

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

PRODUCT NAME: TCC-5000A
 CHEMICAL NAME: Cycloaliphatic Isocyanate Prepolymer
 MANUFACTURER: CASS POLYMERS OF MICHIGAN, INC.
 31200 STEPHENSON HWY
 MADISON HEIGHTS MI 48071 USA
 INFORMATION PHONE: (248) 588-2270
 EMERGENCY PHONE: (703) 527-3887(Call Collect)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Materials Information System (United States)

| | |
|-----------------|---|
| Health | 3 |
| Flammability | 1 |
| Physical Hazard | 0 |

Hazard Codes: *=Chronic Hazard 0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Serious Hazard, 4=Severe Hazard

Material Composition

| Component | CAS.NO | EINECS/ELINCS No. | Percent |
|----------------------------------|------------|-------------------|-----------|
| Dicyclohexylmethane Diisocyanate | 5124-30-1 | 225-863-2 | 35% - 45% |
| Polyether Polyol | 25322-69-4 | Not Available | 55% - 65% |

Hazardous Materials are required to be listed if present in concentrations of 1.0% or higher. Materials posing a possible Chronic Health Risk are required to be listed at concentrations of 0.1% or higher. Materials listed in section 2 are not necessarily hazardous. See section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION, and section 11-TOXICOLOGICAL INFORMATION for complete hazard/exposure limit information.

NOTE: This preparation is a reaction product of the materials listed above. The hazards presented by the individual raw materials have been listed in this MSDS in order that the maximum precautions appropriate for such materials may be taken. As a reaction product, this preparation may not present as serious a health risk as the individual components, but caution and careful handling are still required.

3. HAZARDS IDENTIFICATION

****Emergency Overview****

DANGER! Toxic gases and fumes may be given off during thermal decomposition or burning. Closed container may forcibly rupture under extreme heat or if contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. May cause allergic respiratory response. Harmful if inhaled. Respiratory sensitizer. Lung damage and respiratory sensitization may be permanent. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Causes eye irritation. May cause lung damage.

EC Classification(s): Xn-Harmful; N- Hazardous for the Environment

Risk Phrases: R20: Harmful by inhalation.
 R36/37/38: Irritating to the eyes, respiratory system and skin.
 R42/43: May cause sensitization by inhalation and skin contact.
 R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

(See Section 15-REGULATORY INFORMATION for complete risk phrases.)

Potential Acute Health Effects

Eyes

Causes irritation with symptoms or reddening, tearing, stinging and swelling. May cause temporary corneal injury. Vapors may cause irritation with symptoms of burning or tearing.

Respiratory

Diisocyanate vapors or mists at concentrations above the TLV or PEL can irritate the mucous membranes in the nose, throat and lungs, causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function. People with preexisting lung conditions or sensitivities may experience symptoms similar to asthma or asthma-like symptoms at

airborne concentrations below the TLV or PEL. Exposures at or above the PEL or TLV may cause bronchitis, bronchial spasms, and pulmonary edema (fluid in the lungs). Chemical or hypersensitivity pneumonitis with flu-like symptoms such as fever and chills have been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible in cases of acute exposure.

Skin

Causes irritation with symptoms of reddening, itching and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, swelling, itching or rash. Cured material is very difficult to remove from skin. Avoid direct skin contact.

Potential Chronic Health Effects

Respiratory

Repeated overexposures or single large dose may result in development of a sensitization to isocyanates with asthma or asthma-like symptoms. This may cause the individual to react at a later date to isocyanate exposures well below the TLV or PEL. Symptoms including chest tightness, coughing, wheezing, shortness of breath or asthmatic attack may be immediate or delayed for several hours after exposure. Extreme asthma attacks can be life threatening. Reports indicate that, once sensitized, an individual can experience these symptoms with exposure to dust, cold air or other non-isocyanate irritants in addition to exposure to isocyanates. This increased lung sensitivity can persist for weeks to several years. Sensitization can be permanent. Chronic exposure has also been reported to cause lung damage that may be permanent, including fibrosis and decrease in lung function.

Eye

Prolonged vapor contact may cause conjunctivitis.

Skin

Repeated skin contact may cause a persistent irritation or dermatitis. Repeated or prolonged exposure may aggravate existing dermatitis. Potent skin sensitizer. Once sensitized, and individual may react to direct skin contact and even airborne vapors below the TLV with reddening, rash, swelling and in extreme cases blistering and hives. These symptoms may be immediate or in some cases delayed several hours.

4. FIRST AID MEASURES

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Inhalation

Move effected persons to fresh air; if effects occur, consult a physician.

Skin Contact

Immediate, continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Destroy contaminated leather items.

Eye Contact

Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Ingestion

Do not induce vomiting. Give one glass (ca. 2.5 dL) of water or milk if available and transport to medical facility. Do not give anything by mouth to an unconscious person.

Note to Physician

Eyes: Stain for evidence of corneal injury.

Skin: This material is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.

Ingestion: Treat symptomatically. No specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this material.

Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to isocyanates.

5. FIRE FIGHTING PRECAUTIONS

Extinguishing Media

Water fog or fine spray. Carbon dioxide. Alcohol resistant foam. Dry chemical fire extinguishers.

Unusual Fire/Explosion Hazards

Closed container may forcibly rupture under extreme heat or when contents are contaminated with water. Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since the reaction between water and hot diisocyanate can be vigorous.

Protection of Firefighters

Firefighters should wear NFPA compliant structural firefighting protective equipment including self-contained breathing apparatus and NFPA compliant helmet, hood, gloves and boots. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other highly toxic and irritating fumes may be generated by thermal decomposition or combustion. Exposure to heated isocyanates is extremely dangerous.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Wear adequate personal protective equipment, see Section 8, EXPOSURE CONTROLS/PERSONAL PROTECTION.

Methods of Cleaning Up

Large spills: Contain with dike. Pump into suitable and properly labeled containers. Cover spill area with absorbent material. Saturate absorbent material with neutralization and mix. Repeat application of neutralization solution, with scrubbing, followed by absorbent until surface is decontaminated.

DO NOT SEAL WASTE COLLECTION CONTAINERS PRESSURE-TIGHT FOR 72 HOURS AFTER COLLECTION to allow any generated gasses to escape. Failure to observe this practice may result in the forcible rupture (explosion) of the container causing severe injury to bystanders.

Neutralization/Cleaning Solution

Mix equal amounts of the following to total two times the estimated volume of spilled material:

- (1) Mineral spirits (80%), VM&P Naptha (15%) and household detergent (5%) and (2) A 50% solution of monoethanolamine and water.

Additionally, a solution of 65% water, 20% isopropyl alcohol (rubbing alcohol), 10% household ammonia and 5% detergent is an effective cleaner and neutralizer for residual isocyanates if the mixture mentioned above is not readily available. Scrub the spill area with the neutralizing solution and a stiff bristle brush and absorb the washings for safe disposal. Repeat until no residue remains.

7. HANDLING AND STORAGE

Handling

Keep container dry. Do not ingest. Do not breathe gas/fumes/dust/spray/dust. Use adequate ventilation to keep airborne isocyanate levels below exposure limits. Warning properties (odors, eye, nose and throat irritation) are not sufficient to prevent over exposure. Odors are not detectable until well over triple the exposure limits. This material can produce asthmatic sensitization upon a single concentration exposure, or repeated low-level exposures. Individuals with lung problems or previous sensitization must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate skin and eye protection. Wash thoroughly after handling. Avoid breathing smoke or mist created from overheating or burning this material. Store in tightly sealed containers under a blanket of dry, inert gas. Do not reseal containers of moisture contamination is suspected.

Storage Temperature and Shelf Life

Store between 10°C and 27°C for maximum shelf life.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Hazardous Component Control Parameters –

| Component | CAS. No. | EINECS | Percent | Exposure Limits | Source |
|----------------------------------|-----------|-----------|-----------|------------------|--------|
| Dicyclohexylmethane Diisocyanate | 5124-30-1 | 225-863-2 | 35% - 45% | 0.115ppm TWA TLV | ACGIH |

-No Further Data Available-

Engineering Controls

Use of local exhaust is highly recommended. Local exhaust ventilation may also be necessary for operations involving machining of cured material to eliminate nuisance dusts.

Personal Protective Equipment

Respiratory Protection

Airborne exposures above the TLV can occur in inadequately ventilated areas when this material is heated, sprayed or otherwise aerosolized. In these cases, respiratory protection must be worn. Respiratory protection available for use includes supplied-air respirators such as SCBA apparatus or other positive pressure or continuous flow breathing apparatus. Air purifying respirators may also be used provided that the cartridges are either equipped with an end-of-service-life indicator or are part of a change-out schedule that ensures that cartridges are replaced well before the end of their service life. Use of the above safety equipment does not imply that airborne contaminate levels can or should be ignored.

Skin Protection

Stringent precautions should be taken to avoid skin contact. Spray application of materials based on this product enhances the risks of skin exposure. Wear impermeable protective clothing, preferably of the type that can be disposed of after use. Selection of specific items such as face shield, gloves, boots, apron, or full body suit will depend on operation. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection

Use of gloves is required. Use Nitrile rubber, Butyl rubber or Neoprene gloves.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as the instructions/specifications provided by the glove supplier.

Eye/Face Protection

Eye wash fountain should be located in immediate work area. Use chemical goggles. A full-face shield and supplied-air vapor respirator is recommended for operations involving spraying or other operations placing this material under pressurized conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------------|--|
| Appearance : | Viscous Liquid |
| Color: | Water-Clear |
| Odor : | None- Any detectable odor indicates overexposure to isocyanate vapors due to exceeded PEL. |
| Specific gravity : | 1.00 – 1.10 |
| Vapor pressure : | Not Determined |
| Boiling point/range : | Not Determined |
| Freezing point/range : | Not Determined |
| Water solubility : | Slightly Soluble in Water |
| pH : | Not Determined |
| Flash point : | 392°F; 200°C |
| Flammability-LFL : | Not Determined |
| Flammability-UFL : | Not Determined |
| % volatile: | 0g/L (0%) |

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal handling and storage conditions, see Section 7, Handling and Storage.

Materials to Avoid

Avoid water, amines, strong bases, alcohols, copper alloys, aluminum or temperatures above 350°F (177°C) In combination with isocyanates, these materials will result in a temperature and/or pressure increase or polymerization.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

This finished product has not been tested to determine individual toxicological/ecological limits. Individual components of this mixture have been independently tested by the raw material manufacturers and any known results have been presented below. The results for the individual components may not be representative of the toxicity of this finished product.

| Ingredient Name | CAS No. | % | Test | Result | Route | Species |
|---------------------|-----------|-----------|------|-----------------------|------------|---------|
| Dicyclohexylmethane | 5124-30-1 | 35% - 45% | LD50 | >11,000 mg/kg | Oral | Rat |
| Diisocyanate | | | LD50 | 434 mg/m ³ | Inhalation | Rat |

-No Further Data Available-

Potential Chronic Health Effects

Respiratory

Repeated overexposures or single large dose may result in development of a sensitization to isocyanates with asthma or asthma-like symptoms. This may cause the individual to react at a later date to isocyanate exposures well below the TLV or PEL. Symptoms including chest tightness, coughing, wheezing, shortness of breath or asthmatic attack may be immediate or delayed several hours after exposure. Extreme asthma attacks can be life threatening. Reports indicate that, once sensitized, an individual can experience these symptoms with exposure to dust, cold air or other non-isocyanate irritants in addition to exposure to isocyanates. This increased lung sensitivity can persist for weeks to several years. Sensitization can be permanent. Chronic exposure has also been reported to cause lung damage that may be permanent, including fibrosis and decrease in lung function.

Eye

Prolonged vapor contact may cause conjunctivitis.

Skin

Repeated skin contact may cause a persistent irritation or dermatitis. Repeated or prolonged exposure may aggravate existing dermatitis. Potent skin sensitizer. Once sensitized, and individual may react to direct skin contact and even airborne vapors below the TLV with reddening, rash, swelling and in extreme cases blistering and hives. These symptoms may be immediate or in some cases delayed several hours.

Carcinogen

This product contains no materials that are reported as known or suspect carcinogens in levels above 0.1%

Mutagen

This product contains no materials that are reported as known or suspect mutagens in levels above 0.1%

Reproductive Hazard

This product contains no materials that are known or suspected of causing a reproductive hazard in levels above 0.1%.

12. ECOLOGICAL INFORMATION**Persistence/degradability:**

The material contains components that show little or no evidence of biodegradability. Caution should be taken to prevent release to the environment. See Section 13 for further information.

Ecotoxicity Data:

| Ingredient Name | CAS No. | % | Test | Result | Species |
|---------------------|-----------|-----------|--------------|----------|-------------|
| Dicyclohexylmethane | 5124-30-1 | 35% - 45% | LC50, 96 hrs | 1.2 mg/L | Zebra Fish |
| Diisocyanate | | | LC50, 48 hrs | >5 mg/L | Green Algae |

-No Further Information Available-

Individual components of this mixture have been independently tested by the raw material suppliers and any known results have been presented above. The results for the individual components may not be representative of the ecological toxicity of this finished product. This finished product has not been tested to determine individual toxicological/ecological limits. Great Caution should be taken to prevent release to the environment. See Section 13 for further information.

13. DISPOSAL CONSIDERATIONS**Disposal**

Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations. The generation of waste should be avoided or minimized wherever possible. Untreated material is not suitable for disposal. Waste, even small quantities, should never be poured down drains, sewers or watercourses. Waste must be disposed of in accordance with federal, state and local environmental control regulations. This material, when properly mixed and cured with its resin component at the proper mix ratio, may be safely land filled.

Contaminated packaging

Empty containers can only be disposed of when the remaining product adhering to the container walls has been removed. Hazard warning labels should be removed from the container only after it has been properly emptied.

14. TRANSPORT INFORMATION**Land/Air/Sea/Rail**

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, NOS (Dicyclohexylmethane Diisocyanate)

UN Number: UN-3082

Hazard Class: 9

Packing Group: III, Marine Pollutant

15. REGULATORY INFORMATION**U.S Regulations**

OSHA Hazcom Standard Rating:

Hazardous

Toxic Substances Control Act (TSCA) 12(b) Components:

None Known

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es):

Acute health hazard, Chronic health hazard.

EPA SARA Title III section 302 (40CFR370) Extremely Hazardous Substances:

None Known

EPA SARA Title III section 313 (40 CFR 372) Toxic Chemicals above "de minimus" levels:

Dicyclohexylmethane-4,4'-Diisocyanate (CAS# 5124-30-1)

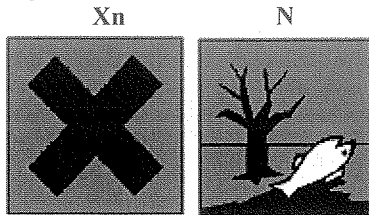
U.S. State Regulations

CAIFORNIA PROP 65: This product contains the following substance known to the State of California to cause cancer:

None Known

EEC MARKING AND LABELLING

Hazard symbol(s):



EU Labeling Classification: Xn-Harmful; N- Hazardous for the Environment

Risk Phrases: R20: Harmful by inhalation.
 R36/37/38: Irritating to the eyes, respiratory system and skin.
 R42/43: May cause sensitization by inhalation and skin contact.
 R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

EINECS Status: All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) in compliance with Council Directive 67/548/EEC and its amendments. CHIP3 Regulations have been applied and meets all requirements.

CANADIAN REGULATIONS

WHMIS Classification: D2A - respiratory tract sensitizer
 D2B - skin sensitizer
 D2B - eye or skin irritant

WHMIS Symbol(s):



Safety Phrases: S23: Do not breathe vapor/gas/fumes/spray
 S36/37: Wear suitable protective clothing and gloves.
 S45: In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible)

DSL: Components of this product have been reported to Environment Canada in accordance with subsection 25 of the Canadian Environmental Protection Act and are included on the Domestic Substances List.

16. OTHER INFORMATION

Abbreviations:

ACGIH: American Conference of Government Industrial Hygienists

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

LD50: Lethal Dose (50%)-The minimum dose required for lethal effects in 50% of a given population of test specimens.

LC50: Lethal Concentration (50%)- The minimum concentration required for lethal effects in 50% of a given population of test specimens

NIOSH: National Institute for Occupational Safety and Health

WHMIS: Workplace Hazardous Material Information System

DSL: Domestic Substances List

CAS: Chemical Abstracts Service

To the best of our knowledge, the information contained herein is accurate. Final determination of the suitability of any material is the sole responsibility of the users. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

PRODUCT NAME: TCC-5095B

CHEMICAL NAME: Aromatic Amine Blend

MANUFACTURER: CASS POLYMERS OF MICHIGAN, INC.
31200 STEPHENSON HWY
MADISON HEIGHTS MI 48071 USA

INFORMATION PHONE: (248) 588-2270

EMERGENCY PHONE: (703) 527-3887(Call Collect)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Materials Information System (United States)

| | |
|-----------------|----|
| Health | 2* |
| Flammability | 1 |
| Physical Hazard | 0 |

Hazard Codes: *=Chronic Hazard 0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Serious Hazard, 4=Severe Hazard

Material Composition

| Component | CAS.NO | EINECS/ELINCS No. | Percent |
|-------------------------|----------|----------------------|-----------|
| 4,4'methylenedianaline* | 101-77-9 | 202-974-4 | 40% - 45% |
| N-Methyl Pyrrolidone | 872-50-4 | 212-828-1 | 1% - 10% |
| DibutylPhthalate* | 87-74-2 | 201-557-4 | 45% - 55% |

* This Material Presents a Chronic Health Hazard. See section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION, and section 11-TOXICOLOGICAL INFORMATION for complete hazard/exposure limit information.

NOTE: Hazardous Materials are required to be listed if present in concentrations of 1.0% or higher. Materials posing a possible Chronic Health Risk are required to be listed at concentrations of 0.1% or higher. All materials listed in section 2 are not necessarily hazardous. See section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION, and section 11-TOXICOLOGICAL INFORMATION for further hazard/exposure limit information.

3. HAZARDS IDENTIFICATION

****Emergency Overview****

Toxic. May cause harm to the unborn child. Irritating to the eyes, respiratory system, and skin. Very toxic to aquatic organisms. Possible risk of impaired fertility. May Cause Cancer.

EC Classification(s): T-Toxic, N-Harmful to the Environment

Risk Phrase(s): R39/23/24/25: Toxic: danger of very serious irreversible effects through inhalation and in contact with skin and if swallowed

R43: May cause sensitization through skin contact

R45: May cause cancer

R48/20/21/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with the skin and if swallowed

R51/53: Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment

R50: Very toxic to aquatic organisms

R61: May cause harm to the unborn child

R62: Possible risk of impaired fertility

R68: Possible risk of irreversible health effects

(See Section 15-REGULATORY INFORMATION for complete risk phrases.)

ROUTES OF EXPOSURE

Eye Contact
Skin Contact
Ingestion
Inhalation

EXPOSURE STANDARDS

Exposure standards available for individual components only See section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION, and section 11-TOXICOLOGICAL INFORMATION for complete hazard/exposure limit information. Maintain air contaminant concentrations in the workplace at the lowest feasible levels.

IMMEDIATE HEALTH HAZARDS

Skin irritant.
Eye irritant.
Respiratory tract irritant.
May cause skin sensitization.

TARGET ORGANS ACUTE AND CHRONIC EFFECTS

Skin, Eyes, Kidneys, Liver, Lungs, Testes, Central Nervous System.

SIGNS AND SYMPTOMS OF EXPOSURE (Acute effects)

Contact with eyes may cause irritation and discomfort. Contact with skin causes irritation, redness and discomfort which is transient. Inhalation of mists may cause irritation in the respiratory tract. Inhalation of vapors may cause irritation in the respiratory tract. Coughing and chest pain may result.

CHRONIC EXPOSURE HAZARDS (Possible Longer Term Effects)

Repeated and/or prolonged exposure may cause allergic reaction/sensitization. Repeated and/or prolonged exposures may result in: Impaired fertility, birth defects, developmental abnormalities in the unborn child. This material contains substances known or anticipated to be human carcinogens.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Skin disorders, Respiratory Disorders and Allergies

CARCINOGENS UNDER OSHA, ACGIH, NTP, IARC, OTHER

This product contains **4,4'-methylenedianiline**

IARC: group 2B

OSHA: May Cause Cancer

NTP: Anticipated to be a carcinogen

Other chronic health risks exist with components of this product. See section 8 and section 11 for further information.

4. FIRST AID MEASURES

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Inhalation

Move effected persons to fresh air; if effects continue, consult a physician.

Skin Contact

Continued and thorough washing in flowing water for at least 15 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Destroy contaminated leather items.

Eye Contact

Wash immediately and continuously with flowing water for at least 15 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Ingestion

If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by a physician or medical personnel. Do not give anything by mouth to an unconscious person.

Note to Physician

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING PRECAUTIONS**Extinguishing Media**

Water fog or fine spray. Carbon dioxide. Alcohol resistant foam. Dry chemical fire extinguishers.

Hazardous Combustion Products

May generate toxic or irritating combustion products. Sudden reaction and fire may occur if product is mixed with an oxidizing agent.

Protection of Firefighters

Wear positive-pressure self-contained breathing apparatus and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves.)

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions**

Wear adequate personal protective equipment, see Section 8, EXPOSURE CONTROLS/PERSONAL PROTECTION.

Methods of Cleaning Up

Ventilate area and remove or turn off all sources of ignition.

Large spills: Contain with dike. Pump into suitable and properly labeled containers.

Small spills: Dilute with water and recover or use non-combustible absorbent material/sand and shovel into appropriate containers.

7. HANDLING AND STORAGE

STORAGE

Keep away from oxidizers. Keep in cool, dry, ventilated storage areas and in closed containers.

HANDLING

Avoid prolonged exposure. Do not get on skin, in eyes or on clothing. Do not breathe vapors. Handle in well-ventilated workspace. When handling, do not eat, drink, or smoke. After handling, wash exposed skin thoroughly before eating, drinking, smoking or using the toilet.

OTHER PRECAUTIONS

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (e.g. OSHA).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Hazardous Component Control Parameters –

| Component | CAS. No. | EINECS | Percent | Exposure Limits | Source |
|-------------------------|----------|-----------|-----------|---|---------------|
| 4,4'methylenedianiline* | 101-77-9 | 202-974-4 | 40% - 45% | 0.1 ppm TWA | ACGIH |
| DibutylPhthalate* | 87-74-2 | 201-557-4 | 45% - 55% | 5 mg/m ³ TWA 5 mg/m ³ 8 hr PEL | ACGIH OSHA |

-No Further Data Available-

EYE PROTECTION

Chemical safety glasses. A full-face shield and vapor respirator is recommended for operations involving spraying this material.

HAND PROTECTION

Neoprene rubber gloves. Impermeable gloves. Nitrile rubber gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period. The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as the instructions/specifications provided by the glove supplier.

RESPIRATORY PROTECTION

A cartridge mask National Institute for Occupational Safety and Health (NIOSH) approved for organic vapors is appropriate for use with this material. Maintain adequate workplace ventilation at levels below designated occupational guidelines.

PROTECTIVE CLOTHING

Long sleeved clothing. Impermeable (non-absorbant) work clothing.

ENGINEERING CONTROLS

No specific controls needed.

WORK AND HYGIENIC PRACTICES

Provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking or using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------------|--|
| Appearance : | Mobile Liquid |
| Color: | Amber |
| Odor: | Slight Aromatic Odor |
| Specific gravity : | 1.00 – 1.10 |
| Vapor pressure: | Not Determined |
| Boiling point/range : | Not Determined |
| Freezing point/range : | Not Determined |
| Water solubility : | Liquid Components Readily Soluble in Water |
| pH : | Not Determined |
| Flash point : | 340°F (171°C) |
| Auto-ignition temp. : | >300 deg.C |
| Flammability-LFL : | Not Determined |
| Flammability-UFL : | Not Determined |
| % volatile: | 0 g/L |

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

Stable

CONDITIONS TO AVOID (if unstable)

Not applicable

INCOMPATIBILITY (Materials to Avoid)

Oxidizing Agents (i.e. perchlorates, nitrates etc.). Sodium or Calcium Hypochlorite. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.

HAZARDOUS DECOMPOSITION PRODUCTS (from burning, heating, or reaction with other materials).

Carbon Monoxide in a fire. Carbon Dioxide in a fire. Irritating and toxic fumes at elevated temperatures.

HAZARDOUS POLYMERIZATION

Will not occur

CONDITIONS TO AVOID (if polymerization may occur)

Not applicable

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

This finished product has not been tested to determine individual toxicological/ecological limits. Individual components of this mixture have been independently tested by the raw material manufacturers and any known results have been presented below. The results for the individual components may not be representative of the toxicity of this finished product.

| Ingredient Name | CAS No. | % | Test | Result | Route | Species |
|--------------------------|----------|-----------|------|------------------------|------------------|---------|
| DibutylPhthalate* | 87-74-2 | 45% - 55% | LD50 | 8000mg/kg | Oral | Rat |
| | | | LC50 | 4250 mg/m ³ | Inhalation | Rat |
| | | | LD50 | 3050 µL/kg | Interaperitoneal | Rat |
| | | | LD50 | >20mL/kg | Dermal | Rabbit |
| 4,4'-methylenedianiline* | 101-77-9 | 40% - 45% | LD50 | 517mg/kg | Oral | Rat |
| | | | LC50 | 220 mg/kg | Dermal | Rabbit |

-No Further Data Available-

Ingestion

This material should be considered toxic by ingestion.

Skin Contact

Widespread skin contact is not likely to cause immediate toxic effects. Prolonged skin contact may cause impaired fertility or reproductive harm.

Acute Irritation**Skin**

Skin contact has caused allergic skin reactions in certain sensitized individuals.

Eyes

Irritation with local redness. Mechanical irritation possible due to solid filler materials.

Inhalation

May cause respiratory irritation upon exposure to vapors.

Chronic Exposure**Carcinogen**

This material contains **4,4'-methylenedianiline** (CAS# 101-77-9), a substance that is a known or suspected human carcinogen.

Mutagen

This material contains **DIBUTYL PHTHALATE** (CAS# 84-74-2), a substance that has caused DNA and other cell damage to human tissues in laboratory tests.

Reproductive Hazard

This material contains **DIBUTYL PHTHALATE** (CAS# 84-74-2), a substance that has caused reproductive problems and birth defects in laboratory animals.

12. ECOLOGICAL INFORMATION**Persistence/degradability**

This material contains components that show little or no evidence of biodegradability. Caution should be taken to prevent release to the environment. See Section 13 for disposal information.

Ecotoxicity Data:

| Chemical Name | CAS No. | % | Test | Concentration | Result | Species |
|-------------------------|----------|-----------|------|---------------|--------|----------------|
| 4,4'-Methylenedianiline | 101-77-9 | 40% - 45% | LC50 | 39 mg/L | 96 hr | Rainbow Trout |
| DIBUTYL PHTHALATE | 84-74-2 | 45% - 55% | LC50 | 0.92 mg/L | 96 hr | Fathead Minnow |
| | | | EC50 | 3.4 mg.L | 48 hr | Daphnid |

-No Further Data Available-

Individual components of this mixture have been independently tested by the raw material suppliers and any known results have been presented above. The results for the individual components may not be representative of the ecological toxicity of this finished product. This finished product has not been tested to determine individual toxicological/ecological limits. Caution should be taken to prevent release to the environment. See Section 13 for further information.

13. DISPOSAL CONSIDERATIONS

Disposal

The generation of waste should be avoided or minimized wherever possible. Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations. Untreated material is not suitable for disposal. Waste, even small quantities, should never be poured down drains, sewers or watercourses. Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Contaminated packaging

Empty containers can only be disposed of when the remaining product adhering to the container walls has been removed. Hazard warning labels should be removed from the container only after it has been properly emptied.

14. TRANSPORT INFORMATION

Land/Air/Sea/Rail

Proper Shipping Name: 4,4' Diaminodiphenylmethane
 UN Number: UN-2651
 Hazard Class: 6.1
 Packing Group: III, Marine Pollutant

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

TOXIC SUBSTANCES CONTROL ACT (TSCA)-

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

TOXIC SUBSTANCE CONTROL ACT (TSCA) 12(b) COMPONENT(S)

DIBUTYL PHTHALATE (CAS#84-74-8), 50 %
 4,4'-METHYLENEDIANILINE (CAS# 101-77-9), 40%

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es)

Irritant. Sensitizer. Possible Risk of Impaired Fertility. May Cause Cancer

EPA SARA Title III Section 312 (40CFR370) hazard class

Immediate Health Hazard. Delayed Health Hazard.

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are

DIBUTYL PHTHALATE (CAS#84-74-8), 50%
 4,4'-METHYLENEDIANILINE (CAS# 101-77-9), 40%

STATE REGULATIONS

PROPOSITION 65 SUBSTANCES (component(s) 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")

DIBUTYL PHTHALATE (CAS#84-74-8), 50% - Reproductive Hazard
 4,4'-METHYLENEDIANILINE (CAS# 101-77-9), 40% - Carcinogen

CANADIAN REGULATIONS

DSL

Included on Inventory.

WHMIS HAZARD CLASSIFICATION

D2B- Very Toxic Material Causing Other Toxic Effects

WHMIS INGREDIENT DISCLOSURE LIST

DIBUTYL PHTHALATE CAS#84-74-2, 50%
 4,4'-METHYLENEDIANILINE CAS# 101-77-9, 40%

WHMIS TRADE SECRET REGISTRY NUMBER(S)

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

None

WHMIS SYMBOL(S):

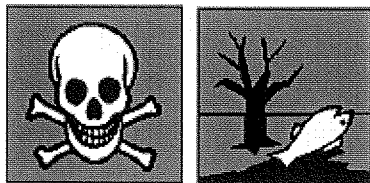


EUROPEAN ECONOMIC COMMUNITY (EEC)**EINECS Status:**

All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) in Compliance with Council Directive 67/548/EEC and its amendments. CHIP3 Regulations have been applied and meets all requirements

T

N



EU Labeling Classification: T-Toxic; N-Dangerous for the Environment

EU Category: Carc. Cat.2, Muta. Cat.3

Risk Phrases:

R39/23/24/25: Toxic: danger of very serious irreversible effects through inhalation and in contact with skin and if swallowed

R43: May cause sensitization through skin contact

R45: May cause cancer

R48/20/21/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with the skin and if swallowed

R51/53: Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment

R50: Very toxic to aquatic organisms

R61: May cause harm to the unborn child

R62: Possible risk of impaired fertility

R68: Possible risk of irreversible health effects

Safety Phrases:

S53: Avoid exposure - obtain special instructions before use.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S61: Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

Definitions:

ACGIH: American Conference of Government Industrial Hygienists

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

LD50: Lethal Dose (50%)-The minimum dose required for lethal effects in 50% of a given population of test specimens.

LC50: Lethal Concentration (50%)- The minimum concentration required for lethal effects in 50% of a given population of test specimens

NIOSH: National Institute for Occupational Safety and Health

WHMIS: Workplace Hazardous Material Information System

DSL: Domestic Substances List

To the best of our knowledge, the information contained herein is accurate. Final determination of the suitability of any material is the sole responsibility of the users. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.