

Safety Data Sheet



PetraThane CRU-T – PART A

1. IDENTIFICATION

| 24 HOUR EMERGENCY ASSISTANCE | MANUFACTURER/GENERAL MSDS ASSISTANCE |
|------------------------------|---|
| CHEM-TEL 1-800-255-3924 | Petra Polymers Tel.: (888)-497-3872 1610 E. Miraloma Ave. Placentia, CA 92870 |

PRODUCT IDENTIFIER/NAME: PetraThane CRU-T – PART A

RECOMMENDED USE: Chemical intermediate for polyurethane

2. HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

Acute Oral Toxicity Category 4
Acute Dermal Toxicity Category 4
Acute Vapors Toxicity Category 5
Skin Irritation Category 3
Eye Irritation Category 2
Skin Sensitizer Category 1
Respiratory Sensitizer Category 1
TOST: Single Exposure Category 2
TOST: Repeated Exposure Category 2

NFPA ratings (scale 0 – 4):

| | |
|-------------------|----------|
| HEALTH | 2 |
| FIRE | 1 |
| REACTIVITY | 1 |
| SPECIAL | - |

NFPA HAZARD RATING:

4= EXTREME 2= MODERATE 0= INSIGNIFICANT
3= HIGH 1= SLIGHT



HAZARD PICTOGRAMS:

SIGNAL WORD: Warning

PHYSICAL APPEARANCE: Milky clear liquid with slight odor

HAZARD STATEMENTS:

WARNING!

May cause eye, skin, and respiratory tract irritation. Closed container *may* forcibly rupture under extreme heat. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling solvents may be harmful or fatal. May cause kidney damage. May cause liver damage. May cause blood disorder.

POTENTIAL HEALTH EFFECTS:

PRIMARY ROUTES OF ENTRY: Skin Contact, Eye Contact, Ingestion, Inhalation

MEDICAL CONDITIONS AGGRAVATED BY: Skin disorders, Eczema, Asthma, Respiratory disorders, Eye disorders. Allergies.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

ACUTE INHALATION:

Aliphatic Polyisocyanate: Diisocyanate or polyisocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyper reactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

CHRONIC INHALATION:

Aliphatic Polyisocyanate: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates or polyisocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. 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. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

ACUTE SKIN:

Aliphatic Polyisocyanate: Causes irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

CHRONIC SKIN:

Aliphatic Polyisocyanate: Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

ACUTE EYE:

Aliphatic Polyisocyanate: Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.

CHRONIC EYE:

Aliphatic Polyisocyanate: Prolonged vapor contact may cause conjunctivitis.

ACUTE INGESTION:

Aliphatic Polyisocyanate: May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Carcinogenicity: No Carcinogenic substances as defined by IARC, NTP and/or OSHA

PRECAUTIONARY STATEMENTS: Do not breathe dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. IF SWALLOWED: Get immediate medical advice/attention. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| | | |
|--|------------------|---------|
| <i>Homopolymer of Hexamethylene Diisocyanate</i> | (CAS 28182-81-2) | >60 % |
| <i>Hexamethylene-1,6-Diisocyanate</i> | (CAS 822-06-0) | <= 0.3% |

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not Hazardous per this OSHA Standard may be listed. Where proprietary Ingredient shows, the identity may be made available as provided in this standard.

4. FIRST AID MEASURES

EYE: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Call a physician immediately.

SKIN: In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention if irritation develops.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration, If breathing is difficult, give oxygen. Get medical attention.

INGESTION: Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention. Do not give anything by mouth to an unconscious person. Get medical attention.

NOTES TO PHYSICIAN: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic / steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, carbon dioxide (CO₂), water spray for large fires, **SPECIAL FIRE FIGHTING PROCEDURES:** Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize risk of rupture.

UNUSUAL FIRE PRECAUTIONS: Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO₂ formed). 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 reaction between water and hot diisocyanate can be vigorous.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PRECAUTIONS: Evacuate non-emergency personnel. Isolate the area and prevent access. Remove ignition sources. Notify management. Put on protective equipment. Control source of the leak. Ventilate. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Call Bayer at 412-923-1800 for assistance and advice. Major Spill or Leak (Standing liquid): To minimize vapor, cover the spillage with fire fighting foam (AFFF). Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Minor Spill or Leak (Wet surface): Cover spill area with suitable absorbent material (Kitty Litter, Oil-Dri®, etc). Saturate absorbent

material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Swype® test kits have been used for this purpose. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO₂) escape.

NEUTRALIZATION SOLUTIONS:

- (1) Colorimetric Laboratories Inc. (CLI) decontamination solution.
- (2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10) and 5% npropanol.
- (3) A mixture of 80% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10).
- (4) A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.

Petra Polymers requires that CHEMTREC be immediately notified (800-424-9300) when this product is unintentionally released from its container during its course of distribution, regardless of the amount released. Distribution includes transportation, storage incidental to transportation, loading and unloading. Such notification must be immediate and made by the person having knowledge of the release.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE:

Minimum: -34 °C (-29.2 °F)

Maximum: 50°C (122 °F) Storage Period

STORAGE PERIOD: 6 Months at 3.89 °C (25 °F): after receipt of material by customer

HANDLING AND STORAGE PRECAUTIONS: Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

FURTHER INFORMATION ON STORAGE INFORMATION: Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard. 29 CFR 1910.1200.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

| | | |
|---|----------------------------------|--------------------------------|
| Homopolymer of Hexamethylene Diisocyanate | Time Weighted Average (TWA) | 0.5 mg/m ³ |
| | Short Term Exposure Limit (STEL) | 1.0 mg/m ³ (15-min) |
| Hexamethylene-1,6-Diisocyanate | Time Weighted Average (TWA) | 0.005 ppm |
| | Ceiling Limit Value | 0.02 ppm |

INDUSTRIAL AND VENTILATION MEASURES: Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e. they are released into the work area), it is possible to be exposed to airborne monomeric HDI.

RESPIRATORY PROTECTION: A respirator that is recommended or approved for use in isocyanate-containing environments (air-purifying or fresh air-supplied) may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures. A supplied-air respirator (either positive pressure or continuous flow-type) is recommended. Before an air-purifying

respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI monomer and HDI polyisocyanate. Specific conditions under which air-purifying respirators can be used are outlined in the following sections. Observe OSHA regulations for respirator use (29 CFR 1910.134).

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 coatings containing this product the use of a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exist: -the airborne isocyanate concentrations are not known; or -the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or -the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or -operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -The airborne isocyanate monomer concentrations are known to be below 0.05 ppm averaged over eight (8) hours (10 times 8 hour TWA exposure limit); and -the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.

NON-SPRAY OPERATIONS: A. During non-spray operations such as mixing, batch-making, brush or roller application, etc., at elevated temperatures (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system will be applied in a non-spray manner, a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exist: the airborne isocyanate concentrations are not known; or - the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or - the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or ; operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -the airborne concentrations of the isocyanate monomer are below 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); and - the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m³ averaged over eight (8) hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.

HAND PROTECTION: Gloves should be worn., Nitrile rubber gloves., Butyl rubber gloves., Neoprene gloves

EYE PROTECTION: When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

SKIN PROTECTION: Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Gloves, long sleeved shirts and pants.

MEDICAL SURVEILLANCE: All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted. Refer to the Bayer pamphlet (Medical Surveillance Program for Isocyanate Workers) for additional guidance.

ADDITIONAL PROTECTIVE MEASURES: Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Liquid

COLOR: Colorless to light yellow

ODOR: Slight

pH: Not established

BOILING POINT: Not Applicable, Decomposition

FLASH POINT: > 193 °C (> 379.4 °F)

VAPOR PRESSURE: HDI Polyisocyanate: 5.2×10^{-9} @ 20 °C (68 °F) mmHg

DENSITY: 1.15 @ 20 °C (68 °F)

SOLUBILITY IN WATER: Insoluble – Reacts slowly with water to liberate CO₂ gas

AUTO-IGNITION TEMPERATURE: Approximately 435 °C (815 °F)

VISCOSITY, DYNAMIC: Approximately 726 mPa.s @ 23 °C (73.4 °F)

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions of use and storage.

MATERIALS TO AVOID: Water, Amines, Strong bases, Alcohols, copper alloys.

CONDITIONS TO AVOID: None known

BY FIRE AND THERMAL DECOMPOSITION: Carbon oxides, nitrogen oxides (NO_x), hydrogen cyanide, Isocyanic acid, other aliphatic fragments which have not been determined.

HAZARDOUS REACTIONS: Contact with moisture, other materials that react with isocyanates, or temperatures above 350 °F (177 °C), may cause polymerization.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY: LD₅₀: > 5,000 mg/kg (Rat)

ACUTE INHALATION TOXICITY: LC₅₀: 390-453 mg/m³, aerosol, 4 hr (Rat, Male/Female)
RD₅₀: 20.8 mg/m³, 3 hrs.

ACUTE DERMAL TOXICITY: LD₅₀: > 5,000 mg/kg (rabbit)

SKIN IRRITATION: Rabbit, Draize, Slightly irritating

EYE IRRITATION: Rabbit, Draize, Slightly irritating

SENSITIZATION:

Dermal: Sensitizer (guinea pig, Maximisation Test (GPMT))

Dermal: Non-sensitizer (Guinea pig, Buehler)

Inhalation: Non-sensitizer (guinea pig)

REPEATED DOSE TOXICITY:

3 wks, inhalation: NOAEL: 3.7 - 4.3 mg/m³, (Rat)

90 ds, inhalation: NOAEL: 3:3 3.4 mg/m³, (Rat)

Irritation to lungs and nasal cavity.

MUTAGENICITY:

Ames: Negative (Salmonella typhimurium, Metabolic Activation: with/without)

12. ECOLOGICAL INFORMATION

ECOLOGICAL DATA FOR HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE

BIODEGRADATION: 0 %, Exposure time: 28 Days, Not readily biodegradable.

ACUTE AND PROLONG TOXICITY TO FISH: LCD: > 100 mg/l (Zebra fish (Brachydanio rerio), 96 hrs)

ACUTE AND PROLONG TOXICITY TO INVERTEBRATES: EC₀: > 100 mg/l (Water flea (Daphnia magna), 48 hrs)

TOXICITY TO PLANTS: EC₅₀: > 1,000 mg/l, (Green algae (Scenedesmus subspicatus), 72 hrs)

TOXICITY TO MICROORGANISMS: EC₅₀: > 1,000 mg/l, (Activated sludge microorganisms, 3 hrs)

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

EMPTY CONTAINER PRECAUTIONS: Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

14. TRANSPORT INFORMATION

Transportation Emergency Number: 1-800-255-3924 CHEM-TEL.

Proper Shipping Name: Other regulated substances, liquid, n.o.s. (Hexamethylene-1,6-Diisocyanate)

Hazard Class or Division: 9

UN/NA Number: NA3082

Packaging Group: III

Hazard Label(s): Class 9 Hexamethylene-1,6-Diisocyanate

Reportable Quantity: 33,333 lb

ADDITIONAL TRANSPORTATION INFORMATION: When in individual containers of less than the Product RQ, this material ships as non-regulated.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA HAZCOM STANDARD RATING: None

U.S. TOXIC SUBSTANCE CONTROL ACT: Listed on the TSCA Inventory.

U.S. EPA CERCLA HAZARDOUS SUBSTANCES (40 CELT 302) SARA SECTION 311/312 HAZARD CATEGORIES: Fire Hazard, Acute Health Hazard,

U.S. EPA EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (EPCRA) SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE (40 CFR 355, APPENDIX A): None

U.S. EPA EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (EPCRA) SARA TITLE III SECTION 313 TOXIC CHEMICALS (40 CFR 372.65)- SUPPLIER NOTIFICATION REQUIRED: None

U.S. EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) COMPOSITE LIST OF HAZARDOUS WASTES AND APPENDIX VIII HAZARDOUS CONSTITUENTS (40 CFR 261): 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)

STATE RIGHT-TO-KNOW INFORMATION: The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

MASSACHUSETT, NEW JERSEY, AND PENNSYLVANIA RIGHT TO KNOW ACT:

| Weight % | Components | CAS-No. |
|----------|------------------------------|------------|
| >75 % | Homopolymer of Hexamethylene | 28182-81-2 |

NEW JERSEY ENVIRONMENTAL HAZARDOUS SUBSTANCES LIST AND/OR NEW JERSEY RTK SPECIAL HAZARDOUS SUBSTANCE LISTS:

| Weight % | Components | CAS-No. |
|-----------------|--------------------------------|----------------|
| <=0.3% | Hexamethylene-1,6-Diisocyanate | 822-06-0 |

CALIFORNIA PROP 65: To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

Date Revised: 05/06/2015

MANUFACTURER'S NAME AND ADDRESS:

**Petra Polymers
1610 E. Miraloma Ave.
Placentia, CA 92870
Telephone: 714-572-6723**

The information herein is given in good faith, but no warranty expressed or implied is made. Petra Polymers urges users of this product to evaluate its suitability and compliance with local regulations as Petra Polymers cannot foresee the nature of the final application or final location of usage.

Safety Data Sheet



PetraThane CRU-T – PART B

1. IDENTIFICATION

| 24 HOUR EMERGENCY ASSISTANCE | MANUFACTURER/GENERAL MSDS ASSISTANCE |
|------------------------------|---|
| CHEM-TEL 1-800-255-3924 | Petra Polymers Tel.: (888)-497-3872 1610 E. Miraloma Ave. Placentia, CA 92870 |

PRODUCT IDENTIFIER/NAME: PetraThane CRU-T – PART B

RECOMMENDED USE: Chemical intermediate for polyurethane

2. HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

Acute Oral Toxicity Category 4
Acute Dermal Toxicity Category 4
Acute Vapors Toxicity Category 5
Skin Irritation Category 2
Eye Irritation Category 2
Skin Sensitizer Category 1
Respiratory Sensitizer Category 1
TOST: Single Exposure Category 2
TOST: Repeated Exposure Category 2

NFPA ratings (scale 0 – 4):

| | |
|-------------------|----------|
| HEALTH | 1 |
| FIRE | 3 |
| REACTIVITY | 0 |
| SPECIAL | - |

NFPA HAZARD RATING:

4= EXTREME 2= MODERATE 0= INSIGNIFICANT
3= HIGH 1= SLIGHT



HAZARD PICTOGRAMS:

SIGNAL WORD: Danger!

PHYSICAL APPEARANCE: Clear liquid with solvent odor

HAZARD STATEMENTS:

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE DERMATITIS AND BURNS.

POTENTIAL HEALTH EFFECTS:

PRIMARY ROUTES OF ENTRY: Skin Contact, Eye Contact, Ingestion, Inhalation

MEDICAL CONDITINOS AGGRAVATED BY: Skin disorders, Eczrma, Asthma, Respiratory disorders, Eye disorders. Allergies.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

EYE: Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

SKIN: Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

INGESTION: Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

INHALATION: Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

AGGRAVATED MEDICAL CONDITION: Skin, Upper respiratory tract, lung (for example, asthma-like conditions).

SYMPTOM: Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Cough, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), loss of appetite, visual disturbances, chest pain, difficulty in breathing

TARGET ORGAN: Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:., nasal damage, kidney damage, liver damage

PRECAUTIONARY STATEMENTS: Do not breathe dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood. Keep away from open flames and hot surfaces. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. IF SWALLOWED: Get immediate medical advice/attention. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| | | |
|---|---------------|----------|
| <i>PARACHLOROBENZOTRIFLUORIDE (PCBTF)</i> | (CAS 98-56-6) | >50-<60% |
| <i>METHYL ACETATE</i> | (CAS 79-20-9) | >50-<60% |

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4. FIRST AID MEASURES

EYE: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Call a physician immediately.

SKIN: Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration, If breathing is difficult, give oxygen. Get medical attention.

INGESTION: Seek medical attention. If individual is drowsy or unconscious, do not give anything by

mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, carbon dioxide (CO₂), water spray for large fires,
PRECAUTIONS FOR FIRE FIGHTING: Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Water may be ineffective for extinguishment unless used under favorable conditions by experienced fire fighters. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Ensure adequate ventilation. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind.

ENVIRONMENTAL PRECAUTIONS: Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

METHODS FOR CLEANING UP: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

HANDLING: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

STORAGE: Store in a cool, dry, ventilated area, away from incompatible substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

METHYL ACETATE CAS 79-20-9

ACGIH time weighted average: 200 ppm
ACGIH Short term exposure limit: 250 ppm
NIOSH Recommended exposure limit (REL): 200 ppm
NIOSH Recommended exposure limit (REL): 610 mg/m³
NIOSH Short term exposure limit 250 ppm
NIOSH Short term exposure limit 760 mg/m³
OSHA Z1 Permissible exposure limit 200 ppm
OSHA Z1 Permissible exposure limit 610 mg/m³

EXPOSURE CONTROLS: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

EYE PROTECTION: Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

SKIN AND BODY PROTECTION: Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

Wear resistant gloves (consult your safety equipment supplier).

Discard gloves that show tears, pinholes, or signs of wear.

RESPIRATORY PROTECTION: Approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air purifying respirator may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Liquid

COLOR: Colorless to light yellow

ODOR: Slight

pH: Not established

BOILING POINT: No data

FLASH POINT: 14.00 °F / -10.00 °C Closed Cup

VAPOR PRESSURE: HDI Polyisocyanate: 5.2 X 10⁻⁹ @ 20 °C (68 °F) mmHg

DENSITY: 1.132 g/cm³ @ 68 °F / 20 °C

SOLUBILITY IN WATER: Insoluble – Reacts slowly with water to liberate CO₂ gas.

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions of use and storage.

CONDITIONS TO AVOID: Heat, flames and sparks.

HAZARDOUS DECOMPOSITION PRODUCTS: By Fire and Thermal Decomposition: Carbon oxides, nitrogen oxides (NO_x).

HAZARDOUS REACTIONS: Contact with moisture, other materials that react with isocyanates, or temperatures above 350 °F (177 C), may cause polymerization.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY: *PARACHLOROBENZOTRIFLUORIDE* (PCBTF): LD 50 Rat: > 6.8 g/kg
METHYL ACETATE: LD 50 Rat: > 5 g/kg
LD 50 Rabbit: 3,700 mg/kg

ACUTE INHALATION TOXICITY: *PARACHLOROBENZOTRIFLUORIDE*(PCBTF): LC 50 Rat: 4479 ppm;

ACUTE DERMAL TOXICITY: *PARACHLOROBENZOTRIFLUORIDE* (PCBTF) : LD 50 Rabbit: (>) 2.7 g/kg

METHYL ACETATE : LD 50 Rabbit: > 5 g/kg

12. ECOLOGICAL INFORMATION

No Data Available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

EMPTY CONTAINER PRECAUTION: Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

14. TRANSPORT INFORMATION

REGULATION

ID NUMBER PROPER SHIPPING NAME *HAZARD CLASS SUBSIDIARY HAZARDS PACKING
GROUP MARINE POLLUTANT / LTD. QTY.

Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

15. REGULATORY INFORMATION

U.S FEDERAL REGULATIONS

OSHA HAZCOM STANDARD RATING: None

US TOXIC SUBSTANCE CONTROL ACT: Listed on the TSCA Inventory.

SARA SECTION 3111312 HAZARD CATEGORIES: Fire Hazard, Acute Health Hazard,

SUPERFUND AMENDMENTS and REAUTHORIZATION ACT of 1986 (SARA) TITLE III

Section 302: Extremely Hazardous Substance (40 CFR 355,)

U.S. EPA EMERGENCY PLANNING AND COMMUNITY ACT (EPCRA) SARA TITLE III

Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification

U.S. EPA RESOURCE AND CONSERVATION ACT (RCRA) COMPOSITE LIST OF HAZARDOUS WASTES AND APPENDIX VIII HAZARDOUS CONSTITUENTS (40 CFR 261): 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)

STATE RIGHT TO KNOW INFORMATION: The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

16. OTHER INFORMATION

Date Revised: 05/06/2015

MANUFACTURER'S NAME AND ADDRESS:

Petra Polymers

1610 E. Miraloma Ave.

Placentia, CA 92870

Telephone: 714-572-6723

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