLASS: Polyisocyanate Blend (Polyfunctional & Cycloaliphatic)

## SECTION II -- HAZARDOUS INGREDIENTS

INGREDIENT	CAS NUMBER	WEIGHT PERCENT	ACGIH/TWA
			OCCUPATIONAL EXPOSURE LIMIT
p-Chlorobenzotrifluoride (PCBTF)	98-56-6	23-24	25PPM CEL 8hr TWA
n-Butyl Acetate	123-86-4	6-7	150 PPM TWA
HDI Homopolymer (Hexane, 1,6-Diisocyanate)	28182-81-2	53-54	Not Est.
Isophorone Diisocyanate Homopolymer (IPDI)	53880-05-0	16-17	Not Est.
Residual IPDI monomer content < 0.2% )	4098-71-0	<.2%	.005 PPM TWA

## SECTION III -- PHYSICAL DATA

V.O.C.: <= 100 grams/liter

VAPOR DENSITY: Heavier than Air

EVAPORATION RATE: Slower than Ether

% VOLATILE VOLUME: 29%

WT/GAL: 9.75 lbs.

SOLUBILITY: Insoluble in water

## SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: Flammable Liquid

FLASH POINT: 81°F TCC (n-B Acetate)

LEL: N.E.

UEL: 7.6 (n-butyl acetate)

EXTINGUISHING MEDIA:

Dry chemical, foam, CO2, water

UNUSUAL FIRE AND EXPLOSION HAZARDS:

During a fire, irritating and/or toxic gases and aerosols from the decomposition combustion products may be present.

SPECIAL FIREFIGHTING PROCEDURES:

Full emergency equipment should be worn. Spray drums of material involved in fire but not themselves on fire, with water to minimize risk of rupture.

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## **Section V-HUMAN HEALTH DATA**

PRIMARY ROUTE (S) of Exposure: Inhalation, Skin Contact; Eye Contact.

### **HUMAN EFFECTS: SIGN AND SYMPTOMS OF OVEREXPOSURE**

#### **INHALATION:**

Acute Exposure. HDI & IPDI vapors or mist at concentrations above the TLV or MGL 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). Person with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or MGL with similar symptoms as well as an asthma attack. Exposure well above the TLV of MGL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical of hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, and chills) has also been reported.

Chronic Exposure. 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 will below the TLV or MGL. 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 over exposure 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.

#### **SKIN CONTACT:**

Acute Exposure. 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. Cure material is difficult to remove.

Chronic Exposure. 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 contact with very small amounts of liquid material or even as a result of vapor-only exposure.

#### **EYE CONTACT:**

Acute Exposure: Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.

Chronic Exposure. None found

#### **INDEGESTION:**

Acute Exposure. Can result in irritation and possible corrosive action in the mouth, stomach tissue and digestive tract.

Chronic Exposure. None found

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Asthma and other respiratory disorders (bronchitis, emphysema and hyperactivity) skin allergies and eczema.

**CARCINOGENICITY:**

NTP.....: Not Listed  
 IARC.....: Not Listed  
 OSHA.....: Not Regulated

**EXPOSURE LIMITS:** Not established for product as a whole. Refer to section for exposure limits of hazardous constituents. The suppliers Guideline Level of 1 mg/m<sup>3</sup> for the Homopolymer of HDI and 0.02 ppm ceiling for HDI monomer are internal guides based on limited data ; they are provided as guides pending the review of future data.

### **SECTION VI—EMERGENCY & FIRST AID PROCEDURE**

**EYE CONTACT:** 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.

**SKIN CONTACT:** Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under water shower after removing clothing then get medical attention. For lessor exposures, seek medical attention if irritation develops or persists.

**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.

**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.

**NOTE TO PHYSICIAN:**

Eyes: Stain foe 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 product is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.

Ingestion: Treat symptomatically. There is no specific antibiotic. Inducing vomiting is contraindicated because of the irritating nature of the product.

Inhalation: This product is a known pulmonary sensitizer. Treatment is essentially symptomatic.

An individual having a dermal or pulmonary sensitization reaction to this material must be removed from any further exposure to any isocyanate.

### **SECTION VII—EMPLOYEE PROTECTION RECOMMENDATIONS**

Precautions must be taken so that person handling this product does not breathe the vapors or have it contact the eyes for skin. In spray operations, protection must be afforded against exposure to both vapor and spray mist.

**EYE PROTECTION:** Safety glassed, splash goggles or face shield. Contact lenses should be worn.

**SKIN PROTECTION:** 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.

**VENTILATION:** Exhaust ventilation sufficient to keep the airborne concentrations of HDI and polyisocyanate below their respective TLV and MGL must be utilized. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

**RESPIRATORY PROTECTION:** A respirator that is recommended or approved for use in isocyanate containing environments (air purifying or fresh air supplied) may be necessary. Consider type of application and environmental concentrations. Observe OSHA regulations for respirator use (29 CFR 1910.134)

Note on Odor Warning Properties: Pure isocyanate materials have odor thresholds that are higher than the TLV, PEL or MGL. Thus, if a vapor/particulate air-purifying respirator has exceeded its service life, breakthrough of the filter can result in exposure over the allowable limit without the wearer being able to smell the isocyanate. However, when a polyurethane coating system contains organic solvents, the wearer of a vapor particulate respirator will be warned of filter breakthrough by the odor of solvents before being exposed to isocyanates because:

- 1) organic solvents have low odor threshold, and
- 2) Testing has demonstrated that solvents break through filters before isocyanates do.

### Spray Application

A. Good industrial hygiene practice dictates that when isocyanate based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of organic solvent containing coating systems, the use of a positive pressure supplied air respirator is mandatory when:

- the airborne isocyanate concentrations are not known, or
- the airborne isocyanate monomer concentrations exceed 0.05 ppm ( 10 times the TLV) or the polyisocyanate (Polymeric, oligomeric) concentrations exceed 10 mg/m<sup>3</sup> (10 times the MGL) or
- spraying is performed in a confined space or in an area with limited ventilation.

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 adequate protection when:

- the airborne isocyanate monomer concentrations are known to be below 0.05 ppm (10 times the TLV), and
- the polyisocyanates (polymeric, oligomeric) concentrations are known to be below

10 mg/m<sup>3</sup> (10 times the MGL).

B. During the spray applications of a coatings system not containing organic solvents a positive pressure supplied air respirator is mandatory when

- the airborne isocyanate monomer concentration exceeds the TLV of 0.005 ppm

or,

- if the polyisocyanates (polymeric, oligomeric) concentration exceeds the MGL of 1 mg/m<sup>3</sup>,

or,

- the airborne isocyanate concentrations are known, or,
- the spraying is performed in confined space or in an area with limited ventilation.

Under any other circumstances, during spray application of a coating system not containing organic solvents, good industrial hygiene practice dictates that when isocyanate based coatings are spray applied some form of respiratory protection should be worn.

### Non-spray operations

- A. 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 air borne isocyanate vapors.

Therefore, when the coatings system contains solvents and will be applied in a non-spray manner, a positive pressure supplied air respirator must be worn when:

- the airborne concentrations are unknown; or
- the airborne concentrations exceed 0.05 ppm ( 10 times the LV), or,
- the airborne concentrations of the polyisocyanates (polymeric, oligomeric) exceed 10 mg/m<sup>3</sup> ( 10 mg/m<sup>3</sup> (10 times the MGL), or
- operations are performed in a confined space or in an area with limited ventilation

At least an air purifying (organic vapor) respirator is required when:

- the airborne concentrations of the isocyanate monomer exceed the TLV of 0.005 ppm but are below 0.05 ( 10 times the TLV), or
- the airborne concentrations of the polyisocyanates (polymeric, oligomeric) exceed the MGL of 1 mg/m<sup>3</sup> but are below 10 mg/m<sup>3</sup> (10 times the MGL)

- B. During non-spray operations using a solvent free coatings system, a positive pressure supplied air respirator is mandatory when

- the airborne isocyanate monomer concentrations exceed the TLV of 0.05 ppm, or
- the airborne concentrations of the polyisocyanate (polymeric, oligomeric) exceed the MGL of mg/m<sup>3</sup>, or
- operations are performed in a confined space or in an area with limited ventilation.

MONITORING: Refer to Patty's Industrial Hygiene and Toxicology-Volume 1 (3<sup>rd</sup> edition) Chapter 17 and Volume III (1<sup>st</sup> 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 functions tests (FEV<sub>1</sub><FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other Chronic respiratory diseases or recurrent skin eczema or sensitization should be to an isocyanate, no further exposure can be permitted.

OTHER: Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions.

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### **Section VIII Reactivity Data**

STABILITY: Stable under normal conditions.

POLYMERIZATION: May occur if in contact with moisture or other materials which react with isocyanates. May occur at temperature over 400 F (204 C).

INCOMPATIBILITY (MATERIALS TO AVOID): Water, amines. Strong bases alcohol's, metal compounds and surface-active materials.

HAZARDOUS DECOMPOSITION PRODUCTS: By high heat and fire: carbon monoxide, oxides of nitrogen, HCN, HDI.

### **Section IX—SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Evacuate nonessential personnel. Remove all sources of ignition and ventilate the area. Notify appropriate authorities if necessary. Put on Personal Protective Equipment (see Section VII). Dike or impound spilled material and control further spillage if feasible. Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solutions over the 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 contamination solutions. Decontamination solutions: nonionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%).

CERCLA (SUPERFUND) REPORTABLE QUANTITY: None

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. Decontaminate containers prior to disposal. **DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.** (See Section IV and VIII).

RCRA STATUS: 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)

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA), TITLE III:

Section 302-Extremely-Hazardous Substances: None

Section 313 – Toxic Chemicals: None

### **Section X—SPECIAL PRECAUTIONS & STORAGE DATA**

STORAGE TEMPERATURE (MIN./MAX.): -30 F (-34 C)/122 F (50 C)

AVERAGE SHELF LIFE: 6 months at 77 F (25 C) after receipt of material by customer.

SPECIALT SENSITIVITY (HEAT, LIGHT, MOISTURE): If container is exposed to high heat, it can be pressurized and possibly rupture explosively. HDI reacts slowly with water to form CO<sub>2</sub> gas. This can cause sealed containers to expand and possible rupture explosively.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: 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 910-27 C). Avoid contact with skin and eyes. Employee education and training in the safe use and handling of this product are required under OSHA Hazard Communication Standard.**

### **SECTION XI – SHIPPING DATA**

D.O.T. Shipping Name: RESIN SOLUTION (contains n-Butyl Acetate, 3, UN1866, PGIII

Limited Quantity (*most liquid coatings packaged in small containers up to and including 32 fl. oz. quart size use this description*)

Hazard Label: Flammable Liquid

EMERGENCY RESPONSE GUIDE: 26

