

1. IDENTIFICATION

Product identifier

Product Name UltraSpartic 100 Part B

Other means of identification

Part Number(s) 231105, 231109

Recommended use of the chemical and restrictions on use

Recommended use No information available

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

ULTRA DURABLE TECHNOLOGIES
 355 6th Ave. North
 Waite Park, MN 56387
 320-258-2266

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

Chemical Name or Synonym:

HDI HOMOPOLYMER; HDI OLIGOMER; ALIPHATIC ISOCYANATE

2. HAZARDS IDENTIFICATION

Classification

Acute Toxicity	Category 4
Skin Sensitization	Category 1
STOT SE	Category 3

Warning



Hazard-determining components of labeling

Hexamethylene diisocyanate oligomers, Isocyanurate
 hexamethylene-di-isocyanate

Hazard statements

Harmful if inhaled.
 May cause an allergic skin reaction.
 May cause respiratory irritation.

Precautionary Statements**Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray.
 In case of inadequate ventilation wear respiratory protection.
 Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF ON SKIN: Wash with plenty of soap and water.
 If skin irritation or rash occurs: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard description

CAUTION! HARMFUL IF INHALED. MAY CAUSE SKIN, EYE AND RESPIRATORY TRACT IRRITATION. POSSIBLE SENSITIZER. REACTS WITH COMMON MATERIALS INCLUDING WATER, ALCOHOLS, BASES AND AMINES RELEASING LARGE AMOUNTS OF CARBON DIOXIDE.

Classification system:**NFPA ratings (scale 0 - 4)**

Health = 2
 Fire = 1
 Reactivity = 1

HMIS-ratings (scale 0 - 4)

HEALTH	2
FIRE	1
REACTIVITY	1

Health = 2
 Fire = 1
 Reactivity = 1

Other hazards

Combustible liquid.

On contact with water carbon dioxide is released.

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens. Asthmatic sensitization can occur from a single large inhalation exposure or from repeated lower inhalation exposures. Strict observation of exposure limits is essential (see Section 8).

Results of PBT and vPvB assessment

PBT No.
 vPvB No.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Substances**CAS No. Description**

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Identification number(s)

EC number: 931-274-8

Chemical components		
CAS: 28182-81-2 EC number: 931-274-8	Hexamethylene diisocyanate oligomers, Isocyanurate	100%
CAS: 822-06-0 EINECS: 212-485-8	hexamethylene-di-isocyanate	< 0.2%

Additional information

Hazardous impurities: Hexamethylene diisocyanate (CAS : 822-06-0) : < 0.2 %
For the wording of the listed hazard phrases refer to section 16.

4. FIRST AID MEASURES

Description of first aid measures**General information**

Immediately remove any clothing soiled by the product. Use appropriate protective equipment when treating a contaminated person. Place contaminated clothing in a sealed bag for disposal. In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Move the person away from the contaminated area. Fresh air and rest. Seek immediate medical advice. Show this sheet to the doctor.

After skin contact

Wash with soap and water. Wash immediately and thoroughly for a prolonged period (at least 15 minutes). In case of inflammation (redness, irritation, ...) obtain medical attention.

After eye contact

Immediately rinse with plenty of running water for a prolonged period, (at least 15 minutes) while keeping the eyes wide open. If irritation persists, consult a doctor. Show this sheet to the doctor.

After swallowing

NEVER attempt to induce vomiting. Rinse mouth out with water. Do not give anything to drink. If necessary seek medical advice. Show this sheet to the doctor.

Most important symptoms and effects, both acute and delayed**Symptoms**

No further relevant information available.

Danger

Skin contact may aggravate existing skin disease. Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

Indication of any immediate medical attention and special treatment needed

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

5. FIRE-FIGHTING MEASURES

Extinguishing media**Suitable extinguishing agents**

Foam
Powders
Carbon dioxide
Dry chemical

For safety reasons unsuitable extinguishing agents

Water

Special hazards arising from the substance or mixture

Combustible.
During combustion toxic vapors are released.
Under fire conditions, corrosive fumes are emitted: oxides of nitrogen oxides of carbon. Reacts with water releasing large amounts of carbon dioxide which may cause pressure build-up in confined spaces.

Advice for firefighters**Protective equipment**

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Additional information

Stay upwind. Evacuate the personnel away from the fumes.

In case of fire close by

Cool down the containers/equipment exposed to heat with a water spray. Ensure that there is NO direct contact between the water and the product. Do not breathe fumes. Do NOT attempt to fight the fire without suitable protective equipment. If there is a fire close by and if packaging has not been damaged: Use suitable extinguishers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures**Personal precautions**

Do not breathe gas.
 Avoid any direct contact with the product.
 Do NOT approach from DOWNWIND.
 Do NOT attempt to take action WITHOUT suitable protective equipment.
 Self-contained breathing apparatus.
 Wear fully protective suit.
 Keep people at a distance and stay upwind.
 Mark out the contaminated area with signs and prevent access to unauthorized personnel.

Environmental precautions**Environmental precautions**

Contain the spilled material by binding. Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up**Methods for cleaning up**

Pump up the product into a spare container suitably labelled.
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
 Wash contaminated area with large amounts of water.
 Recover the cleaning water for subsequent disposal.
 Dispose contaminated material as waste according to item 13.
 Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

Reference to other sections

See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on safe handling**

Ensure good ventilation/aspiration at the workplace.
 Avoid contact with water or humidity.
 Avoid any direct contact with the product.
 Any measure to eliminate exposure should be considered.
 Very high level of containment required, except for short term exposures e.g. taking samples (industrial use condition).
 Comply with instructions for use (refer to technical sheet).

Conditions for safe storage, including any incompatibilities

Storage

The floor of the depot should be impermeable and designed to form a water-tight basin.
 Store in cool, dry conditions in well sealed receptacles.
 Store receptacle in a well ventilated area.
 Store away from incompatible materials.

Requirements to be met by storerooms and receptacles

Suitable material for receptacle and pipe	Epoxy-coated steel.
Unsuitable material for receptacle	Polystyrene.
Store only in unopened original receptacles.	Metallic drums.
Storage tank with a dry nitrogen blanket.	

Packaging materials recommended

Suitable material for receptacle	Aluminum.
Suitable material for receptacle	Steel.
Unsuitable material for receptacle	Copper.
Unsuitable material for receptacle	Tin.

Specific end use(s) No further relevant information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with limit values that require monitoring at the workplace

The recommended limits SHOULD NOT be exceeded. Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

822-06-0 hexamethylene-di-isocyanate	
REL	Short-term value: C 0.14* mg/m ³ , C 0.02* ppm
TLV	Long-term value: 0.035 mg/m ³ , 0.005 ppm *10-min 0.034 mg/m ³ , 0.005 ppm
28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate	

TLV (Threshold Limit Value established by ACGIH)		
822-06-0	hexamethylene-di-isocyanate	0.005 ppm

NIOSH-Ca (National Institute for Occupational Safety and Health)	
822-06-0	hexamethylene-di-isocyanate

Exposure controls

Personal protective equipment

General protective and hygienic measures

Ensure good ventilation of the workstation.
 Safety shower.
 Eye wash.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Store protective clothing separately.
 Shower or take a bath at the end of work.

Breathing equipment

When using a spray-gun, wear: Self-contained breathing apparatus.
 In the event of insufficient ventilation: Self-contained breathing apparatus.
 When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Protection of hands

Protective gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

Suitable materials also with prolonged, direct contact (protective index 6, corresponding > 480 minutes of permeation time):
Nitrile rubber, NBR Fluorocarbon rubber (Viton)
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye protection

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area. Safety glasses.

Body protection

Protective work clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties**General Information****Appearance**

Form	Liquid.
Color	Colorless to pale yellow.
Odor	Odorless.
pH-value	Not applicable (reacts with water).

Change in condition

Melting point/Melting range	< - 20 °C
Boiling point/Boiling range	>220 °C (>428 °F) (at 1.33hPa) > 203 C (397 F) at 1 mmHg

Flash point	228 °C (442 °F) (EN 22719)
Flammability Class	WILL BURN
Ignition temperature	460 °C (860 °F) (Spontaneous ignition temp)
Danger of explosion	Not explosive.
Explosion limits	
Oxidizing properties	Not oxidizing.
Density at 25 °C (77 °F)	1.16 g/cm ³ (9.68 lbs/gal)
Solubility in / Miscibility with	
Water	Reacts.
Ketones	Soluble.
Aromatic hydrocarbons	Soluble.
Esters	Soluble.
Segregation coefficient (n-octanol/water)	Not applicable (reacts with water and/or octanol).
Viscosity	
Dynamic at 25 °C (77 °F)	1200 mPas
Other information	No further relevant information available.

10. STABILITY AND REACTIVITY

Reactivity

No further relevant information available.

Chemical stability

Thermal decomposition / conditions to be avoided: Stable at ambient temperature.

Possibility of hazardous reactions

Reacts with

Alcohols.

Amines.

Bases.

Protic solvents.

Water and aqueous solutions. with a great release of CO₂, and hence a risk of a pressure build-up in confined areas, and forms an insoluble solid precipitate.

Reacts with strong acids

Reacts with strong oxidizing agents

Conditions to avoid

Extreme heat.

Open flame.

Moisture.

Ignition sources.

Incompatible materials

No further relevant information available.

Hazardous decomposition products

On thermal decomposition (pyrolysis) releases

Toxic gases.

Carbon Dioxide.

Nitrogen Oxides.

11. TOXICOLOGICAL INFORMATION**Information on toxicological effects****Acute toxicity****LD/LC50 values**

Harmful by inhalation.

To comply with regulatory guidelines, the substance was tested in a form (i.e., specific particle size distribution) that is different from the form in which the substance is placed on the market and in which it can reasonably be expected to be used. The acute inhalation toxicity of the substance is due to its local action on the distal part of the respiratory tract. As, in the conditions in which the product can reasonably be expected to be used, only a small fraction of the aerosols formed may reach this part of the respiratory tract, a correction has been made to take this difference into consideration. Based on our Expert judgment, the classification Acute inhalation toxicity category 4 is justified.

Not harmful by skin contact.

Not harmful if swallowed.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate		
Oral	LD0	> 2500 mg/kg (rat) (OECD 423 (female))
Dermal	LD0	> 2000 mg/kg (rabbit) (OECD 402) > 2000 mg/kg (rat) (OECD 402)
Inhalative	LC50/4h	0.390 mg/l (rat) (OECD 403 (female))

Primary irritant effect**On the skin**Not classified as irritating to skin.
(OECD 404)
(rabbit)**On the eye**Not classified as irritating to eyes.
(OECD 405)
(rabbit)**Inhalation**

May cause respiratory irritation.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate		
Inhalative	NOAEC/6h	3 mg/m ³ (rat) ((OECD TG 403) (TRGS))

Additional toxicological information

Carcinogenic categories

OSHA-Ca (Occupational Safety & Health Administration)
Not listed.

Sensitization

No pulmonary sensitization was observed in guinea pigs after either intradermal injection or inhalation induction with HDI polyisocyanates.
There is no indication from reports in exposed workers that the substance can cause respiratory sensitization, if the risk management measures are respected.
May cause sensitization by skin contact.

Carcinogenicity

Not considered to be carcinogen.

822-06-0 hexamethylene-di-isocyanate		
Inhalative	NOAEC Carc	0.164 ppm (rat) (OECD 453)

Mutagenicity

Is not considered genotoxic.

Reproductive toxicity

Is not considered hazardous to the reproduction.

822-06-0 hexamethylene-di-isocyanate		
Inhalative	NOAEC Dvlp/Tera Tox NOAEC Maternal Tox NOEC Fert	0.3 ppm (rat) (OECD 414) 0.005 ppm (rat) (OECD 414) 0.3 ppm (rat) (OECD 422)

12. ECOLOGICAL INFORMATION**Toxicity****Aquatic toxicity**

The product does not have any known adverse effects on the aquatic organisms tested.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate	
EC10/72h (static)	370 mg/l (Desmodemus subspicatus) (EU C.3)
EL50/48h (static)	127 mg/l (Daphnia magna) (EU C.2)
ErC50(0-72h) (static)	> 1000 mg/l (Desmodemus subspicatus) (EU C.3)
LL0/96h	≥ 82.8 mg/l (Brachydanio rerio) (EU C.1)

822-06-0 hexamethylene-di-isocyanate	
EC0/48h (static)	≥ 89.1 mg/l (Daphnia magna) (EU C.2)
ErC50(0-72h) (static)	> 77.4 mg/l (Desmodemus subspicatus) (EU C.3)
LC0/96h (static)	≥ 82.8 mg/l (Brachydanio rerio) (EU C.1)
NOEC/72h (static)	11.7 mg/l (Desmodemus subspicatus) (EU C.3)

Persistence and degradability

The product is not readily biodegradable.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate	
BOD28	1 % (bacteria) ((EU C.4-E) (Unpublished report))
DT50	3 h (Photolysis) ((25 °C) (AOPWIN v1.92) (Internal evaluation))
	7.7 h (Hydrolysis) ((23 °C) (ASTM D4666) (Internal evaluation))

822-06-0 hexamethylene-di-isocyanate	
BOD28	42 % (bacteria) (EU C.4-D)
DT50	25 °C, 48.44 h (Photolysis) (AOPWIN v1.92)
	23 °C, 0.23 h (Hydrolysis) (ASTM D4666)

Behavior in environmental systems**Components**

No information available.

Bioaccumulative potential Not potentially bioaccumulable.
Log Pow, see section 9.

28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate	
BCF	3.2 (fish) (BCFWIN v. 2.17)

822-06-0 hexamethylene-di-isocyanate	
BCF	58 (fish) (BCFWIN v.2.17)

Mobility in soil	
28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate	
Log Koc	7.8 (.) (PCKOC v1.66)
822-06-0 hexamethylene-di-isocyanate	
Log Koc	5861 (.) (PCKOC v1.66)

Other information: Formation of insoluble polyurea and/or amine derivative.

Ecotoxicological effects

Behavior in sewage processing plants	
28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate	
EC50/3h (static)	3828 mg/l (activated sludge) (OECD 209)
822-06-0 hexamethylene-di-isocyanate	
EC50/3h (static)	842 mg/l (bacteria) (OECD 209)

Results of PBT and vPvB assessment

PBT No.
vPvB No.
Other adverse effects No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation Discharging waste into rivers and drains is forbidden.
Incinerate at a licensed installation.
Disposal must be made according to federal, state, and local regulations.

Waste disposal key EPA Hazardous Waste - NO

Uncleaned packagings Contaminated packaging materials must be disposed of in the same manner as the product.

Recommendation Allow it to drain thoroughly.
Thoroughly emptied and clean packagings may be recycled.
Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

UN Number NOT regulated.
DOT, ADR, ADN, IMDG, IATA -

Proper shipping name (Technical Name) NOT regulated.
DOT, ADR, ADN, IMDG, IATA -

Transport hazard class(es)
DOT, AND Class -

ADR, IMDG, IATA Class NOT regulated.

Packing group
DOT, ADR, IMDG, IATA -

Environmental hazards Not applicable.

Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information	The above regulatory prescriptions are those valid on the date of publication of this sheet. However, given the possible evolution of transport regulations for hazardous materials and in the event of the SDS in your possession dating back more than 12 months, it is advisable to check their validity with your sales office.

15. REGULATORY INFORMATION

National legislation

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

Sara Section 312

Fire Hazard	NO
Reactive Hazard	YES
Release of Pressure	NO
Acute Health Hazard	YES
Chronic Health Hazard	YES

Section 355 (extremely hazardous substances) None of the ingredients are listed.

Section 313 (Specific toxic chemical listings) CERCLA RQ 100 lbs. for 822-06-0
822-06-0 hexamethylene-di-isocyanate

Carcinogenic categories

EPA	Not listed.
IARC	Not listed.
NTP	Not listed.

Inventory status

AICS	All ingredients are listed.
DSL	All ingredients are listed.
NDSL	Not listed.
CIECS	All ingredients are listed.
EINECS	All ingredients are listed.
ELINCS	All ingredients are listed.
ENCS	All ingredients are listed.
KECI	All ingredients are listed.
PICCS	All ingredients are listed.
TSCA	All ingredients are listed.

Legend

EPA - Environmental Protection Agency
IARC - International Agency for Research on Cancer
NTP - National Toxicology Program
AICS - Australian Inventory of Chemical Substances
DSL - Canadian Domestic Substance List
NDSL - Canadian Non-Domestic Substance List
CIECS - Chinese Chemical Inventory of Existing Chemical Substances
EINECS/ELINCS - European EINECS/ELINCS Listing
ENCS - Japan Existing and New chemical Substance List
KECI - Korea Existing Chemical Inventory
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TSCA - Toxic Substances Control Act

Other regulations, limitations and prohibitive regulations

State of California, Proposition 65
Chemicals known to cause cancer Not listed.

Chemicals known to cause reproductive toxicity for females

Not listed.

Chemicals known to cause reproductive toxicity for males

Not listed.

Not listed.

Chemicals known to cause developmental toxicity

Not listed.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Preparation Date	24-Jan-2023
Revision Date	27-Nov-2023
Revision Note	No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Shipping information may vary based upon container size and shipping destination. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. The manufacturer assumes no responsibility for injury to the recipient or third persons, or for any damages to any property resulting from misuse of the product.

End of Safety Data Sheet