



**PTU™**  
**Component A**  
Revised: 8/31/04

## MATERIAL SAFETY DATA SHEET

### EMERGENCY CONTACT:

*Spills, Leaks, fire or Exposure Call Chemtrec: (800) 424-9300*

### SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Polythiourea (PTU™),  
Component A

**Chemical Name:** N/A – Product is a Mixture

**Distributed By:** Specialty Products, Inc.  
2410 104th St. Ct. S., Suite D  
Lakewood, WA 98499  
(253) 588-7101

### SECTION 2A - COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT(S) NO.	% (w/w)	ACGIH TLV	CAS
Diphenylmethane Diisocyanate Contains: 4, 4' – MDI (-22%) MDI Isomers	-42	Not Listed 0.005 ppm Not Listed	26447-40-5 101-68-8 N/A
Modified MDI	-30 – 60	Not Listed	N/A

### SECTION 2B – ACUTE TOXICITY DATA

#### TOXICOLOGICAL DATA

- Polymeric MDI
  - Oral LD<sub>50</sub> (rat) > 5,000 mg/kg
  - Dermal LD<sub>50</sub> (rabbit) > 5,000 mg/kg
  - Inhalation LC<sub>50</sub> (rat)=490 mg/m<sup>3</sup>/4 hrs. (respirable aerosol)

#### TOXICITY

- Polymeric MDI
  - LC<sub>50</sub> (Zebra Fish) > 1,000 mg/l (At the highest level tested of 1,000 mg/l there were no deaths.
  - EC<sub>50</sub> (Daphnia magna) (24 hr) > 1,000 mg/l
  - EC<sub>50</sub> (E. Coli) > 100 mg/l

### **SECTION 3 - HEALTH IDENTIFICATION**

#### **EYE CONTACT**

- The aerosol, vapor or liquid will irritate human eyes following contact.

#### **SKIN CONTACT**

- Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization. There is limited evidence from animal studies that skin contact may play a role in respiratory sensitization. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

#### **INHALATION**

- This product is a respiratory and potential respiratory sensitizer. Inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization and lung injury. Symptoms may include irritation to the eyes, nose, throat and lungs possible combined with dryness of the throat, tightness of chest and difficulty in breathing and/or flu-like symptoms. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons. In a single evaluation of 5 men occupationally exposed to MDI and hydrocarbon solvents vapors under conditions where adequate ventilation or other safety precautions were not used, neuropsychological findings were attributed to MDI.

#### **INGESTION**

- Ingestion may cause irritation of the gastrointestinal tract. Based on the acute oral LD50, this product is considered practically non-toxic by ingestion.

### **SECTION 4 – EMERGENCY AND FIRST AID MEASURES**

#### **EYE CONTACT**

- Immediately flush eyes with running water for a minimum of 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention immediately.

#### **SKIN CONTACT**

- Remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation, redness, or a burning sensation develops and persists, obtain medical attention. Contaminated clothing should be thoroughly cleaned before reuse.

#### **INHALATION**

- Move patient from area of exposure; keep warm and at rest. Obtain medical attention. Treatment is symptomatic for primary irritation or difficulty in breathing. If breathing is labored, oxygen should be administered by qualified personnel. Apply artificial respiration if breathing has ceased or signs of failing.

#### **INGESTION**

- DO NOT induce vomiting. Provided the patient is conscious, wash out mouth with water; then give 1 or 2 glasses of water to drink. Refer person to medical personnel for immediate attention.

#### **NOTE TO PHYSICIANS**

- Symptomatic and supportive therapy as needed. Following severe exposure medical follow up should be monitored for at least 48 hours.

### **SECTION 5 – SUPPLEMENTAL HEALTH INFORMATION**

#### **HEALTH HAZARDS**

- Irritating to eyes, respiratory system and skin. Inhalation at levels above the occupational exposure limit could cause respiratory sensitization. Risk of serious damage to respiratory system. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons. Sensitized persons should not be exposed to any mixture containing unreacted MDI.

#### **Physical Hazards**

- Reacts slowly with water to produce carbon dioxide, which may rupture closed containers. This reaction accelerates at higher temperatures.

## General

- In case of accident or if you feel unwell, seek medical attention immediately.

## SECTION 6 – PHYSICAL DATA

<b>Boiling Point:</b>	Not Applicable
<b>Specific Gravity:</b>	Approx. 1.1439 (At 25° C)
<b>Vapor Pressure:</b>	Approx. $4 \times 10^{-6}$
<b>Melting Point:</b>	Not Available
<b>Solubility (Water):</b>	Reacts with water
<b>Solubility (Other):</b>	Soluble in most organic solvents
<b>Vapor Density (Air=1):</b>	Approx. 8.5
<b>Appearance and Odor:</b>	Clear yellow liquid, Slight odor.

## SECTION 7 – FIRE AND EXPLOSION HAZARDS

**Flash Point:** > 230° F (110° C)

**Flammable Limits/% Volume in Air:** Not Available

### Extinguishing Media

- Carbon dioxide, dry chemical, or appropriate foam. If water is used, very large quantities are required. Reaction between water and hot isocyanate may be vigorous. Contain run-off water with temporary barriers.

### Fire Fighting Procedures

- Containers may burst under intense heat. Due to reaction with water, a hazardous build-up of pressure could result if contaminated containers are resealed.

### Fire Fighting Protective Equipment

- Use self-contained breathing apparatus and full protective clothing (Bunker Gear).

## SECTION 8 - REACTIVITY

**Chemical Stability:** Stable at room temperature.

**Hazardous Polymerization:** Polymerization may occur at elevated temperatures in the presence of alkalies, tertiary amines and metal compounds.

**Hazardous Decomposition Products:** Highly unlikely under normal industrial use.

**Conditions to Avoid:** Avoid high temperatures. Avoid freezing.

**Incompatibility with Other Substances:** This product will react with any material containing active hydrogen's such as water, alcohol, amines, bases and acids. The reaction with water is very slow under 50° C (122° F) but is accelerated at higher temperatures.

## SECTION 9 – EMPLOYEE PROTECTION

### Respiratory Protection

- When the product is sprayed or heated without adequate ventilation, an approved MSHA/NIOSH positive pressure, supplied air respirator may be required. Air purifying respirators equipped with organic vapor cartridges and a HEPA (P100) particulate filter may be used under certain conditions when a cartridge change out schedule has been developed in accordance with the OSHA respiratory protection standard (29 CFR 1919.134).

### Eye Protection

- Chemical safety goggles. If there is a potential for splashing, use a full-face shield.

### Skin Protection

- The following protective materials are recommended:
  - GLOVES – neoprene, nitrile rubber, butyl rubber. Thin latex disposable gloves should be avoided for repeated or long-term use.

- PROTECTIVE CLOTHING should be selected and used in accordance with ‘Guidelines for the Selection of Chemical Protective Clothing’, published by ACGIH.

#### **Engineering Controls**

- Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to the ACGIH publication ‘Industrial Ventilation’.

### **SECTION 10 –ENVIRONMENTAL PROTECTION**

#### **SPILLS, LEAKS, OR RELEASES**

- Clean up should only be performed by trained personnel. People dealing with major spillages should wear full protective clothing including full air supplied respirator. Evacuate the area.
- Prevent further leakage, spillage or entry into drains. Contain and absorb large spillages onto an inert, non-flammable absorbent carrier (such as earth or sand).
- Shovel into open-top drums or plastic bags for further decontamination, if necessary. Wash the spillage area clean with liquid decontaminant. Test atmosphere for MDI.
- Neutralize small spillages with decontaminant. Remove and dispose of residues. Notify applicable government authorities if release is reportable.

#### **PREPARATION OF DECONTAMINATION SOLUTION**

- Prepare a decontamination solution of 0.2 – 0.5% liquid detergent and 3 – 8% concentrated ammonium hydroxide in water (5 – 10% sodium carbonate may be substituted for the ammonium hydroxide).
- Follow the precautions on the supplier’s material safety data sheets when preparing and using solution.

#### **USE OF DECONTAMINATION SOLUTION**

- Allow deactivated material to stand for at least 30 minutes before shoveling into drums.
- Do not tighten the bungs.
- Mixing with wet earth is also effective, but slower.

### **SECTION 11 –SPECIAL PRECAUTIONS**

#### **PRECAUTIONS IN HANDLING AND STORAGE HANDLING**

- Avoid personal contact with the product or reaction mixture. Use only with adequate ventilation to ensure that the occupational exposure limit is not exceeded. The efficiency of the ventilation system must be monitored regularly because of the possibility of blockage. Avoid breathing aerosols, mists and vapors. When the product is sprayed or heated, and approved MSHA/NIOSH positive-pressure, supplied air-respirator may be required.

#### **STORAGE**

- Keep containers properly sealed and when stored indoors, in a well-ventilated area. Keep contents away from moisture. Due to reaction with water, producing CO<sub>2</sub> gas, a hazardous build-up of pressure could result if contaminated containers are resealed.
- Do not reseal contaminated containers. Uncontaminated containers, free of moisture, may be resealed only after placing under a nitrogen blanket. Do not store in containers made of copper, copper alloys or galvanized surfaces.

~~~ IDEAL STORAGE TEMPERATURE IS 16 – 38° c (60 – 100° F) ~~~

#### **DISPOSAL CONSIDERATIONS**

- Disposal should be in accordance with local, state, provincial or national regulations. This material is not a hazardous waste under RCRA 40 CFR 261.
- Small quantities should be treated with a decontaminant solution. The treated waste is not a hazardous material under RCRA 40 CFR 261.

- Chemical waste, even small quantities should never be poured down drains, sewers, or waterways.
- Empty containers should be decontaminated and either passed to an approved drum recycler or destroyed.

## **SECTION 12 – TRANSPORTATION REQUIREMENTS**

**Department of Transportation Classification:** Not Regulated  
**DOT Proper Shipping Name:** Diphenylmethane Diisocyanate

## **SECTION 13 – OTHER REGULATORY CONTROLS**

### **USA CLASSIFICATION**

#### **OSHA CLASSIFICATION**

- This product is classified as hazardous material under the criteria outlined in the OSHA Hazard Communication Standard (HCS) (29 CFR 1919.1200).

#### **TSCA REGULATIONS**

- All ingredients are on the TSCA Chemical Substance Inventory.

#### **CERCLA**

- 4,4' – Methylene Diphenyl Diisocyanate (CAS 101-68-8) has a 5,000 lb. RQ.
- Any spill or release above the RQ must be reported to the National Response Center (800-424-8802).

\*\*This product does not contain nor is it manufactured with ozone depleting substances\*\*

## **SECTION 14 - STATE REGULATORY INFORMATION**

#### **Other Regulations/Legislation, which apply to this product**

- Massachusetts Right-To-Know, Pennsylvania Right-To-Know, New Jersey Right-To-Know, CERCLA

#### **CANADIAN CLASSIFICATION**

- This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS contains all the information required by the CPR.

#### **CEPA/Canadian Domestic Substances List (DSL)**

- The substance(s) in this product is/are on the Canadian Domestic Substances List (CEPA DSL).

## **SECTION 15 – SPECIAL NOTES**

**FOR YOUR PROTECTION:** The information and recommendations in this publication are, to the best of our knowledge, reliable. The toxicity and risk characteristics of products made by Specialty Products Inc. will necessarily differ from the toxicity and risk characteristics that occur when such products are used with other materials during a manufacturing process. The resulting risk characteristics should be determined and made known to ultimate end-users and processors. Specialty Products Inc. **MAKES NO WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**