# SAFETY DATA SHEET

## 1.0 IDENTIFICATION

**1.1 GHS product identifier:** TCC-6000A

**1.2 Other means of identification:** Cycloaliphatic Isocyanate Prepolymer

**1.3 Recommended use of the chemical and restrictions on use:** N/A

**1.4 Supplier's details:** CASS POLYMERS OF MICHIGAN, INC.
31200 STEPHENSON HWY
MADISON HEIGHTS MI 48071 USA
INFORMATION PHONE NUMBER: (248) 588-2270

**1.5 Emergency phone number:** (703) 527-3887(Call Collect)

## 2.0 HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture:**

Acute Toxicity – Inhalation 4, Skin Corrosion/Irritation 2, Eye Damage/Irritation 2B, Specific Target Organ Toxicity – Single Exposure 3, Skin Sensitizer 1, Respiratory Sensitizer 1

**2.2 GHS label elements:**

**Signal Word:** Warning
**Hazard Statement:** Harmful if inhaled
**Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.
**Response:** If inhaled: remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

**Signal Word:** Warning
**Hazard Statement:** Causes skin irritation
**Prevention:** Wash hands thoroughly after handling. Wear protective gloves.
**Response:** If on skin: wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention. Take off contaminated clothing and wash before reuse.

**Signal Word:** Warning
**Hazard Statement:** Causes eye irritation
**Prevention:** Flush eyes thoroughly after eye contact.
**Response:** If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical advice/attention.

**Signal Word:** Warning
**Hazard Statement:** May cause respiratory irritation
**Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.
**Response:** If inhaled: remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up.
**Disposal**: Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations.

**Signal Word:** Warning
**Hazard Statement:** May cause an allergic skin reaction
**Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.
**Response:** If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. 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 contaminated clothing before reuse.
**Disposal**: Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations.

**Signal Word:** Danger
**Hazard Statement:** May cause allergy or asthma symptoms or breathing difficulties if inhaled
**Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. In case of inadequate ventilation wear respiratory protection.
**Response:** If inhaled: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor/physician.
**Disposal**: Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations.

**2.3 Other hazards which do not result in classification:** Flammable Liquid

**2.4 Hazards Material Information System (United States):**

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

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

## 3.0 COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Mixtures**

| Chemical Identity | CAS No. | Concentration |
|---|---|---|
| Dicyclohexylmethane Diisocyanate | 5124-30-1 | 50% - 60% |
| Polyether Polyol | 9003-11-6 | 45% - 55% |

## 4.0 FIRST-AID MEASURES

**4.1 Description of necessary 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.

**4.2 Most Important symptoms/effects, acute and delayed:**

**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.

**4.3 Indication of immediate medical attention and special treatment needed, if necessary:** N/A

## 5.0 FIRE-FIGHTING MEASURES

**5.1 Suitable extinguishing media:** Water fog or fine spray. Carbon dioxide. Alcohol resistant foam. Dry chemical fire extinguishers.

**5.2 Specific hazards arising from the chemical:** Flash Point: 392ºF; 200ºC. 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.

**5.3 Special protective actions for fire-fighters:** 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.

## 6.0 ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Wear adequate personal protective equipment, see Section 8, EXPOSURE CONTROLS/PERSONAL PROTECTION.

**6.2 Methods and materials for containment and clean 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.

## 7.0 HANDLING AND STORAGE

**7.1 Precautions for safe 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.

**7.2 Conditions for safe storage, including any incompatibilities:** 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 10ºC and 27ºC for maximum shelf life.

## 8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters**

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

**8.2 Appropriate 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.

**8.3 Individual protection measures, such as 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.

## 9.0 PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Appearance (physical state, color, etc.):** Viscous Liquid, Water-Clear

**9.2 Odor:** None- Any detectable odor indicates overexposure to isocyanate vapors due to exceeded PEL.

**9.3 Odor threshold:** N/A

**9.4 pH:** Not Determined

**9.5 Melting point/freezing point:** Not Determined

**9.6 Initial boiling point and boiling range:** Not Determined

**9.7 Flash Point:** 392ºF; 200ºC

**9.8 Evaporation rate:** N/A

**9.9 Flammability (solid, gas):** N/A

**9.10 Upper/lower flammability or explosive limits:** LFL-Not Determined; UFL-Not Determined

**9.11 Vapor pressure:** Not Determined

**9.12 Vapor Density:** N/A

**9.13 Relative density (Specific Gravity):** 1.00 – 1.10

**9.14 Solubility(ies):** Slightly Soluble in Water

**9.15 Partition coefficient; n-octanol/water:** N/A

**9.16 Auto-ignition temperature:** N/A

**9.17 Decomposition temperature:** N/A

**9.18 Viscosity:** N/A

## 10.0 STABILITY AND REACTIVITY

**10.1 Reactivity:** N/A

**10.2 Chemical stability:** Stable under normal handling and storage conditions, see Section 7,Handling and Storage.

**10.3 Possibility of hazardous reactions:** N/A

**10.4 Conditions to avoid:** N/A

**10.5 Incompatible materials:** Avoid water, amines, strong bases, alcohols, copper alloys, aluminum or temperatures above 350ºF (177ºC) In combination with isocyanates, these materials will result in a temperature and/or pressure increase or polymerization.

**10.6 Hazardous decomposition products:** N/A

## 11.0 TOXICOLOGICAL INFORMATION

**11.1 Likely routes of exposure:** N/A

**11.2 Symptoms related to the physical, chemical and toxicological characteristics:** N/A

**11.3 Delayed and immediate effects and also chronic effects from short and long term exposure:**

**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%.

**11.4 Numerical measures of 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 Diisocyanate | 5124-30-1 | 35% - 45% | LD50<br>LD50 | >11,000 mg/kg<br>434 mg/m3 | Oral<br>Inhalation | Rat<br>Rat |

## 12.0 ECOLOGICAL INFORMATION

**12.1 Ecotoxicity:**

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

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.

**12.2 Persistence and 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.

**12.3 Bioaccumulative potential:** N/A

**12.4 Mobility in soil:** N/A

**12.5 Other adverse effects:** N/A

## 13.0 DISPOSAL CONSIDERATIONS

**13.1 Disposal methods:** 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 landfilled. 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.

## 14.0 TRANSPORT INFORMATION

**14.1 UN number:** UN-3082

**14.2 UN proper shipping name:** Environmentally Hazardous Substance, Liquid, NOS (Dicyclohexylmethane Diisocyanate)

**14.3 Transport hazard class(es):** 9

**14.4 Packing group, if applicable:** III, Marine Pollutant

**14.5 Environmental hazards:** Marine Pollutant

**14.6 Transport in bulk:** N/A

**14.7 Special precautions for user:** N/A

## 15.0 REGULATORY INFORMATION

**15.1 Safety, health and environmental 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)

**CALIFORNIA PROPOSITION 65**: SUBSTANCES (component (s) know to the State of California to cause cancer and/or reproductive and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986") **None**

**CANADA REGULATIONS**

**WHMIS TRADE SECRET REGISTRY NUMBER(S).** NONE

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR. **None**

**WHMIS Classification:** D2A - respiratory tract sensitizer, D2B - skin sensitizer

**WHMIS Symbol(s):**

**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.

## 16.0 OTHER INFORMATION

**16.1 Date of Preparation:** 10/07/2011

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.