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Section 1: Identification

1.1 Product identifier:

Wannate® TT350B

Other identifiers: solution of Toluene Diisocyanate based Isocyanurate Polyisocyanate

1.2 Recommended use:

Identified uses: Raw material for manufacture of coatings, adhesives, sealants or elastomers in industrial applications.

Restrictions on use: Industrial uses only, not intended for uses in consumer products.

1.3 Supplier:

Wanhua Chemical (America) Co., Ltd.
3803 West Chester Pike, Suite 240
Newtown Square, PA 19073
Customer service telephone: 610-566-5297 Telephone in Canada: 613-796-1606
www.whchem.com

1.4 Emergency telephone number:

North America: Chemtrec 800-424-9300 (domestic)
+1-703-527-3887 (international, collect calls accepted)
Europe: +31 20 20 65132/65130 (08:30-17:30) +44 780 183 7343

Section 2: Hazard Identification

2.1 Classification:

Flammable liquid Cat. 3; H226
Skin Sensitization Cat. 1; H317
Respiratory Sensitization Cat. 1; H334
Specific Target Organ Toxicity Single Exposure Cat. 3; H336
Carcinogenicity Cat. 2; H351

2.2 Label elements:

Danger.
Flammable liquid and vapor.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
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 vapor, fume, mist or spray.
Wear protective gloves, protective clothing and eye protection or face protection.
Contaminated work clothing should not be allowed out of the workplace.
Use only outdoors or in a well-ventilated area.
In case of inadequate ventilation wear respiratory protection.

Response
IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash with polyglycol based skin cleanser, corn oil or plenty of water and soap.
If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.
If exposed or concerned: Get medical advice.

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2.2 Label elements (continued):

Storage
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal
Recycle and or dispose of contents and containers in accordance with local, regional, national and international regulations.

2.3 Other hazards:

Contains isocyanates; may react in contact with water and other materials releasing heat and gases.
Vapors or mists of this material may cause irritation to the nose, throat and respiratory tract.
May be harmful if inhaled.
May cause eye and skin irritation.
Can decompose at high temperatures forming toxic gases (see Section 10).

Section 3: Composition/Information on Ingredients

Chemical Name	CAS RN®	Wt.%	GHS Classification
Benzene, 1,3-diisocyanatomethyl-, homopolymer Common names: Polymeric TDI, Toluene diisocyanate homopolymer	9017-01-0	30 - 60	Not available
n-butyl acetate Common name: Butyl acetate	123-86-4	30 - 60	Flam. Liq. 2; H225 STOT SE 3; H336
Toluene diisocyanate Common name: TDI Synonym: 4-methyl-m-phenylene diisocyanate	26471-62-5	0 – 0.5	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2A; 319 Acute Tox. 1; H330 Resp. Sens. 1; H334 STOT SE 3; H335 Carc. Cat. 2; H351 Aquatic Chronic 3; H412

Section 4: First-Aid Measures

4.1 Description of first-aid measures:

Precautions: First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Take proper precautions to ensure your own safety before attempting rescue, (e.g. wear appropriate protective equipment).

Some jurisdictions have specific regulations for isocyanates. These regulations may include requirements for medical surveillance programs, including pre-employment and pre-placement examinations, periodic medical examinations, clinical tests, health education and record keeping. Obtain detailed information from the appropriate government agency in relevant jurisdictions.

Inhalation: If breathing is difficult, remove person to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
If breathing has stopped, trained personnel should begin artificial respiration (AR) or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Immediately obtain medical attention and transport victim to an emergency care facility.

Skin Contact: Take off immediately all contaminated clothing shoes and leather goods (e.g. watchbands, belts). Wash exposed skin with a polyglycol based skin cleanser, corn oil or plenty of water and mild, non-abrasive soap. Completely decontaminate clothing, shoes and leather goods before reuse or discard. If skin irritation or rash occurs: Get medical attention.

Eye Contact: Remove source of exposure or move person to fresh air. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
If product is a solid in the eye: Do not allow victim to rub eye(s). Let the eye(s) water naturally for a few minutes. Have victim look right and left, and then up and down. If particle/dust does not dislodge, rinse cautiously with water until particle is removed. If irritation persists, obtain medical attention. DO NOT attempt to manually remove anything stuck to eye(s).

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4.1 Description of first-aid measures:

Ingestion: If swallowed, call a POISON CENTER or doctor. Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration.

4.2 Most important symptoms and effects, both acute and delayed:

Inhalation: Respiratory tract irritation, sore throat, cough, difficulty breathing or asthmatic reaction, drowsiness and dizziness.

Skin Contact: May cause in tingling, irritation or redness of the skin inflammation, rash, itching and staining. Repeated skin contact with this material may cause an allergic skin reaction.

Eye Contact: May cause irritation and redness of the eye tissue.

Ingestion: Swallowing is expected to cause drowsiness and dizziness, weakness, nausea and vomiting. Causes irritation of the tissues of the mouth, throat and digestive tract. Onset of symptoms may be delayed. Aspiration of the liquid into the airways during swallowing or vomiting may be harmful to the lungs and respiratory tract.

4.3 Indication of any immediate medical attention and special treatment needed:

Emergency medical attention is necessary if asthma symptoms develop.

Section 5: Fire-fighting Measures

5.1 Extinguishing media:

Carbon dioxide, dry chemical powder, dry sand, alcohol-resistant foam. Alcohol resistant foams are preferred for large fires. Use water spray to cool fire-exposed containers.

Unsuitable extinguishing media: High volume water jet. Exercise caution when using water since the reaction between water and hot TDI-based isocyanates can be vigorous and will generate CO_2 gas.

5.2 Special hazards arising from the product:

Flammable liquid and vapor (Flash point 26°C). Can release vapors that form explosive mixtures with air.
May accumulate flammable vapors in the storage container.
Solvent vapors are heavier than air and may travel to a source of ignition and flash back to a leak or open container.
During a fire, products of combustion may include toxic hydrogen cyanide, isocyanate vapor, carbon monoxide, carbon dioxide, nitrogen oxides and dense smoke.
Reacts vigorously with water at high temperatures.
Closed containers may rupture violently when heated or contaminated with water.
During a fire, TDI may undergo uncontrolled exothermic polymerization causing pressure in closed containers.

5.3 Special protective equipment and precautions for firefighters:

As for any fire, evacuate the area and fight the fire from a safe distance. Firefighters must wear full protective equipment including self-contained breathing apparatus with chemical protection clothing when firefighters are exposed to decomposition products from this material.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment, including an appropriate respirator as indicated in Section 8.
Notify site management of the release of a hazardous material.
Call Emergency telephone numbers (SDS Section 1.4) for assistance or advice.
Flammable liquid and vapor, extinguish or remove sources of ignition, heat, sparks. Use non-sparking tools for cleaning up.
Isolate spill area, preventing entry by unauthorized and unprotected persons.
Ventilate area of spill.
Do not touch or walk through spilled material.
Stop the leak if you can do it without risk.
When cleaning with Decontamination solution, harmful gases may evolve; ensure adequate ventilation or wear a respirator.

6.2 Environmental precautions:

Avoid releases to the environment and prevent material from entering domestic sewers, natural waterways, or storm water management systems.

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6.3 Methods and material for containment and cleaning up:

Immediately shut off the leak if it is safe to do so. Contain the spill with dry earth, sand, vermiculite, sawdust or suitable commercial absorbent material (e.g. cross-linked polymer, universal binder).
Shovel into open-top drums or plastic bags for further decontamination, if necessary. Do not seal drums or containers.
Neutralize small spills with Decontamination solution.
Never return spills in original containers for re-use.

Wash area with one of the following Decontamination solutions:
Formulation A: Liquid surfactant 0.2% to 2%; Sodium carbonate 5% to 10%; Water to make up to 100%.
Formulation B: Liquid surfactant 0.2% to 2%; Concentrated ammonia 3% to 8%; Water to make up to 100%.
Formulation C: Ethanol, isopropanol or butanol 50%; Concentrated ammonia 5%; Water to make up to 100%.

Formulation B reacts faster than Formulation A.
Formulation C is especially suitable for cleaning of equipment from unreacted isocyanate and neutralizing under freezing conditions.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Before handling, it is important that engineering controls are operating; protective equipment requirements and personal hygiene measures are being followed. People working with this chemical should be properly trained regarding its hazards and its safe use.
Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.
Do not breathe vapors, fumes, spray mist or dusts from this material.
Wear respiratory protection when handling heated product or if spraying.
Use only in a well-ventilated area.
Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Take action to prevent static discharges.
Wear protective gloves, protective clothing and eye/face protection.
Take off contaminated work clothing immediately, clothing wet with isocyanate material must not stay in contact with skin.
Contaminated work clothing must not be allowed out of the workplace.
Do not reseal containers if contamination of containers is suspected.
Keep containers tightly closed when not in use.
Assume that empty containers contain residues which are hazardous (flammable and dangerous to health).
Keep away from food and drink.
Wash hands and exposed skin before eating, drinking or smoking and at the end of the workshift.

Refer to directives and regulations for instructions on the safe handling, employee training, monitoring and enforcement procedures for isocyanates [e.g. US Department of Labor, OSHA Directive # CPL 03-00-017 National Emphasis Program – Occupational Exposure to Isocyanates. Ontario Designated Substances Regulation-Isocyanates].

7.2 Conditions for safe storage:

Store in a dry, well-ventilated area, out of direct sunlight and away from heat, sources of ignition and incompatible materials.
Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.
Store in a place accessible by authorized persons only.
Keep containers tightly closed.
Recommended storage temperature: 0 - 30°C (32 – 86°F).
Protect from moisture/humidity; may react with water producing CO_2 gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed.
Do not re-seal contaminated containers.
Nitrogen blanketing open containers is recommended to minimize oxidation and keep out moisture.
Store product in its original container.
Incompatible with copper and copper alloys, brass and bronze and galvanized surfaces.

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Section 8: Exposure Controls / Personal Protection

8.1 Control parameters:

Occupational Exposure Limits: Consult local authorities for acceptable exposure limits.

Ingredient	ACGIH® TLV®	U.S. OSHA PEL	Other Exposure Limits
Toluene diisocyanate homopolymer	Not established	Not established	Not established
n-Butyl acetate	50 ppm 150 ppm STEL	150 ppm	NIOSH REL: 150 ppm 200 ppm STEL 1700 ppm IDLH
Toluene diisocyanate (TDI)	0.001 ppm STEL 0.005 ppm (Inhalable fraction and vapor)	0.005 ppm STEL 0.02 ppm, Ceiling	Ontario (Canada): 0.005 ppm 0.02 ppm Ceiling Designated Substance NIOSH IDLH: 2.5 ppm
Some jurisdictions have specific regulations for isocyanates. These regulations may include requirements for medical surveillance programs, including pre-employment and pre-placement examinations, periodic medical examinations, clinical tests, health education and record keeping. Obtain detailed information from the appropriate government agency in the relevant jurisdiction.			

8.2 Engineering controls:

Handle product in closed system or area provided with appropriate exhaust ventilation.
Handle in accordance with good industrial hygiene and safety practice.
Ensure regular cleaning of equipment, work area and clothing.
Curing ovens must be properly ventilated to prevent emissions of isocyanate monomer into the workplace.
Monitor the workplace air for the presence of isocyanate and n-butyl acetate vapors and fumes.

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection. Have equipment available for use in emergencies such as spills or fire.

8.3 Individual protection measures:

Eye/Face protection: Wear chemical safety goggles. Wear a face-shield or full-face respirator when needed to prevent exposure to liquid splashes, vapor, mist or fume.

Skin protection: Wear chemical protective gloves, suit, and boots to prevent skin exposure. General purpose butyl rubber gloves may be used to minimize dermal exposures to this material and for cleaning and maintenance operations. Resistance of specific materials can vary from product to product; evaluate resistance under conditions of use and maintain clothing carefully. Contact safety supplier for specifications.

Respiratory protection: Approved respiratory protective equipment (RPE) is required. An approved air-purifying, full-facepiece respirator (gas mask) or supplied-air respirator that has a full facepiece must be available in case of accidental releases of isocyanates.

A respiratory protection program that meets the regulatory requirement, such as OSHA's 29 CFR 1910.134, ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4-2002, must be followed whenever workplace conditions warrant a respirator's use.

NIOSH Recommendations for TDI concentrations in air: **IDLH (Immediately Dangerous to Life or Health) for TDI =2.5 ppm**
At any detectable concentration: (APF = 10,000) self-contained breathing apparatus that has a full facepiece and is operated in a pressure- demand or other positive-pressure mode; any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.

Other protection: Safety shower, hand-wash station and eye-wash fountain readily available in the immediate work area. Follow the applicable code for medical surveillance program indicated for isocyanates.

Environmental exposure controls: Store finished products in closed containers (e.g. bulk tanks, drums, cans).
All waste products are assumed to be collected and returned for re-processing or incineration.
A leak prevention plan is needed to prevent low level continual releases.

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Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:	
Appearance:	Liquid. Pale yellow or colorless.
Odor:	Characteristic sweet-solvent odor of butyl acetate.
Odor threshold:	Not available
pH:	Not available
Melting point/freezing point:	Not available
Initial boiling point and boiling range:	128°C (262.4°F)
Flash point:	26°C (78.8°F)
Evaporation rate:	Not available
Flammability:	Flammable liquid
Upper/lower flammability or explosive limits:	LEL: 1.2% n-Butyl acetate UEL: 7.5% n-Butyl acetate
Vapor pressure:	0.014 hPa @ 20°C for TDI 10 mmHg at 20°C (68°F) for n-butyl acetate
Vapor density:	6 approximate (air = 1) for TDI
Relative density:	1.09 (water = 1)
Solubility (ies):	Insoluble in water; reacts with water
Partition coefficient (n-octanol/water):	Not available; reacts with water
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Dynamic: 500 - 1800 mPa s @ 25°C

Section 10: Stability and Reactivity

10.1 Reactivity:

Reacts with water, Amines, Strong bases, Alcohols, Metal compounds, Copper alloys.

10.2 Chemical stability:

Product decomposes slowly when stored at controlled room temperature and away from incompatible materials. Decomposition is accelerated at elevated temperatures.

10.3 Possibility of hazardous reactions:

Contact with water or humidity may cause a slow reaction, forming carbon dioxide which could rupture closed containers. TDI may undergo uncontrolled exothermic polymerization upon contact with incompatible materials, and at elevated temperatures. Polymerization evolves heat and pressure. The resulting pressure build-up may rupture closed containers.

10.4 Conditions to avoid:

Avoid moisture, temperatures above 40°C and freezing temperatures.
Avoid unintended contact with polyols, the polymerization reaction generates heat and evolves CO_2 gas.

10.5 Incompatible materials:

Strong bases (e.g. sodium hydroxide), Tertiary Amines (e.g. trimethylamine), Polyols, Alcohols, Acids - May react violently with generation of heat.

Metal compounds (e.g. organotin catalysts, copper, zinc, aluminum compounds) - May polymerize with the generation of heat and pressure.

Strong oxidizing agents (e.g. nitric acid, peroxides, perchlorates) – Violent reaction, risk of fire and explosion.

Water – Hydrolyses in water. Reacts slowly, forming carbon dioxide which could rupture closed containers.

Dissolves rubber, some plastics, resins and coating materials.

10.6 Hazardous decomposition products:

By thermal decomposition and combustion, product may generate nitrogen oxide, hydrogen cyanide and isocyanate vapors.

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Section 11: Toxicological Information

11.1 Information on toxicological effects:

Likely routes of exposure:
Inhalation of aerosols or vapor. Skin contact. Eye contact.

Acute health effects:
Inhalation: Data not available for the mixture.
In animal studies, 1 hour exposure to <17 ppm TDI monomer, animals showed signs of lung damage (hemorrhagic and fluid-filled).

Skin: Data not available for the mixture.
In animal studies, application of TDI caused delayed dermal irritation and reversible skin lesions.
TDI was not acutely toxic by the dermal route with the LD_{50} >9400 mg/kg.

Ingestion: Data not available for the mixture.

11.2 Acute Toxicity Data

Ingredient	LD_{50} Oral	LD_{50} Dermal	LC_{50} Inhalation (4-hour)
Toluene diisocyanate homopolymer	Not available	Not available	Not available
n-Butyl acetate	14130 mg/kg (rat)	>14112 mg/kg (rabbit)	>1800 ppm (rat) as vapor
Toluene Diisocyanate (TDI)	4130 mg/kg (rat)	>9400 mg/kg (rabbit)	Vapor: 0.48 mg/L (66 ppm) 1-hour (rat) Aerosol: 350 mg/m^3 4-hour (rat)

Skin corrosion / irritation
Data not available for the mixture.
In a study with similar TDI isomers, TDI caused irritation and edema in rabbits. (test according to OECD guideline 404)

Serious eye damage / irritation
Data not available for the mixture.
In animal studies, TDI caused moderate to severe corneal opacity.
Eye irritation was reported in humans at vapor concentrations of 0.05 ppm.

11.2 Acute Toxicity Data

STOT (Specific Target Organ Toxicity) – Single exposure
Data not available for the mixture.
Inhalation of n-butyl acetate causes irritation to the respiratory tract based on human exposures.
Inhalation of n-butyl acetate concentrations above 1500 ppm has caused dose-related depression of the central nervous system.
Respiratory irritation was reported in humans at 0.1 ppm of TDI vapor or mist. Single exposure could cause severe, permanent respiratory impairment. TDI has also been reported to cause reactive airways dysfunction syndrome (RADS).

Aspiration hazard
Data not available. Aspiration of the liquid into the airways during swallowing or vomiting may be harmful to the lungs and respiratory tract.

11.3 Information on delayed and chronic health effects:

STOT (Specific Target Organ Toxicity) – Repeated exposure
Data not available for the mixture.
From inhalation of TDI: Long-term, low-level exposure may cause severe, permanent respiratory impairment.
Rats (inhalation) NOAEC = 0.05 ppm (2 years)

Sensitization - respiratory and/or skin
May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Isocyanates are known to cause skin and respiratory sensitization in humans. Animal tests have indicated that respiratory sensitization can result from skin contact with diisocyanantes. Symptoms may initially appear to be a cold or mild hay fever; severe asthmatic symptoms can develop and include wheezing, chest tightness, shortness of breath, difficulty breathing and/or coughing. Fever, chills, general feelings of discomfort, headache and fatigue can also occur. Symptoms may occur immediately upon exposure or may be delayed. Sensitized people who continue to work with isocyanates may develop symptoms sooner after each exposure. The number and severity of symptoms may increase. TDI and other isocyanates may also cause hypersensitivity pneumonitis, another allergic lung disease, which is characterized by symptoms such as shortness of breath, fever, tiredness, non-productive cough, and chills.

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11.3 Information on delayed and chronic health effects:

Carcinogenicity

Data not available for the mixture.
TDI is possibly carcinogenic to humans based on animal information.
The International Agency for Research on Cancer (IARC) has determined there is sufficient evidence for the carcinogenicity of TDI (2,4-TDI, 2,6-TDI and the mixtures of these isomers) in experimental animals.
The International Agency for Research on Cancer (IARC) has concluded that this chemical is possibly carcinogenic to humans (Group 2B) based on animal information.
The American Conference of Governmental Industrial Hygienists (ACGIH) has designated this chemical as not classifiable as a human carcinogen (A3).
The US National Toxicology Program (NTP) has listed this chemical as reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Data not available for the mixture.
Development of offspring: Data for TDI in rats: NOAEL = >0.1 ppm (maternal and developmental toxicity, in rats)
Fertility: Data for TDI in rats: NOAEC = >0.3 ppm (2 generation reproduction toxicity study, in rats)
Effects on or via lactation: Data not available

Germ cell mutagenicity

Data not available for the mixture.
Not classifiable for germ cell mutagenicity.
Evidence from *in vivo* animal tests is negative for mutagenicity.
Evidence from *in vitro* tests is equivocal.
TDI is insoluble and reacts with water making it difficult to perform standard *in vitro* test methods.

Interactive effects

Data not available

Section 12: Ecological Information

12.1 Toxicity:

Data not available for the mixture.

12.2 Persistence and degradability:

Data not available for the mixture.
TDI is rapidly hydrolysed in aqueous solution, Half-life (DT_{50}): 0.5 minute (at 25°C)

12.3 Bioaccumulative potential:

Data not available for the mixture.

12.4 Mobility in soil:

Data not available for the mixture.
Hydrolyses to form water-insoluble compounds. Low mobility in soil.

Section 13: Disposal Considerations

13.1 Disposal methods:

Do NOT discard into any sewers, on the ground or into any body of water.
Store material for disposal as indicated in Section 7 Handling and Storage.

Dispose of waste in accordance with relevant national, regional and local environmental control provisions.
RCRA (USA) - Toluene diisocyanate may be classified as Reactive waste and Toxic waste.
Environment Canada - Toluene diisocyanate Hazardous waste and Hazardous Recyclable Material.

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Section 14: Transport Information

14.1 U.S. Hazardous Materials Regulation (DOT 49CFR):
UN1866

14.2 Shipping name:
RESIN SOLUTION, FLAMMABLE

14.3 Transport hazard class(es):
Class 3

14.4 Packing group:
PG III

14.5 Environmental hazards:
Hazardous substance RQ Toluene diisocyanate (TDI) - 100 lb (45.4 kg)
n-butyl acetate 5000 lb (2270 kg)

14.6 Special precautions for user:
Contains isocyanates. Keep away from moisture and water.
May cause allergy or asthma symptoms or breathing difficulties if inhaled. Do not breathe vapors, fumes or spray.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
Noxious liquid substances Category Y
Follow IMO regulations for transporting bulk shipments.

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

USA

TSCA Status-
TSCA Section 8(b), Inventory: all substances listed as “ACTIVE”

Toluene Diisocyanate 26741-62-5:
TSCA Action plan Chemicals
TSCA Section 4(e) testing list
TSCA Section 5 (a)(2), SNUR
TSCA Section 12(b) Export Notification
TSCA Section 8(a), Chemical data reporting
TSCA Section 8(d), Health and Safety reporting

SARA Title III :
Sec. 313 Toluene 2,4- diisocyanate (TDI), 0.1% de minimis
CERCLA RQ Toluene 2,4- diisocyanate (TDI) 100 lbs (45.4kg)
n-butyl acetate 5000 lb (2270 kg)

Clean Air Act – Hazardous Air Pollutants: Toluene 2,4- diisocyanate, n-butyl acetate**:**
Accidental Release Prevention – Toxic substances
HON Rule SOCMI Chemicals
VOC’s

State:
California Prop. 65 – Carcinogen (TDI)
Right-to-know lists in Massachusetts, New Jersey, Pennsylvania

Canada

NSNR Status:
Substances listed on the on the DSL.

NPRI:
Toluene 2,4- diisocyanate (TDI) Part 1 substance

Canadian Environmental Protection Act:
Toluene 2,4- diisocyanate - Environmental Emergencies Schedule 1, Part 1
Toluene 2,4- diisocyanate – Pollution Prevention (P2) Plan

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Mexico

Pollutant Release and Transfer Register:
Reporting Emissions Threshold Quantity TDI: 100 kg/year

International Inventories:

Australia:	Substances listed on the Inventory of Chemical Substances (AICS).
China:	Substances listed on the Chemical Inventory (IECSC).
European Union:	Substances listed on EINECS of other EC lists (Toluene diisocyanate homopolymer 618-500-8).
Japan:	Substances listed on the inventory Existing and New Chemical Substances (ENCS).
Korea:	Substances listed on the inventory - Existing and Evaluated Chemical Substances.
Mexico:	TDI and n-butyl acetate are listed on the inventory (INSQ).
New Zealand:	Substances listed on the Chemical Inventory (NZIoC).
Philippines:	Substances listed on the Inventory of Chemicals and Chemical Substances (PICCS).
Taiwan:	Substances listed on the inventory (TCSI).
Turkey:	TDI and n-butyl acetate are listed on the Control of Chemicals Inventory.
Thailand:	TDI and n-butyl acetate are listed on the inventory (TECI).
Vietnam:	Substances listed on the national chemicals inventory (NCI).

Section 16: Other Information

Revision date:
November 27, 2019

Revision summary:
Not applicable

References and sources for data:
CCOHS, Cheminfo
ECHA, European Chemicals Agency
HSDB® Hazardous Substances Data Bank, US National Library of Medicine
NIOSH, Pocket Guide to Chemical Hazards.
RTECS, Registry of Toxic Effects of Chemical Substances
Registration dossier for TDI mixed isomers according to REGULATION (EC) No 1907/2006

Legend to abbreviations:
ACGIH® – American Conference of Governmental Industrial Hygienists
GHS- Globally Harmonized System for Classification and Labeling.
IDLH – Immediately Dangerous to Life or Health
LD_{50}- Median lethal dose; the dose causing 50 % lethality
NIOSH-National Institute for Occupational Safety and Health
OEL– Occupational exposure limit
OSHA - Occupational Safety and Health Administration
PEL – Permissible Exposure Limit
TWA – Time weighted average
TLV® - Threshold Limit Value

Supplier Note: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.