

Safety Data Sheet (SDS)
ZeraBrite PART A

SECTION 1: PRODUCT INFORMATION

PRODUCT INFORMATION

Product Identifier: ZeraBrite Part A

Application and Use (Other means of identification): Clear Polyaspartic acid ester coating – Part A

Recommended on use and restriction on use: Two-component polyaspartic acid ester coating

MANUFACTURE (CANADIAN SUPPLIER IDENTIFIER):

Zeraus Products Inc.
250 Rayette Road, Unit 18
Vaughan, Ontario L4K 2G6
Tel: 905-761-9920

EMERGENCY TELEPHONE NUMBERS

Business: (905) 761-9920

24 Hours: (416) 574-5154

SECTION 2: HAZARD IDENTIFICATION

A. GHS Classification

- **Acute toxicity (oral): Category 2**
- **Skin corrosion/irritation: Category 2**
- **Skin sensitization: Category 1B**
- **Chronic aquatic toxicity: Category 2**

B. GHS Label Elements

- o **Hazard Symbols:**



- o **Signal Word: **Warning****

- o **Hazard Statements:**

- H302 Harmful if swallowed
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction

- H411 Toxic to aquatic life with long lasting effects

- o **Precautionary Statements:**

- 1) **Prevention:**

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray
- P264 Wash hands thoroughly after handling
- P272 Contaminated work clothing should not be allowed out of the workplace
- P280 Wear protective gloves/protective clothing/eye protective/face protection

- 2) **Response:**

- P332 + P313 If skin irritation occurs: Get medical advice/attention
- P333 + P313 If skin irritation or a rash occurs: Get medical advice/attention
- P362 Take off contaminated clothing and wash before reuse

- 3) **Storage:**

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed

- 4) **Disposal:**

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

- 5) **In case of Fire:**

- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Wear appropriate protective equipment

- 6) **First Aid:**

- P301 + P312: IF Swallowed: Call a POISON CENTRE or doctor/physician if you feel unwell.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

- C. Other hazard which do not result in classification: (NFPA Classification)**

- o **NFPA grade (0~4 level)**

- **Health: 2 Flammability: 3, Reactivity: 0**

WHMIS 1988 Classification (Canada):

Class D, Division 2, Subdivision B: irritant

TRANSPORTATION OF DANGEROUS GOODS INFORMATION:

Proper Shipping Name: Esters N.O.S. (Ethyl 3-ethoxypropanoate)

Hazard Class: 3

ID Number: UN 3272

SECTION 3: COMPOSITION/INFORMATION OF INGREDIENTS

Ingredients	CAS#	%(weight)
Aspartic Acid, N-N'-(Methylene-4,1-cyclohexandiyl)bis-, 1,1', 4,4'-tetraethyl Ester	136210-30-5	25-75
Aspartic Acid, N-N'-(Methylenebis(2-methyl-4,1-cyclohexandiyl)bis-, 1,1', 4,4'-tetraethyl Ester	136210-32-7	25-75
Ethyl 3-ethoxypropanoate	763-69-9	0-15

SECTION 4: FIRST-AID MEASURES

Eye contact:

- Do not rub your eyes.
- Flush eyes immediately with large amounts of running water for at least 15 minutes while holding eyelids open until irritation subsides. Do not attempt to neutralize with chemical agents. Obtain medical attention immediately.
-

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Wash thoroughly after handling.
- Wash immediately with plenty of soap and water. Remove and clean all contaminated clothing and launder before reuse.

Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- In the case of overexposure, remove to fresh air. Get medical attention if the victim is in respiratory distress.

Ingestion contact

- About whether I should induce vomiting Take the advice of a doctor
- Rinse your mouth with water immediately.
- If swallowed, drink two glasses of water. Do not induce vomiting. The material is corrosive. Do not give anything to mouth to an unconscious person. Get prompt medical attention.

Delayed and immediate effects and also chronic effects from short- and long-term exposure

- Not available

Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

Specific hazards arising from the chemical

- Not available

Special protective actions for fire-fighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Vapour or gas is burned at distant ignition sources can be spread quickly.

Special protective equipment for fire-fighters

- A face shield should be worn
- Use personal protective equipment
- Wear self contained breathing apparatus for fire fighting if necessary

GENERAL HAZARDS: Combustible liquid; may release vapours that form combustible mixtures at or above the flash point. Toxic gases will form upon combustion.

FIRE FIGHTING: Wear NIOSH-approved self-contained breathing apparatus with independent air supply. Wear complete body protective butyl rubber clothing. Personnel in vicinity and downwind should be evacuated.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, and carbon monoxide, various hydrocarbons, phenol.

SECTION 6: ACCIDENTAL RELEASE MEASURES

A. Personal Precautions, protective equipment and emergency procedures

- Must work against the wind, let the upwind people to evacuate
- Move container to safe area from the leak area.

- Remove all sources of ignition.
- Do not direct water at spill or source of leak
- Avoid skin contact and inhalation.

B. Environmental precautions.

- Prevent runoff and contact with waterways, drains or sewers
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill: stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

PROCEDURE IN CASE OF LEAKS:

Prevent spills from entering sewers, watercourses or low areas. Absorb with sand or other absorbent material. Residue may be removed with hot water and detergent. All precautions should be taken when cleaning the spill with solvent.

ENVIRONMENTAL PRECAUTIONS: Avoid discharge to sewers or waterways. Marine Pollutant (Very toxic to aquatic organisms)

SPILL CONTROL AND DISPOSAL: Dispose of sand and rinse water according to municipal, provincial or federal laws for disposal of chemicals.

SECTION 7: HANDLING AND STORAGE

A. Precautions for safe handling

- Wash thoroughly after handling
- Avoid direct physical contact
- Avoid contact with incompatible materials.
- Refer to Engineering controls and personal protective equipment.
- Do not inhale the steam prolonged or repeated.

B. Conditions for safe storage, including any incompatibilities

- Do not use damaged containers
- Do not apply direct heat
- Save applicable laws and regulations.
- Avoid direct sunlight
- Keep in the original container.
- Collected them in sealed container.
- Do not eat, drink or smoke when using this product.
- Store away from water and sewer.

HANDLING STORAGE AND SHIPPING: Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials. Do not handle or store near an open flame, sources of heat, or sources of ignition. Protect material from direct sunlight. This product will accumulate static charges which may cause an incendiary electrical discharge. Use proper grounding procedures. Empty product containers may contain product residue. DO NOT REUSE.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

- **OSHA PEL**
 - Not available
- **ACGIH TLV**
 - Not available

Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposure above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

Personal protective equipment

- **Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapour cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and an organic vapour cartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapour canister.
 - For unknown Concentration or Immediately Dangerous to Life or Health: Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- **Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- **Hand protection**
 - Wear appropriate glove.
- **Skin protection**
 - Wear appropriate clothing.

- **Others**
- Not available

PERSONAL PROTECTION: The selection of personal protective equipment varies depending upon conditions of use. When handling product wear long sleeves, chemical resistant gloves and safety glasses with side shields. Where splashing during mixing may occur wear full face shield. Where concentrations in air may exceed the occupational exposure limits and where engineering work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation. The respirators may not be necessary for handling the materials in outdoor environment. Eye wash station (sink) or shower facility near the job is recommended in case of emergency.

Effect of Overexposure:

INHALATION: Do not heat the material. Vapours or mist generated from heating the material or as from exposure in poorly ventilated areas are irritating and cause nasal discharge. Coughing and discomfort in nose and throat. Prolonged or repeated overexposure may result in lung damage.

EYES: Cause irritation, experienced as pain, with excess blinking and tear production, and seen as extreme redness and swelling of the eye and chemical burns of the eye.

SKIN: Causes severe skin irritation with pain, excess redness and swelling with chemical burns. It may cause skin sensitization. Other than the potential skin irritation, effects noted above acute (short term) adverse effects are not expected from brief skin contact.

INGESTION: Acute (brief exposure): Low toxicity causes irritation. **Chronic (prolonged exposure):** causes burning of mouth, throat, and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst and weakness.

INGESTION: CHRONIC: Refer to acute ingestion.

Toxic effects or reproduction: No
Teratogenicity: No
Mutagenicity: No
Carcinogenicity: No

Acute or chronic exposure should be avoided as it will increase the toxicological problems mentioned in this section and may aggravate respiratory problems. Repeated skin contact may cause a persistent irritation or dermatitis. Repeated inhalation may cause lung damage.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
 Relative Density: 1.08 @23 °C (73 °F)
 Solubility in Water: Insoluble
 Boiling Point: 185 °F
 Freezing/Melting Point: N/A
 Evaporation Rate: n/av
 Vapour Pressure: N/A
 Volatile: (voc): 5 %
 Vapour Density: n/av
 Odour: Chasteristic ester
 Odour Threshold: N/A
 Appearance: Clear liquid

Viscosity: 300 cps @ 23°C (73°F)
Hazardous Air Pollutant: None
Flashpoint and Method: 31.7 °C (89°F) (T.C.C.)
Auto ignition Temperature: N/A
Flammable Limits: N/A
pH: NA
Partition Coefficient (n-octanol/water): N/A
Odour Threshold: No data available
Upper flammability or upper explosive limit: N/A
Lower flammability or lower explosive limit: N/A
Initial boiling point and boiling range: N/A
Decomposition Temperature: N/A

SECTION 10: STABILITY AND REACTIVITY

A. Chemical Stability and Reactivity

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid: Accumulation of electrostatic charges, Heating, Flames and hot surfaces.

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

GENERAL: This product is stable and hazardous polymerization will not occur under normal conditions.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: Excessive heating. Avoid contact with strong acids and alkalis.

HAZARDOUS DECOMPOSITION: carbon monoxide, phenol

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

Ingestion: No data is available on the product itself

Ingestion – Components:

- | | | |
|----------------------------|--------------------|--------------|
| - Aspartic Acid | LD50: >2,000 mg/kg | Species: Rat |
| - Ethyl 3-ethoxypropanoate | LD50: 5,000 mg/kg | Species: Rat |

Inhalation: No data is available on the product itself

Inhalation – Components: N/A

Dermal: No data is available on the product itself

Dermal – Components:

- | | | |
|----------------------------|--------------------|--------------|
| - Aspartic Acid | LD50: >2,000 mg/kg | Species: Rat |
| - Ethyl 3-ethoxypropanoate | LD50: >9,500 mg/kg | Species: Rat |

Sensitization:

May cause sensitization of susceptible persons by skin contact. Did not cause allergic skin reactions when tested in mice.

Skin Corrosion/Irritation:

Extremely corrosive and destructive to tissue

Serious eye damage/eye irritation:

May cause irreversible eye damage

Respiratory or skin sensitization:

N/A

Germ Cell Mutagenicity:

N/A

Carcinogenicity:

N/A

Reproductive toxicity:

N/A

SECTION 12: ECOLOGICAL INFORMATION

- **Aquatic toxicity:** no data available
- **Persistence and degradability:** no data available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

SECTION 14: TRANSPORTATION INFORMATION

Domestic/International Regulation

TDG

UN number: UN 1123

Proper shipping name: Esters, N.O.S. (Ethyl-3-ethoxypropionate)

Class: 3

Packing group: II

IMDG

UN/ID No.: UN 1123

Proper Shipping name: Esters, N.O.S. (Ethyl-3-ethoxypropionate)

Class or Division: 3

Packing group: II

Marine Pollutant: Yes

IATA

UN/ID No.: UN1123

Proper shipping name: Esters, N.O.S. (Ethyl-3-ethoxypropionate)

Class: 3

Packing group: II

SECTION 15: REGULATORY INFORMATION

Aspartic Acid

Regulation list: DSL, TSCA

SECTION 16: OTHER INFORMATION

This SDS is prepared according to the Globally Harmonized System (GHS).

Issue Date: 2017-04-11



ZeraBrite PART B

SECTION 1: PRODUCT INFORMATION

PRODUCT INFORMATION

Product Identifier: ZeraBrite Part B

Application and Use (Other means of identification): Clear Polyaspartic acid ester coating – Part B

Recommended on use and restriction on use: Aliphatic polyisocyanate in solution

MANUFACTURE (CANADIAN SUPPLIER IDENTIFIER):

Zeraus Products Inc.
250 Rayette Road, Unit 18
Vaughan, Ontario L4K 2G6
Tel: 905-761-9920

EMERGENCY TELEPHONE NUMBERS

Business: (905) 761-9920

24 Hours: (416) 574-5154

SECTION 2: HAZARD IDENTIFICATION

D. GHS Classification

- Acute toxicity (oral): Category 4
- Skin corrosion/irritation: Category 4
- Skin sensitization: Category 1B
- Serious Eye Damage: Category 1
- Reproductive toxicity: Category 1

E. GHS Label Elements

- o Hazard Symbols:



- o Signal Word: **Danger**
- o Hazard Statements:
 - H302+H312 Harmful if swallowed or in contact with skin
 - H314 Causes severe skin burns and eye damage
 - H317 May cause an allergic skin reaction
 - H335: May cause respiratory irritation
- o Precautionary Statements:

7) **Prevention:**

- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray
- P264 Wash hands thoroughly after handling
- P270 Do not eat, drink, or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area
- P272 Contaminated work clothing should not be allowed out of the workplace
- P280 Wear protective gloves/protective clothing/eye protective/face protection
- P284 Wear respiratory protection.

8) **Response:**

- P301+P330+P331: IF SWALLOWED: rinse mouth. DO NOT induce vomiting.
- P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304+P340+P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Immediately call a POISON CENTRE/doctor.
- P308+P313: IF exposed or concerned: Get medical advice/attention
- P333+P313: If skin irritation or rash occurs: Get medical advice/attention
- P363+P364: Take off contaminated clothing and wash before reuse

9) **Storage:**

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed

10) **Disposal:**

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

11) In case of Fire:

- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Wear appropriate protective equipment

WHMIS Classification (Canada):

Class D-2B

Class E, corrosive

TRANSPORTATION OF DANGEROUS GOODS INFORMATION:

Other regulated substances, liquid, N.O.S. (contains Hexamethylene 1,6-Diisocyanate)

Hazard Class: 9

ID Number: NA3082

Packing Group: PG 111

SECTION 3: COMPOSITION/INFORMATION OF INGREDIENTS

Ingredients	CAS#	%(weight)
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	95-100
Hexamethylene-1,6-Diisocyanate	822-06-0	<0.3

SECTION 4: FIRST-AID MEASURES

Eye contact:

- Do not rub your eyes.
- Flush eyes immediately with large amounts of running water for at least 15 minutes while holding eyelids open until irritation subsides. Do not attempt to neutralize with chemical agents. Obtain medical attention immediately.
-

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Wash thoroughly after handling.
- Wash immediately with plenty of soap and water. Remove and clean all contaminated clothing and launder before reuse.

Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- In the case of overexposure, remove to fresh air. Get medical attention if the victim is in respiratory distress.

Ingestion contact

- About whether I should induce vomiting Take the advice of a doctor
- Rinse your mouth with water immediately.
- If swallowed, drink two glasses of water. Do not induce vomiting. The material is corrosive. Do not give anything to mouth to an unconscious person. Get prompt medical attention.

Delayed and immediate effects and also chronic effects from short- and long-term exposure

- Not available

Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

Specific hazards arising from the chemical

- Not available

Special protective actions for fire-fighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Vapour or gas is burned at distant ignition sources can be spread quickly.

Special protective equipment for fire-fighters

- A face shield should be worn
- Use personal protective equipment
- Wear self contained breathing apparatus for fire fighting if necessary

GENERAL HAZARDS: Combustible liquid; may release vapours that form combustible mixtures at or above the flash point. Toxic gases will form upon combustion.

FIRE FIGHTING: Wear NIOSH-approved self-contained breathing apparatus with independent air supply. Wear complete body protective butyl rubber clothing. Personnel in vicinity and downwind should be evacuated.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, and carbon monoxide, various hydrocarbons, phenol.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, protective equipment and emergency procedures

- Must work against the wind, let the upwind people to evacuate
- Move container to safe area from the leak area.
- Remove all sources of ignition.
- Do not direct water at spill or source of leak
- Avoid skin contact and inhalation.

Environmental precautions.

- Prevent runoff and contact with waterways, drains or sewers
- If large amounts have been spilled, inform the relevant authorities.

Methods and materials for containment and cleaning up

- Large spill: stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

PROCEDURE IN CASE OF LEAKS:

Extinguish and eliminate source of ignition until area is determined to be free from explosion or fire hazards. Prevent spills from entering sewers, watercourses or low areas. Absorb with sand or other absorbent material (do not use sawdust). Residue may be removed with hot water and detergent. Flush small spills with water.

ENVIRONMENTAL PRECAUTIONS: The product is toxic to aquatic life in liquid form. Avoid discharge to sewers or waterways.

SPILL CONTROL AND DISPOSAL: Dispose of sand and rinse water according to municipal, provincial or federal laws for disposal of chemicals.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

- Wash thoroughly after handling
- Avoid direct physical contact
- Avoid contact with incompatible materials.
- Refer to Engineering controls and personal protective equipment.
- Do not inhale the steam prolonged or repeated.

Conditions for safe storage, including any incompatibilities

- Do not use damaged containers
- Do not apply direct heat
- Save applicable laws and regulations.
- Avoid direct sunlight
- Keep in the original container.
- Collected them in sealed container.
- Do not eat, drink or smoke when using this product.
- Store away from water and sewer.

HANDLING STORAGE AND SHIPPING: Keep container closed. Wear personal protective equipment. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials. Keep away from heat, sparks, open flames and oxidizing agent. Protect material from direct sunlight. This product will accumulate static charges, which may cause an incendiary electrical discharge. Use proper grounding procedures. Empty product

containers may contain product residue. DO NOT REUSE.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

- During spraying, wear suitable respiratory equipment. Wear appropriate respirator when ventilation is inadequate
- Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates that is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Personal protective equipment

○ Respiratory protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapour cartridge(s).
- Any chemical cartridge respirator with a full facepiece and an organic vapour cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapour canister.
- For unknown Concentration or Immediately Dangerous to Life or Health: Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

○ Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

○ Hand protection

- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

○ Skin protection

- Personal protective equipment for the body should be selected based on the tank being performed and the risks involved and should be approved by a specialist before handling the product.

PERSONAL PROTECTION: The selection of personal protective equipment varies depending upon conditions of use. When handling product wear long sleeves, chemical resistant gloves and safety glasses with side shields. Where splashing during mixing may occur wear full face shield. Where concentrations in air may exceed the occupational exposure limits and where engineering work practices or other means of exposure reduction are not adequate, approved respirators may be necessary to prevent overexposure by inhalation. The respirators may not be necessary for handling the materials in outdoor environment. Eye wash station (sink) or shower facility near the job is recommended in case of emergency.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Specific Gravity: 1.15 @23°C (73°F)
Vapour Pressure: n/av
Solubility in Water: Slight
Boiling Point: 285 °C @ 760 mmHg
Freezing/Melting Point: n/av
Viscosity: 1300 cps 23°C (73°F)
Vapour Density: n/av
Evaporation Rate: n/av
Volatile: (voc): zero %
Odour: neutral
Appearance: Pale yellow liquid
Hazardous Air Pollutant: None
Flashpoint and Method: 75 °C (T.C.C.)
Auto ignition Temperature: 350°C
Flammable Limits: 1.1 - 7% by volume
pH: Alkaline (10-11)
Partition Coefficient (n-octanol/water): N/A
Odour Threshold: No Data Available
Upper flammability or upper explosive limit: N/A
Lower flammability or lower explosive limit: N/A

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability and Reactivity

- This material is stable under recommended storage and handling conditions.

Possibility of hazardous reactions

- Hazardous Polymerization will not occur under recommended storage and handling conditions.

Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid: Accumulation of electrostatic charges, Heating, Flames and hot surfaces.

Incompatible materials

- Avoid contact with strong oxidizing agents.
- Avoid extremely reactive or incompatible with the following materials: acids, ammonia, carbon monoxide, carbon dioxide, aldehydes, ketones.

Hazardous decomposition products

- May emit flammable vapour if involved in fire.
- Decomposition products may include the following materials:
 - Carbon dioxide

- Carbon monoxide
- Nitrogen oxides
- phenol

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

Ingestion: No data is available on the product itself

Ingestion – Components:

- Homopolymer of Hexamethylene Diisocyanate LD50: >2,500 mg/kg Rat-Female
- Hexamethylene-1,6-Diisocyanate LD50: >746 mg/kg Rat-Female

Inhalation: No data is available on the product itself

Inhalation – Components: N/A

Dermal: No data is available on the product itself

Dermal – Components:

- Homopolymer of Hexamethylene Diisocyanate LD50: >2,000 mg/kg Rat-Female
- Hexamethylene-1,6-Diisocyanate LD50: >7,000 mg/kg Rat-Female

Sensitization:

May cause sensitization of susceptible persons by skin contact

Skin Corrosion/Irritation:

Extremely corrosive and destructive to tissue

Serious eye damage/eye irritation:

May cause irreversible eye damage

Respiratory or skin sensitization:

N/A

Germ Cell Mutagenicity:

N/A

Carcinogenicity:

N/A

Reproductive toxicity:

N/A

SECTION 12: ECOLOGICAL INFORMATION

- **Aquatic toxicity:** no data available
- **Persistence and degradability:** no data available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

SECTION 14: TRANSPORTATION INFORMATION

Domestic/International Regulation

TDG

UN number: NA3082

Proper shipping name: Other regulated substances, liquid, N.O.S. (contains Hexamethylene 1,6-Diisocyanate)

Class: 8

Packing group: II

Labels: 8

IMDG

UN/ID No.: NA3082

Proper Shipping name: Other regulated substances, liquid, N.O.S. (contains Hexamethylene 1,6-Diisocyanate)

Class or Division: 8

Packing group: II

Label(s): 8

Marine Pollutant: Yes

IATA

UN/ID No.: NA3082

Proper shipping: Other regulated substances, liquid, N.O.S. (contains Hexamethylene 1,6-Diisocyanate)

Class: 8

Packing group: II

Labels: Corrosive

SECTION 15: REGULATORY INFORMATION

Hexamethylene 1,6-Diisocyanate

Regulation list: DSL, TSCA

SECTION 16: OTHER INFORMATION

This SDS is prepared according to the Globally Harmonized System (GHS).

PREPARATION

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