Section 1: IDENTIFICATION

Product Name:	WANNATE® HT-790B
Synonyms:	Mixture of hexamethylene diisocyanate, oligomers and n-butyl acetate.
Product Use:	Binding agents, intermediates; other: isocyanate component for polyurethanes. The highly reactive diisocyanates are important materials used in production of PUR products. Their reaction with various polyols and auxiliary materials is utilized to obtain miscellaneous material structures like foams, coatings or adhesives.
Restrictions on Use:	Do not use for private purposes (household).
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:	May 19, 2023

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification:
Flammable Liquids, Category 3
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 Statements:
Flammable liquid and vapor.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary Statements

Prevention:
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.

Ground and bond container and receiving equipment.
Use explosion-proof electrical, ventilating, and lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
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 (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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.
In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
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	~ 90
Acetic acid, butyl ester	n-Butyl acetate	123-86-4	~ 10
Hexane, 1,6-diisocyanato-	Hexamethylene diisocyanate; HDI	822-06-0	≤ 0.30

Section 4: FIRST-AID MEASURES

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

Flammable liquid and vapor. Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Liquid is lighter than water.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge: This material is sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO_2, 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: As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. 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). All equipment used when handling the product must be grounded.

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

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Stop leak if you can do it without risk. A vapor suppressing foam may be used to reduce vapors.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use non-sparking tools. Take action to prevent static discharges. 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. Keep cool. 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.

n-Butyl acetate [CAS No. 123-86-4]

ACGIH: 50 ppm (TWA); 150 ppm (STEL); (2016)
OSHA: 150 ppm (TWA), 710 mg/m³ (TWA);
200 ppm (STEL) [Vacated];

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
STEL: Short-Term Exposure Limit

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.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless to light yellow liquid.
Colour:	Colourless to light yellow.
Odour:	Solvent-like.
Odour Threshold:	Not available.
Physical State:	Liquid.
pH:	Not available.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	50 °C (122 °F)
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Lower Flammability Limit:	1.2 (n-Butyl acetate)
Upper Flammability Limit:	7.5 (n-Butyl acetate)
Vapor Pressure:	Not available.
Relative Vapor Density:	Not available.
Relative Density:	~ 1.13 (Water = 1) at 25 °C (77 °F)
Solubilities:	Insoluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.

Decomposition Temperature:	Not available.
Kinematic Viscosity:	Not available.
Dynamic Viscosity:	1100 to 2500 mPa.s at 25 °C (77 °C)
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	~ 1.13 g/cm³ at 25 °C (77 °F)
Coefficient of Water/Oil Distribution:	Not available.
Particle Characteristics:	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. The main removal mechanism of HDI Trimer in the environment is hydrolysis. HDI Trimer reacts quickly with water to form predominantly solid, insoluble polyureas. Stability in organic solvents: In protic solvents like alcohols, isocyanates react rapidly. Isocyanates form urethanes in alcohol. Stability is expected with non-protic solvents like toluene, acetone, dioxane etc. The concentration of HDI Trimer in an acetonitrile solution without addition of water was stable within 26 hours.
Possibility of Hazardous Reactions:	Reaction is slow with cold or warm water (< 50 °C), with hot water or steam the reaction is faster, producing carbon-dioxide causing pressure increase.
Conditions to Avoid:	Contact with incompatible materials. Sources of ignition. Exposure to heat. Moisture. Strong light.
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_{50} oral	LD_{50} dermal	LC_{50}
Hexane, 1,6-diisocyanato-, homopolymer	28182-81-2	Not available.	Not available.	18500 mg/m³ (rat); 1H
n-Butyl acetate	123-86-4	10768 mg/kg (rat)	> 17600 mg/kg (rabbit)	390 ppm (rat); 4H
Hexamethylene diisocyanate	822-06-0	350 mg/kg (mouse)	570 uL/kg (rabbit)	30 mg/m³ (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.

Section 12: ECOLOGICAL INFORMATION

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: UN1866, RESIN SOLUTION, 3, PG III

Class: 3

UN Number: UN1866

Packing Group: III

Placard(s):

Canada Transportation of Dangerous Goods (TDG)
Proper Shipping Name: UN1866, RESIN SOLUTION, 3, PG III

Class: 3

UN Number: UN1866

Packing Group: III

Placard(s):

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.)
n-Butyl acetate	Not listed.	Not listed.	5000	Not listed.	Not listed.	Not listed.
Hexamethylene diisocyanate	Not listed.	Not listed.	100	313#	Not listed.	Not listed.

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

Component	CAS No.	RTK List
n-Butyl acetate	123-86-4	Listed.
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)

Component	CAS No.	RTK List
n-Butyl acetate	123-86-4	SHHS
Hexamethylene diisocyanate	822-06-0	Listed.

Note: SHHS = Special Health Hazard Substance

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

Component	CAS No.	RTK List
n-Butyl acetate	123-86-4	E
Hexamethylene diisocyanate	822-06-0	Listed.

Note: E = Environmental Hazard

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:	May 19, 2023
Version:	1.0
GHS SDS Prepared by:	**Aegis Regulatory Inc.**
	Phone: 1 (519) 488-0351
	www.aegisreg.com