

Safety Data Sheet



PetraThane CRU S – 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 S – 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 2
Eye Irritation Category 2
Skin Sensitizer Category 1
Respiratory Sensitizer Category 1
TOST: Single Exposure Category 2
TOST: Repeated Exposure Category 2
Aspiration Toxicity Category 2

NFPA ratings (scale 0 – 4):

HEALTH	2
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: Milky clear or colored liquid with aromatic odor

HAZARD STATEMENTS:

WARNING! Flammable. May cause eye, skin, and respiratory tract irritation. Also harmful by inhalation and if swallowed. Vapors may travel to areas away from worksite before igniting/flashing back to vapor source. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Closed container may forcibly rupture under extreme heat. Toxic fumes are produced during a fire situation when product is combined with phosphorus-containing material. 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 affect nervous system.

POTENTIAL HEALTH EFFECTS

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

MEDICAL CONDITIONS AGGRAVATED BY: Skin disorders, Respiratory disorders, Eye disorders, Allergies

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

ACUTE INHALATION: Solvent vapors are irritating to the eyes, nose, throat and respiratory tract resulting in red, itchy eyes, dryness of the throat and tightness in the chest. Other possible symptoms of overexposure include headache, nausea, narcosis, fatigue and loss of appetite.

CHRONIC INHALATION: Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability, and loss of coordination.

ACUTE SKIN: Repeated or prolonged skin contact with the solvent can result in dry, defatted and cracked skin causing increased susceptibility to infection. In addition, dermatitis and skin rash and redness may occur from skin contact. Solvents may penetrate the skin causing effects similar to those identified under acute inhalation symptoms.

CHRONIC SKIN: Chronic skin exposure to the solvent may cause effects similar to those identified under chronic inhalation effects.

ACUTE EYE: Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

CHRONIC EYE: Prolonged vapor contact may cause conjunctivitis.

INGESTION: Can result in irritation in the digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Vomiting may cause aspiration of solvent resulting in chemical pneumonitis.

INGESTION: Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage.

Carcinogenicity: This product is not listed by NTP, IARC or regulated as a carcinogen by 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. 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>Propylene Glycol Monomethyl Ether Acetate</i>	(CAS 108-65-6)	> 45%
<i>Benzene, 1-Chloro-4-(trifluoromethyl)-</i>	(CAS 98-56-6)	10-25%
<i>Proprietary Ingredients</i>	T.S.	10-25%
<i>Methyl Acetate</i>	(CAS 79-20-9)	10-25%

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: If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

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 symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

INGESTION: Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

NOTES TO PHYSICIAN: This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 2 - Swallowing) when deciding whether to induce vomiting.

5. FIRE-FIGHTING MEASURES

Flash Point: 122.0° F (50.0° C) Setaflash (ASTM D-3243, D-3278, D-3828)

Flammable Limits:

Upper Explosive Limit (UEL) (%): 13.1% @ 283° F PMA

Lower Explosive Limit (LEL) (%): 1.3% @ 173° F PMA

Extinguishing Media: All extinguishing media are suitable.

HAZARDOUS DECOMPOSITION PRODUCT: May form: carbon dioxide and carbon monoxide, chlorine compounds, fluoride compounds, various hydrocarbons

PRECAUTION 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. If this polyol is combined with phosphorus compounds, trimethylolpropanesphosphate (TMPP), a known neurotoxin, can be given off in the event of a fire. Therefore, we do not recommend mixing this polyol with phosphorus compounds. 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).

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Cleanup personnel must use appropriate personal protective equipment. Remove all sources of ignition, including flames, heat and sparks. Dike or dam spilled material and control further spillage, if possible. Do not allow spilled material or wash water to enter sewers, surface waters, or groundwater systems. Cover spill with inert material (e.g., dry sand or earth) and collect for proper disposal. Wash spill area with soap and water.

7. HANDLING AND STORAGE

Storage Temperature (Min/Max): 32°F (0°C)/122°F (50°C)

Shelf Life: 12 months at 77°F (25°C) in closed original container.

Handling/Storage Precautions: Keep away from heat, sparks and open flames. Ground and bond containers and equipment before transferring to avoid static sparks. Do not breathe vapors or spray mist. Avoid contact with eyes. Avoid contact with skin or clothing. Use only with adequate ventilation/personal protection. Wash thoroughly after handling. Keep container closed when not in use.

Waste Disposal Method:

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Empty Container Precautions:

Do not heat or cut container with electric or gas torch. Recondition or dispose of empty container in

accordance with governmental regulations. Do not reuse empty container without proper cleaning. Label precautions also apply to this container when empty.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL ADVICE: These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

EXPOSURE CONTROLS: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

EYE PROTECTION: Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

SKIN AND BODY PROTECTION: Wear resistant gloves (consult your safety equipment supplier).

RESPIRATORY PROTECTION: If needed, use a NIOSH-approved respirator suitable for the potential exposure level.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Liquid

COLOR: Cloudy, Light yellow

ODOR: Aromatic odor

pH: Not established

BOILING POINT: Approximately 139.30 °C / 282.7 °F

FLASH POINT: 122 °F / 50 °C, setaflash

VAPOR PRESSURE: 3.7 mm hg @ 68 °F / 20 °C

SOLUBILITY IN WATER: Negligible

AUTO-IGNITION TEMPERATURE: No data

% Volatile by Volume: ~29%

10. STABILITY AND REACTIVITY

Stability: This is a stable material.

Hazardous Polymerization: Will not occur.

Incompatibilities: Heat, flames and sparks.

Instability Conditions: None determined.

Decomposition Products: By fire and thermal decomposition: CO, CO₂, oxides of nitrogen

(Ox), dense black smoke, other undetermined compounds

11. TOXICOLOGICAL INFORMATION

No Data Available

12. ECOLOGICAL INFORMATION

ECOLOGICAL DATA FOR PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE

BIODEGRADATION: Aerobic, 100 %, Exposure time: 8 days

ACUTE AND PROLONGED TOXICITY TO FISH: LC50: 11 mg/l (Fathead minnow (Pimephales promelas), 96 hrs.)

ACUTE TOXICITY TO INTERVERTEBRATES: EC50: 408 mg/l (Water flea (Daphnia magna), 48 hrs)

13. DISPOSAL CONSIDERATIONS

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

EMPTY CONTAINER PRECAUTION: Recondition or dispose of empty container in accordance with

governmental regulations. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

14. TRANSPORT INFORMATION

LAND TRANSPORT (DOT)

PROPER SHIPPING NAME: Resin solution (contains Propylene Glycol Monomethyl Ether Acetate)

HAZARD CLASS OR DIVISION NUMBER: 3

UN/NA NUMBER: UN1866

PACKAGING GROUP: PG III

HAZARD LABEL(S): Flammable Liquid

HAZARD PLACARD (S): Flammable Liquid

SEA TRANSPORT (IMO/ IMDG CODE) (OCEAN)

PROPER SHIPPING NAME: Resin solution (contains Propylene Glycol Monomethyl Ether Acetate)

HAZARD CLASS OR DIVISION NUMBER: 3

UN/NA NUMBER: UN1866

PACKAGING GROUP: III

HAZARD LABEL(S): Flammable Liquid

HAZARD PLACARD (S): Flammable Liquid

AIR (ICAO/ IATA)

PROPER SHIPPING NAME: Resin solution (contains Propylene Glycol Monomethyl Ether Acetate)

HAZARD CLASS OR DIVISION NUMBER: 3

UN/NA NUMBER: UN1866

PACKAGING GROUP: III

HAZARD LABEL(S): Flammable Liquid

HAZARD PLACARD (S): Flammable Liquid

Dangerous goods descriptions (if indicated above) may not reflect package size, quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA HAZCOM STANDARD RATING: This product is hazardous under the criteria of the Federal OSHA Hazard communication Standard 29 (CFR 1910.1200).

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

SARA SECTION 3111/ 312 HAZARD CATEGORIES: Acute Health Hazard

CERCLA REPORTED QUANTITY: None Reported

SARA Title III:
Section 302

Act

US EPA Emergency Planning and Community Right-To Know
(EPCRA) Extremely hazardous Substance (40 CFR 355,
Appendix A) Components: None

Section 311/312 Categories: Acute Health Hazard, Chronic Health Hazard, Fire Hazard

Section 313 Toxic Categories: None

RCRA Status: When discarded in its purchased form, this product meets the criteria of ignitability, and should be managed as a hazardous waste (EPA Hazardous Waste Number D001). (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.

Massachusetts, New Jersey or Pennsylvania Right-To-Know Substance Lists:

COMPONENT NAME	WEIGHT	CAS-NO.
Propylene Glycol Monomethyl Ether Acetate	25-50%	108-65-6
Polyester Polyol	>=1%	67815-82-1
Benzene, 1-Chloro-4-(trifluoromethyl)-	10-25%	98-56-6

WARNING: Prop 65

This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

CAS #	Chemical Name	%
95-63-6	Trimethylbenzene	Trace

16. OTHER INFORMATION

Date Revised: 05/06/2015

MANUFACTURER'S NAME AND ADDRESS:

Petra Polymers
1610 E. Miraloma Ave.
Placentia, CA 92870
Telephone: 888-497-3872

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 S – 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 S – 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
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	3
REACTIVITY	1
SPECIAL	-

NFPA HAZARD RATING:

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



HAZARD PICTOGRAMS:

SIGNAL WORD: Danger!

PHYSICAL APPEARANCE: Clear colorless liquid with aromatic odor

HAZARD STATEMENTS:

Danger: High inhalation hazard – allergic sensitizer. Severe skin irritant; allergic sensitizer. Severe Eye

irritant. Moderate ingestion hazard. Irritating to gastrointestinal tract. Mucous membrane irritant. Prolonged exposure may cause allergic sensitization. Prolonged or repeated exposure to vapors may cause lung damage.

POTENTIAL HEALTH EFFECTS

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

MEDICAL CONDITIONS AGGRAVATED BY: Skin disorders, Respiratory disorders, Eye disorders, Allergies

Signs and Symptoms of Acute Exposure: High Health Hazard.

Hexane, 1,6-diisocyanato- High inhalation hazard – allergic sensitizer. Skin sensitizer. Homopolymer Moderate skin irritant.

Hexane, 1,6-diisocyanato- Respiratory sensitizer. Inhalation irritation. Severe skin Irritant; allergic sensitizer. Severe eye irritant.

Skin: This material is a severe skin irritant. Causes irritation seen as local redness and possible swelling. Repeated or prolonged skin contact may cause sensitization and an allergic skin reaction.

Inhalation: Inhalation would be expected to cause irritation of the nose, mouth, throat and lungs. Inhalation may cause asthma-like symptoms, including coughing, wheezing, tightness of chest, shortness of breath, and headache.

Eye: May result in severe irritation and possible damage to the cornea and impairment of vision. The effects of high vapor concentration may vary from slight irritation (with tearing and a burning sensation) to keratitis (Inflammation of the cornea) and impairment of vision.

Ingestion: Ingestion not a likely route of exposure. Ingestion may result in irritation of the mouth and digestive tract. Gastroenteritis may result with any or all of the following symptoms: nausea, vomiting, diarrhea, headache.

Chronic Health Effects: Prolonged or repeated exposure to vapors may cause lung damage. Repeated over exposure to isocyanates and high one time accidental exposures have been associated with gradual decrease in lung function. Repeated inhalation also may cause allergic sensitization of the respiratory tract, resulting in coughing, wheezing, shortness of breath, chest tightness, and other asthma-like symptoms that may be life-threatening. Repeated skin contact may cause irritation and allergic dermatitis.

Hexane, 1,6-diisocyanato- Hexane diisocyanate homopolymer is a skin and respiratory Allergic Homopolymer sensitizer. Sensitive individuals may exhibit skin rash, wheezing, tightness of the chest, and difficulty breathing that may progress to a life-threatening inability to breathe. Chronic inhalation may cause lung damage.

Hexane, 1,6-diisocyanato- Hexane diisocyanate (HDI) is a potent skin and respiratory allergic sensitizer. Sensitive individuals may exhibit skin rash, wheezing, tightness of the chest, and difficulty in breathing that may progress to a life-threatening inability to breathe. Chronic inhalation may cause lung damage.

Conditions Aggravated By Exposure: History or presence of allergic disease. Exposure may aggravate one or more of the following medical conditions: Asthma or asthmatic bronchitic medical history.

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>Homopolymer of Hexamethylene Diisocyanate</i>	(CAS 28182-81-2)	25-65 %
<i>Methyl Acetate</i>	(CAS 79-20-9)	10-55%

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

- General:** Prolonged observation may be indicated.
- Inhalation:** If overcome by exposure, remove victim to fresh air immediately. Call a physician. Give oxygen or artificial respiration as needed.
- Eye:** Immediately flush eyes thoroughly with plenty of water and continue flushing for at least 15 minutes. Seek medical attention if discomfort persists.
- Skin:** Remove affected clothing and wash all exposed skin area with mild soap and water, Followed by warm water rinse. Flush with lukewarm water for 15 minutes. Seek medical attention if ill effect or irritation develops. Wash clothing before wearing again.
- Ingestion:** Ingestion unlikely. However, if ingested, give lukewarm water (pint or ½ litre) if victim is fully conscious and alert. Do not induce vomiting. Obtain emergency medical attention.

Physician's Detoxification Procedures: Assess extent and severity of tissue injury by appropriate diagnostic studies and procedures. Bronchodilators may be indicated.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 91.0 F(32.7 C) Setaflash (ASTM D-243, D-3278, D-3828)

FLAMMABLE LIMITS:

- UPPER EXPLOSIVE LIMIT (UEL) (%) 7.0 – Xylene
- LOWER EXPLOSIVE LIMIT (LEL) (%) 1.0 – Xylene
- UPPER EXPLOSIVE LIMIT (UEL) (%) 7.60 – n-Butyl Acetate
- LOWER EXPLOSIVE LIMIT (LEL) (%) 1.38 – n-Butyl Acetate
- UPPER EXPLOSIVE LIMIT (UEL) (%) 6.7 – Ethyl Benzene
- LOWER EXPLOSIVE LIMIT (LEL) (%) 0.8 – Ethyl Benzene

AUTO-IGNITION TEMPERATURE: Approximately 752 F (400 C) – similar material

EXTINGUISHING MEDIA: Dry chemical; Carbon Dioxide; Foam; Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES: Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire, HDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Isolate from heat electrical equipment, sparks and open flame. Closed container may explode when exposed to extreme heat or burst when contaminated with water (co2 evolved). Solvent vapors may be heavier than air. Stagnant air may cause vapors to accumulate and travel along with the ground to an ignition source which may result in a flashback to the source of the vapors.

UNUSUAL FIRE/EXPLOSION HAZARDS: The organic solvents used in this product are considered severe fire hazards. Vapor/air mixtures are explosive above the flash point.

6. ACCIDENTAL RELEASE MEASURES

Release Response: Reactive. May release toxic materials/contaminate water supplies/create human health hazard. Equip responders with proper protection. Use self-contained breathing apparatus and body covering protective clothing. Evacuate/limit access. Extinguish ignition sources; stop release; prevent flow to sewers or public waters. Notify fire and environmental authorities. Blanket with fire fighting foam. Avoid water for clean-up or use in large quantities due to reactivity. Impound/recover large land spill; soak small spill with inert solids. Use suitable disposal containers. Reacts with water. Contain/collect rapidly to minimize dispersion. Disperse residue to reduce aquatic harm.

Regulation	Component	TPQ	RQ
EPA/DOT RQ	Hexane, 1,6-diisocyanato-/CAS#822-06-0		45.4KG/100 lbs.

7. HANDLING AND STORAGE

Storage Conditions: All containers should be labeled to warn against exposure. Store in tightly closed/properly vented containers with vents directed to locations removed from potential personnel exposure. Store below 113°F (45°C).

Handling Procedures: Handle with care. Use special care when handling/transporting samples. Handle empty containers with care – residue may be combustible. For industrial use only. Keep container tightly closed when not in use. When cleaning or repairing equipment contaminated with this material, total encapsulating impervious protective suits, gloves, and boots should be worn to prevent any contact. Material sampling procedures should avoid vapor inhalation and skin/eye contact and only be conducted with proper protective equipment. A positive pressure self-contained breathing apparatus and/or a supplied air respirator should be used.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPOSITION/OCCUPATIONAL EXPOSURE LIMITS							Concentration Wt/Mol%		
Component	CAS #	Source/ Date	Value	Type	Skin Notation	Carcinogenic Listing	Avg.	Min.	Max.
Hexane 1,6 diisocyanato- homopolymer	28182- 81-2	US (OSHA)/1989	N/L			N/L	-	99.0	100
Hexane, 1,6- diisocyanato- 822-06-0		US (OSHA)/2000	0.0005 ml/m3	8hrs/TWA	No	N/L	-	-	0.5
		US (OSHA)/2000	N/L						

Engineering Controls: Local exhaust in addition to general room ventilation may be required to meet exposure limit(s).

Personal Protection:

Inhalation: If exposure can exceed the exposure limit(s), use only supplied air respirator, recommended or approved by appropriate local, state or international agency, operated in a positive pressure mode.

Skin: Wear chemical resistant gloves such as: itri-knit™, nitrile Butyl rubber, 4H™(PE/EVAL). Or Neoprene. Impervious protective suit with integral or tight-fitting gloves, boots, and full head and face protection must be worn. The equipment must be cleaned thoroughly after each use.

Eye: Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to splashing/spraying liquid, airborne particles, or vapor. Other Hygienic Practices: Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Recommended Work Practices: Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Liquid

COLOR: Clear, colorless to light yellow

ODOR: Aromatic odor

pH: Not established

BOILING POINT: Not Determined

FLASH POINT: 91.0 °F / 32.7 °C, Setflash

VAPOR PRESSURE: -.000075mm Hg @ 68°F/20°C based on polyisocyanate

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

AUTO-IGNITION TEMPERATURE: Not Determined

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: Avoid heat, open flame, and prolonged storage at elevated temperatures. Contact with incompatible materials in a closed system – may lead to pressure build-up and possible rupture of container or system. Protect from freezing.

HAZARDOUS DECOMPOSITION PRODUCTS: By Fire and Thermal Decomposition: carbon dioxide and carbon monoxide, chlorine compounds, fluoride compounds, various hydrocarbons, nitrogen oxides (NO_x), other aliphatic fragments which have not been determined.

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

11. TOXICOLOGICAL INFORMATION

Product Summary: Repeated skin contact may cause irritation and allergic dermatitis. Repeated inhalation also may cause allergic sensitization or the respiratory tract, resulting in coughing, wheezing, shortness of breath, chest tightness, and other asthma-like symptoms that may be life-threatening. Interaction with other isocyanates may cross react and cause similar sensitization responses.

Component Summary:

Hexane, 1,6-diisocyanato-, homopolymer

LC50 (Inhl)- rat:	3124 MG/KG
Oral LD50-rat:	>5000 MG/KG
Oral LD50-rabbit:	900 MG/KG
Oral LD50-rabbit:	>2000 MG/KG

Repeated Dose Toxicity: Hexane diisocyanate homopolymer is a skin and respiratory allergic sensitizer.

Sensitive individuals may exhibit skin rash, wheezing, tightness of the chest, and difficulty breathing that may progress to a life-threatening inability to breathe. Chronic inhalation may cause lung damage.

Hexane, 1,6-diisocyanato

LC50 (Inhl) -mouse:	30 MG/M3
LC50 (Oral) – rat:	745.5 MG/KG
LC50 (Oral) – mouse:	350 MG/KG
LD50 (Skin) - rabbit:	598.5 MG/KG

Repeated Dose Toxicity: Hexane diisocyanate (HDI) is a potent skin and respiratory allergic sensitizer.

Sensitive individuals may exhibit skin rash, wheezing, tightness of the chest, and difficulty breathing that may progress to a life-threatening inability to breathe. Chronic inhalation may cause lung damage.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No Data Available
Environmental Fate: No Data Available
Bioaccumulation: No Data Available
Biodegradation: No Data Available

13. DISPOSAL CONSIDERATIONS

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

EMPTY CONTAINER PRECAUTIONS: Recondition or dispose of empty container in accordance with governmental regulations. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

14. TRANSPORT INFORMATION

TECHICAL SHIPPIG AME: Polyisocyanate containing Xylene and Butyl Acetate
FREIGHT CLASS BULK: Isocyanate
FREIGHT CLASS PACKAGE: Chemicals, OI (Isocyanate), MFC 60000
PRODUCT LABEL: Product Label Established

DOT (DOMESTIC SURFACE)

PROPER SHIPPIG AME: Resin Solution
HAZARD CLASS OR DIVISIO: 3
U/A UMBER: U 1866
PACKIG GROUP: III
DOT PRODUCT RQ lbs (kgs): 800 lbs (362.9 kgs)
HAZARD LABEL(S): Flammable Liquid
HAZARD PLACARD(S) : Flammable

IMO/IMDG CODE (OCEAN)

PROPER SHIPPIG AME: Resin Solution
HAZARD CLASS OR DIVISIO: 3
U/A UMBER: U 1866
PACKIG GROUP: III
HAZARD LABEL(S): Flammable Liquid
HAZARD PLACARD(S) : Flammable

ICAO/IATA (AIR)

PROPER SHIPPIG AME: Resin Solution
HAZARD CLASS OR DIVISIO: 3
U/A UMBER: U 1866
SUBSIDIARY RISK: one
PACKIG GROUP: III
HAZARD LABEL(S): Flammable Liquid
RADIOACTIVE: Non-Radioactive
PASSEGER AIR – MAX. QTY.: 60L
PASSEGER PACKIG ISTRUCTIO: 309
CARGO AIR – MAX. QTY.: 220L
CARGO AIR PACKIG ISTRUCTIO: 310

15. REGULATORY INFORMATION

Regulatory Advisory: This material contains a component(s) with known CAS numbers classified as

hazardous substances subject to the reporting of CERCLA (40 CFR 302) and/or to the release reporting requirements of SARA (Section 302) based on reportable quantities (RQs) (SEE SECTION 6)

Regulatory Status: All components of this product are listed or are exempt from listing on the TCA 8(b) inventory. If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

SARA – Section 313 Emissions Reporting: This material contains the following chemicals with known CAS numbers subject to the reporting requirements of SARA Title III, Section 313 and 40 CFR 372:

<u>Component Summary</u>	<u>Reporting Threshold</u>
Hexane, 1,6-diisocyanato-/CAS#822-06-0	1.0%

SARA – Section 311/312: Based upon available information, this material and/or components are classified as the following health and/or physical hazards according to Section 311 & 312:

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard
Reactive

State Reporting: This material is known to contain chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition as follows:

Benzene	CAS # 98-56-5	Trace
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A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, 1,1-trichloromethane, methylene chloride, (FC-23), (CFC-113), (CFC-22), (CFC-114) and (CFC-115). By this definition, this is not a VOC material.

16. OTHER INFORMATION

Date Revised: 05/06/2015

MANUFACTURER'S NAME AND ADDRESS:

Petra Polymers
1610 E. Miraloma Ave.
Placentia, CA 92870
Telephone: 888-497-3872

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.