MSDS *Material Safety Data Sheet*

1.4.2011

MSDS Number BTR-1103-UV

8 Pages

1.0 Product and Company Identification

Manufacturer:
OTS Manufacturing and Supply, Inc.
293 Industrial Drive
Lexington, SC 29072

Contact: Ron Wilson
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Emergency Contact: INFOTRAC 800-535-5053

Product Name: BTR-1103-UV
Revision Date: 12.15.09
MSDS Number: BTR 1103-UV
Chemical Family: Aliphatic Diisocyanate prepolymer

This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. Transportation Emergency phone number: INFOTRAC 800 535-5053

2.0 Hazards Identification

Route of Entry: Skin and Eye contact from liquid and aerosols. Inhalation- although this product is low in volatility, an inhaling hazard can exist from the aerosols or vapors formed during application.

Target of Organs: Skin; eyes; upper respiratory tract (aerosol).

Inhalation: ACUTE EXPOSURE: Vapor 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). Individuals with a pre-existing, non-specific bronchial hyper-reactivity can respond to the concentrations below the TLV with similar symptoms as well as 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. These symptoms can be delayed up to several hours after exposure.
CHRONIC EXPOSURE: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later isocyanate exposure at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma 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. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitatization can either be temporary or permanent.

Skin Contact: ACUTE EXPOSURE: Isocyanates react with skin protein and moisture and can cause irruption irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.
CHRONIC EXPOSURE: Prolonged contact can cause reddening, swelling, rash, scaling blistering, and is come cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor.

Eye Contact: ACUTE EXPOSURE: Liquids, aerosols or vapors are irritating and can cause tearing, reddening, and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.
CHRONIC EXPOSURE: None Found

Ingestion: ACUTE EXPOSURE: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.
CHRONIC EPXOSURE: None found

3.0 Composition/Information on Ingredients

Ingredients**:**

CAS #	Chemical Name	Percent
25322694	Poly (oxy(methyl-1-1,2-ethanediyl)), . alpha	60-70
5124301	Cyclohexane, 1,1'-methylenebis(4-isocyanto)	36-46
77587	Stannane, dibutylbis ((1-oxododecyl)oxy)-	1-3
6425394	Morpholine, 4,4' – (oxydi-2,1-ethanediyl)b	1-3

OSHA Regulatory Status: This MSDS Contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

4.0 First Aid Measures

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. Consult physician should this occur.

Skin Contact: Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if irritation develops or persist after the area is washed.

Eye Contact: Flush with copious amounts of lukewarm water for at least 15 minutes, holding eyelids open at all times. Refer individual to physician or ophthalmologist for immediate follow-up.

Ingestion:

DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANTYHING BY MOUTH TO AN UNCONSCIOUS PERSON. Get prompt, qualified medical attention. Ingestion may result in vomiting. If vomiting occurs spontaneously, do not allow vomitous to be breathed into the lungs as even a small quantity in the lungs may result in aspiration pneumonitis.

Note to Physician: Skin- This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as a thermal burn.

Eyes- Stain for evidence of corneal injury, If cornea is burned, install antibiotic steroid preparation frequently. Workplace vapors may produce corneal epithelial edema impairing vision.

Respiratory- This compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

Ingestion- Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound.

5.0 Fire Fighting Measures

Flash Point: Not established

Dry chemical (e.g. monoammonium phosphate, potassium sulfate, and potassium chloride), carbon dioxide, high expansion (proteinic) chemical foam, water spray for large fires. Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. During a fire, vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 400 DEG F (204 DEG C), this product can be polymerized and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

Unusual Fire or Explosion Hazards:

Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction with water and hot isocyanate can be vigorous.

6.0 Accidental Release Measures

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 last 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to safe place, cover loosely and allow to stand for 24 to 48 hours. Wash down area with decontamination solutions. Decontamination solutions: non-ionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%). Respiratory protection is recommended during spill clean-up.

7.0 Handling and Storage

Handling Precautions: Avoid breathing vapors or mist; Avoid contact with eyes, skin or clothing: Do not expose containers to open flame, excessive heat, or direct sunlight.

Storage Requirements: Storage temperature: Minimum 40 DEG F (5DEG C) / Maximum 150 DEG (66 DEG C). Store in tightly closed containers to prevent moisture contamination. This product reacts slowly with water to from CO2 gas. This gas can cause sealed containers to expand and possibly rupture. Do not reseal if contamination is suspected.
Store in cool/dry area.

8.0 Exposure Controls/Personal Protection

Engineering Controls: Educate and train employees in safe use of this product. Follow all label instructions. Local exhaust should be used to maintain levels below the TLV whenever this product is processed, heated or spray applied. For spray applications, an air-supplied respirator must be worn. All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).

Protective Equipment: An air-supplied respirator must be worn during spray applications, during long-term (over 1 hour) exposures when the product is heated or in environments of high concentrations near the TLV, an air-purifying respirator equipped with organic cartridges or canisters and dust filters can be used. However, due to the poor warning properties of this product, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29CFR 1910.134).
Chemical resistant gloves (butyl rubber, nitrile rubber). Cover as much of the exposed area as possible with appropriate clothing. If skin creams are used, keep the area covered only by the cream to a minimum.
Liquid chemical goggles or full-face shield. Contact lenses should not be worn.
ADDITIONAL PROTECTIVE MEASURES: Clean, fresh running water should be available.

Exposure Guidelines: *OSHA PEL
The Occupational Safety and Health Administration (OSHA) does not currently regulate methylene bis(4-cyclo-hexylisocyanate).

*NIOSH REL
The National Institute for Occupational Safety and Health (NIOSH) has established a recommended exposure limit (REL) of 0.01 part per million (ppm) parts of air (0.11 milligram per cubic meter (mg/m(3))) as a ceiling for methylene bis(4-cyclohexylisocyanate). A worker's exposure to methylene bis(4-cyclohexylisocyanate) shall at no time exceed this ceiling level [NIOSH 1992].

* ACGIH TLV
The American Conference of Governmental Industrial Hygienists (ACGIH) has assigned methylene bis(4-cyclo-hexylisocyanate) a threshold limit value (TLV) of0.005 ppm (0.054 mg/m(3)) as a TWA for a normal 8-hour workday and a 40-hour workweek [ACGIH 1994, p. 26].

* Rationale for Limits

The NIOSH limit is based on the risk of pulmonary irritation, respiratory effects and sensitization [NIOSH 1992]. The ACGIH limit is based on the risk of pulmonary irritation [ACGIH 1991, p. 996]

* OSHA PEL
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9.0 Physical and Chemical Properties

Appearance: Clear
Physical State: Liquid
Odor: Slightly musty
pH: N.A.

Boiling Point: Not established
Freezing/Melting Pt: Not established
Solubility: Reacts slowly with water to liberate CO2 gas.

Vapor Pressure: Not Established

Spec Grav./Density:

Vapor Density: Not Established

VOC: 0 g/L

Bulk Density: 9.0 lbs/gal

10.0 Stability and Reactivity

Stability: Product is stable under normal conditions.

Conditions to avoid: Temperatures over 400 DEG F (204 DEG C).

Materials to avoid (incompatibility): Water, amines, strong bases, alcohols.

Hazardous Decomposition products:	By Fire and High heat; hydrogen cyanide; Carbon dioxide (CO2) Carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke, Isocyanate, Isocyanic Acid, Other undetermined compounds.
Hazardous Polymerization:	May occur if in contact with moisture or other materials which react with isocyanates. May occur at temperatures over 400 DEG F (204 DEG C)

11.0 Toxicological Information

ACUTE INHALATION LC50: 434 mg/m3. (rat); 295 mg/cu.m./28 ppm (male rat); 307 mg/cu.m/29 ppm (female rat). (4
hours). High toxicity.

ACUTE DERMAL LD50: 10,000 mg/kg. (rabbit) Slight to very low toxicity.

SKIN IRRITATION: Irritating.

EYE IRRITATION: Very mildly to mildly irritating.

ACUTE ORAL LD50: 1065 mg/kg. (rat) Moderate toxicity.

SKIN SENSITIZATION: Sensitizer.

CARCINOGENICITY STATUS: This product is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, ACGIH,
or OSHA.

MEDICAL CONDITIONS AGGRAVATED: Skin allergies, asthma, other respiratory disorders, eczema.

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12.0 Ecological Information

Bioaccumulative potential: Not established

Ecotoxicity: Not established

Elimination (persistency and degradability): Not established

13.0 Disposal Considerations

Waste and container disposal must be 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 prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCH.

14.0 Transport Information

DOT (HM-181; DOMESTIC SURFACE)

UN/NA NUMBER:	NA 3082
D.O.T. SHIPPING NAME:	Other Regulated substances, Liquid, NOS (Dicyclohexylmethane Diisocyanate)
D.O.T. HAZARD CLASS:	9
PACKAGING GROUP:	PG III
D.O.T. LABEL	Miscellaneous
D.O.T. PLACARD	Miscellaneous Dangerous Goods

ICAO/IATA (AIR)

UN NUMBER:	UN 3334
PROPER SHIPPING NAME:	Aviation Regulated Liquid, NOS (Dicyclohexylmethane Diisocyanate)
HAZARD CLASS DIVISION NUMBER:	9
SUBSIDIARY RISK:	None
PACKING GROUP:	PG III
HAZARD LABEL(S):	Miscellaneous
RADIOACTIVE?:	Non-radioactive
PASSENGER AIR-MAXIMUM QUAN:	100 L
PACKING INSTRUCTION NUMBER:	906
CARGO AIR - MAXIMUM QUANTITY:	220 L
PACKING INSTRUCTION NUMBER:	906

IMO/IMDG CODE (OCEAN)

UN NUMBER:	none
PROPER SHIPPING NAME:	Aliphatic Isocyanate
HAZARD CLASS DIVISION NUMBER:	NON REGULATED
PACKING GROUP:	none
HAZARD LABEL(S):	none
HAZARD PLACARD (S):	none

15.0 Regulatory Information

COMPONENT / (CAS/PERC) / CODES

*Cyclohexane, 1,1 – methelynebis (4-isocyanto- (5124301 20-30%) MASS, PSHAWAC, PA. SARA313, TXAIR

TSCA: All components in this mixture are included in the TSCA Inventory.

REGULATORY KEY DESCRIPTIONS

MASS = MA Massachusetts Hazardous Substances List
OSHAWAC = OSHA Workplace Air contaminants
PA = PA Right –to Know List of Hazardous Substances
SARA313 = Sara 313 Title III Toxic Chemicals
TXAIR = TX Air Contaminants with Health Effects Screening Level

16.0 Other Information

OTS Company believes the information herein to be true, accurate and reliable and is given in good faith. The company cannot, however be held responsible for any errors or omissions and will not accept responsibility for any use which may be made of the information. Properties shown are typical and do not imply a specification. This information is based on practical experience and laboratory testing, successful use depends on the conditions applicable at the time and the equipment used. Users must ensure by their own testing that the products perform adequately in each situation. Since conditions and disposal are beyond our control, OTS Company, Inc. disclaims any liability incurred in connection with the use of our products; no warranty, express or implied, is given nor is any freedom from any patent or use of trademark owned by OTS or others implied.

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