

**Section 1: IDENTIFICATION**

**Product Name:** WANNATE® HT-400

**Synonyms:** Hexamethylene Diisocyanate Polymer.

**Product Use:** Binding agents, intermediates; isocyanate component for polyurethanes.

**Restrictions on Use:** Not available.

**Manufacturer/Supplier:** Wanhua Chemical (America) Co., Ltd.  
3803 West Chester Pike, Suite 240  
Newtown Square, PA 19073

**Phone Number:** Customer service telephone: 610-566-5297  
Telephone in Canada: 833-213-6057

**Emergency Phone:** North America: Chemtrec 800-424-9300 (domestic)  
+1-703-527-3887 (International, collect calls accepted)

**Date of Preparation of SDS:** February 7, 2023

**Section 2: HAZARD(S) IDENTIFICATION****GHS INFORMATION**

**Classification:** Acute Toxicity - Inhalation, Category 4  
Sensitization - Respiratory, Category 1  
Sensitization - Skin, Category 1  
Specific Target Organ Toxicity (Single Exposure), Category 3 - Respiratory Irritation

**LABEL ELEMENTS****Hazard****Pictogram(s):****Signal Word:** Danger**Hazard** Harmful if inhaled.**Statements:** May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
May cause respiratory irritation.**Precautionary Statements**

**Prevention:** Avoid breathing mist, vapours, or spray.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves, protective clothing and eye protection.  
Wear respiratory protection.

**Response:** IF ON SKIN: Wash with plenty of water.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER or doctor if you feel unwell.  
If skin irritation or rash occurs: Get medical attention.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor.  
Take off contaminated clothing and wash it before reuse.

**Storage:** Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

**Disposal:** Dispose of contents and container in accordance with applicable regional, national and local laws and regulations.

**Hazards Not Otherwise Classified:** Not applicable.

**Ingredients with Unknown Toxicity:** None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS			
Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Hexane, 1,6-diisocyanato-, homopolymer	Not available.	28182-81-2	99.5 - 100
Hexane, 1,6-diisocyanato-	Hexamethylene diisocyanate; HDI	822-06-0	< 0.5

Section 4: FIRST-AID MEASURES	
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**Inhalation:** If inhaled: Remove person to fresh air and keep comfortable for breathing.  
If experiencing respiratory symptoms: Call a poison center or doctor.

**Acute and delayed symptoms and effects:** Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergy-prone people who have been sensitized to isocyanates or even have not been previously exposed to isocyanates may experience symptoms at concentrations as low as 0.0014 ppm. Asthma sufferers or people who easily get contact dermatitis should therefore not be exposed to isocyanates. The isocyanate odour does not provide sufficient warning of overexposure due to the high odour thresholds.

**Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.

**Acute and delayed symptoms and effects:** May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Isocyanates may cause severe watering, formation of solid particles in the eye fluid, glaucoma, photophobia (sensitivity to light), blepharospasm (uncontrollable winking), conjunctivitis (inflammation of the mucous membranes of the eye lids with possible discharge), keratitis (inflammation of the cornea) and damage the cornea (opacity or clouding).

**Skin Contact:** If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

**Acute and delayed symptoms and effects:** May cause an allergic skin reaction. May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Prolonged skin contact may cause redness, swelling, blistering and possible skin sensitization (dermatitis).

**Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

**Acute and delayed symptoms and effects:** May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

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

**Note to Physicians:** Symptoms may not appear immediately.

### Section 5: FIRE-FIGHTING MEASURES

#### FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

**Sensitivity to Mechanical Impact:** This material is not sensitive to mechanical impact.

**Sensitivity to Static Discharge:** This material is sensitive to static discharge at temperatures at or above the flash point.

#### MEANS OF EXTINCTION

**Suitable Extinguishing Media:** Small Fire: Dry chemical, CO<sub>2</sub>, water spray or regular foam.  
Large Fire: Water spray, fog or alcohol-resistant foam. Move containers from fire area if you can do it without risk.

**Unsuitable Extinguishing Media:** Not available.

**Products of Combustion:** Oxides of carbon. Oxides of nitrogen. Hydrogen cyanide. Isocyanate vapours.

**Protection of Firefighters:** Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

### Section 6: ACCIDENTAL RELEASE MEASURES

**Emergency Procedures:** Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

**Personal Precautions:** Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

**Environmental Precautions:** Keep out of drains, sewers, ditches, and waterways.

**Methods for Containment:** Stop leak if without risk. Do not flush to sewer or allow to enter waterways.

**Methods for Clean-Up:** Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

**Other Information:** See Section 13 for disposal considerations.

### Section 7: HANDLING AND STORAGE

**Handling:**

Do not swallow. Avoid breathing mist, vapours, or spray. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. See Section 8 for information on Personal Protective Equipment.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

### Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines**

**Component**

Hexane, 1,6-diisocyanato-, homopolymer [CAS No. 28182-81-2]

**ACGIH:** No TLV established.

**OSHA:** No PEL established.

Hexamethylene diisocyanate (HDI) [CAS No. 822-06-0]

**ACGIH:** 0.005 ppm (TWA); (1985)

**OSHA:** No PEL established.

**PEL:** Permissible Exposure Limit

**TLV:** Threshold Limit Value

**TWA:** Time-Weighted Average

**Engineering Controls:** Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**



**Eye/Face Protection:** Wear safety glasses. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3:20 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

**Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.

**Skin and Body Protection:** Wear protective clothing.

**Respiratory Protection:** Wear respiratory protection. If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved

air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-18, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

**General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

<b>Section 9: PHYSICAL AND CHEMICAL PROPERTIES</b>
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<b>Appearance:</b>	Clear, colourless liquid.
<b>Colour:</b>	Colourless.
<b>Odour:</b>	Almost odourless.
<b>Odour Threshold:</b>	Not available.
<b>Physical State:</b>	Liquid.
<b>pH:</b>	Not available.
<b>Melting Point / Freezing Point:</b>	Not available.
<b>Initial Boiling Point:</b>	Not applicable, decomposition.
<b>Boiling Range:</b>	Not available.
<b>Flash Point:</b>	~ 174 °C (345.2 °F)
<b>Evaporation Rate:</b>	Not available.
<b>Flammability (solid, gas):</b>	Not applicable.
<b>Lower Flammability Limit:</b>	Not available.
<b>Upper Flammability Limit:</b>	Not available.
<b>Vapor Pressure:</b>	< 0.00001 hPa at 25 °C (77 °F)
<b>Vapor Density:</b>	Not available.
<b>Relative Density:</b>	1.13 (Water = 1) at 20 °C (68 °F)
<b>Solubilities:</b>	Reacts with water to liberate CO <sub>2</sub> gas.
<b>Partition Coefficient: n-Octanol/Water:</b>	6.62
<b>Auto-ignition Temperature:</b>	Not available.
<b>Decomposition Temperature:</b>	120 °C (248 °F)
<b>Viscosity:</b>	196 mPa.s at 20 °C (68 °F)
<b>Percent Volatile, wt. %:</b>	Not available.

**SAFETY DATA SHEET**

**VOC content, wt. %:** Not available.  
**Density:** Not available.  
**Coefficient of Water/Oil Distribution:** Not available.

**Section 10: STABILITY AND REACTIVITY**

**Reactivity:** Contact with incompatible materials. Sources of ignition. Exposure to heat.  
**Chemical Stability:** Stable under normal storage conditions.  
**Possibility of Hazardous Reactions:** HDI-based isocyanurates may undergo uncontrolled exothermic polymerization upon contact with incompatible materials, especially strong bases, such as triethylamine and sodium hydroxide, trialkyl phosphines, potassium acetate, many metal compounds soluble in organic media or at temperatures over 204°C. The resulting pressure build-up may rupture closed containers.  
**Conditions to Avoid:** Contact with incompatible materials. Sources of ignition. Exposure to heat.  
**Incompatible Materials:** Acids. Bases. Oxidizers. Water. Amines. Alcohols.  
**Hazardous Decomposition Products:** Not available.

**Section 11: TOXICOLOGICAL INFORMATION**
**EFFECTS OF ACUTE EXPOSURE**
**Product Toxicity**

**Oral:** Not available.  
**Dermal:** Not available.  
**Inhalation:** Not available.

**Component Toxicity**

Component	CAS No.	LD <sub>50</sub> oral	LD <sub>50</sub> dermal	LC <sub>50</sub>
Hexane, 1,6-diisocyanato-, homopolymer	28182-81-2	Not available.	Not available.	18500 mg/m <sup>3</sup> (rat); 1H
Hexamethylene diisocyanate	822-06-0	350 mg/kg (mouse)	570 uL/kg (rabbit)	30 mg/m <sup>3</sup> (mouse);

**Likely Routes of Exposure:** Eye contact. Skin contact. Inhalation. Ingestion.

**Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs.

**Symptoms (including delayed and immediate effects)**

**Inhalation:** Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergy-prone people who have been sensitized to isocyanates or even have not been previously exposed to isocyanates may experience symptoms at concentrations as low as 0.0014 ppm. Asthma sufferers or people who easily get contact dermatitis should therefore not be exposed to isocyanates. The isocyanate

odour does not provide sufficient warning of overexposure due to the high odour thresholds.

- Eye:** May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Isocyanates may cause severe watering, formation of solid particles in the eye fluid, glaucoma, photophobia (sensitivity to light), blepharospasm (uncontrollable winking), conjunctivitis (inflammation of the mucous membranes of the eye lids with possible discharge), keratitis (inflammation of the cornea) and damage the cornea (opacity or clouding). I
- Skin:** May cause an allergic skin reaction. May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Prolonged skin contact may cause redness, swelling, blistering and possible skin sensitization (dermatitis).
- Ingestion:** May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Skin Sensitization:** Allergy-prone people who have been sensitized to isocyanates or even have not been previously exposed to isocyanates may experience symptoms at concentrations as low as 0.0014 ppm.

**Respiratory Sensitization:** Allergy-prone people who have been sensitized to isocyanates or even have not been previously exposed to isocyanates may experience symptoms at concentrations as low as 0.0014 ppm.

**Medical Conditions Aggravated By Exposure:** Not available.

#### **EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)**

**Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs.

**Chronic Effects:** Prolonged or repeated contact may dry skin and cause irritation.

**Carcinogenicity:** This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

**Mutagenicity:** Not available.

**Reproductive Effects:** Not available.

#### **Developmental Effects**

**Teratogenicity:** Not available.

**Embryotoxicity:** Not available.

**Toxicologically Synergistic Materials:** Not available.

<b>Section 12: ECOLOGICAL INFORMATION</b>
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**Ecotoxicity:** Not available.

**Persistence / Degradability:** Not available.

**Bioaccumulation / Accumulation:** Not available.

**Mobility in Environment:** Not available.

**Other Adverse Effects:** Not available.



**Section 13: DISPOSAL CONSIDERATIONS**

**Disposal Instructions:** Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

**Section 14: TRANSPORT INFORMATION**

**U.S. Department of Transportation (DOT)**

**Proper Shipping Name:** Not regulated.  
**Class:** Not applicable.  
**UN Number:** Not applicable.  
**Packing Group:** Not applicable.  
**Placard(s):** Not applicable.

**Canada Transportation of Dangerous Goods (TDG)**

**Proper Shipping Name:** Not regulated.  
**Class:** Not applicable.  
**UN Number:** Not applicable.  
**Packing Group:** Not applicable.  
**Placard(s):** Not applicable.

**Section 15: REGULATORY INFORMATION**

**Chemical Inventories**

**US (TSCA)**

The components of this product are in compliance with the chemical notification requirements of TSCA.

**Canada (DSL)**

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

**Federal Regulations**

**United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**SARA Title III**

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Hexamethylene diisocyanate	Not listed.	Not listed.	100	313#	Not listed.	Not listed.



**WANNATE® HT-400**

Date of Preparation: February 7, 2023

**SAFETY DATA SHEET****State Regulations****Massachusetts**

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

<b>Component</b>	<b>CAS No.</b>	<b>RTK List</b>
Hexamethylene diisocyanate	822-06-0	Listed.

**New Jersey**

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

<b>Component</b>	<b>CAS No.</b>	<b>RTK List</b>
Hexamethylene diisocyanate	822-06-0	Listed.

**Pennsylvania**

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

<b>Component</b>	<b>CAS No.</b>	<b>RTK List</b>
Hexamethylene diisocyanate	822-06-0	Listed.

**California**

**California Prop 65:** This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**Section 16: OTHER INFORMATION****Disclaimer:**

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

**Date of Preparation of SDS:** February 7, 2023

**Version:** 1.0

**GHS SDS Prepared by:** **Aegis Regulatory Inc.**  
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**www.aegisreg.com**