



SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: POLYASPARTIC 930 PART A
PRODUCT CODES: 930

MANUFACTURER: KRETETEK INDUSTRIES INC
STREET ADDRESS: 66 RIVER ROAD
CITY, STATE, ZIP: HUDSON NH 03051

INFORMATION PHONE: 855-573-8383
EMERGENCY PHONE: Chemtrec 800-424-9300
FAX PHONE: 855-573-8383

DATE REVISED: 5/1/23

Chemical Name or Class: Epoxy coating

SECTION 2: HAZARDS IDENTIFICATION

Hazard identification

GHS Classification:

Acute toxicity (inhalation: vapor) Category 1

Carcinogenicity Category 1B

Germ cell mutagenicity Category 1B

Chronic aquatic toxicity Category 3

Skin sensitization Category 1

Aspiration hazard Category 1

Flammable liquids Category 4

Acute toxicity (oral) Category 5

Acute toxicity (dermal) Category 5GHS label elements:

Hazard symbols



Signal words: DANGER

Hazard statements:

H330 Fatal if inhaled

H350 May cause cancer

H340 May cause genetic defects

H412 Harmful to aquatic life with long lasting effects

H317 May cause an allergic skin reaction

H304 May be fatal if swallowed and enters airways

H227 Flammable liquid

H303 May be harmful if swallowed.

H313 May be harmful in contact with skin.

Precautionary statements:

Prevention

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
 P271 Use only outdoors or in a well-ventilated area.
 P284 (In case of poor ventilation) Wear respiratory protection.
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P273 Avoid release to the environment.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. no smoking
 Response:
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P310 Immediately call a POISON CENTER or doctor/physician.
 P320 Specific treatment
 P308+P313 If exposed or concerned: Get medical advice / attention.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P321 Specific treatment
 P362+P364 Take off contaminated clothing and wash before reuse.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P331 Do NOT induce vomiting.
 P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer to Section SDS 5).
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 Storage:
 P403+P233 Store in a well-ventilated place. Keep container tightly closed
 P405 Save by locking.
 P403 Store in a well-ventilated place.
 Disposal:
 P501 Dispose of the contents and containers in accordance with waste-related laws.

SECTION 3: COMPOSITION ON INGREDIENTS

Composition/information on ingredients

136210-30-5	Tetraethyl N,N'-(methylenedi-4,1-cyclohexanediyl)bis(aspartate)	80-90%
64742-95-6	Solvent naphtha (petroleum), light arom.	11-21%
623-91-6	2-Butenedioic acid (E)-, diethyl ester	1-10%
51200-87-4	4,4-Dimethyl-1,3-oxazolidine	1-10%

SECTION 4: FIRST AID MEASURES

Eye Contact: Flush exposed eyes with plenty of water for more than 15minutes. If irritation, pain, swelling, tears, or glaring happens, take medical assistant immediately. Do not rub your eyes. If you wear a contact lenses, remove them first.
 Skin Contact: Remove exposed clothing and wash off exposed area with soap and water. If symptoms like irritation or pain occurs, take medical assistant immediately. Wash off with soap and water for more than 15 minutes. And take medical assistant immediately. If symptoms like redness or irritation occurs, take medical assistant immediately. Wash carefully after handling. Wear gloves while washing the patient and avoid contact with exposed clothes.
 Inhalation: Avoid from exposure and move into an area with fresh air. If not breathing, perform the artificial respiration. If inhaled or swallowed, do not perform the inhalation phase of breathing. Perform the artificial respiration, using the pocket mask with one-way valves or other respiratory medical devices. If hard to breathe, administering oxygen. Remove contaminated clothing and shoes and isolate it. Take a medical assistant immediately.
 Ingestion Contact: Induce vomiting. If unconscious, do not induce vomiting. In case of vomiting, keep head down under hip to prevent lung inhalation. If ingested large quantity, take medical assistant. Take proper medical assistant by symptoms.

Must be considered that early removal of some ingested material by gastric lavage must be weighed against potential complications of bleeding or perforation. Flush mouth with water immediately.

Notes to Physician: There is no specific antidote and take an appropriate medical treatment.

SECTION 5: FIRE FIGHTING MEASURES

Suitable /Unsuitable extinguishing media

Suitable extinguishing media: Powder extinguishing agent, gaseous Extinguishing Agent, and regular foam.

(Unsuitable) extinguishing media: Avoid digestion using direct water.

Avoid use waterjet as fire extinguishing agent.

Avoid extinguishing fire with halogenating agent.

In case of fire: Spread large amount of the extinguishing agent as a mist form with staying against wind.

Stay away more than 800m to avoid tank explosion.

Use appropriate protective device depend on the situation.

Specific hazards arising from the chemical:

Pyrolysate: Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds

Irritating and highly toxic gases may produce during the combustion by pyrolysis or combustion itself.

Fire and Explosion danger : Risk of medium-sized fire.

Aqueous (Exclude water-soluble one) products does not have risk of fire or explosion hazard by itself.

Vapor may be released to the ignition source and ignited.

May form explosive mixture at or above ignition point

Container may explode when heating

Leakages may fire / explosion hazard and could be easily ignited by heat, sparks or flames.

Vapors may explode indoors, outdoors, and in drains

Special protective actions for fire-fighters

Personal Precautions, protective equipment: Gas mask or air respirator, heat resistant clothing, heat resistant helmet, heat resistant gloves, heat resistant boots

Emergency procedures: Use appropriate extinguishing agents to catch fire.

If there is no risk, moving containers away from fire.

Cooling containers with water long time after extinguish fire.

Block the area except for the fire-suppression personnel.

Protect others from access and prohibit access to dangerous areas.

Tell the fire department, location of the fire and the hazardous features.

Use an unmanned fire extinguishing device, in case of large-sized fire. If not, leave it to burn.

Avoid inhalation of the substance or combustion products.

Do not approach if the tank is on fire.

SECTION 6: RELEASE MEASURES

Personal Precautions, protective equipment, and emergency procedures

Personal Precautions, protective equipment: Gas mask for organic gases, other appropriate protective device / clothing / gloves.

Emergency procedures: Take an action to block the leakage if there is no risk.

Spray water to reduce amount of steam.

Do work with the personal protected devices such as gas mask for organic gases other appropriate protective devices / clothing / gloves.

Do not contact on bare skin

Environmental precautions:

Atmosphere: Do install the local ventilations and full ventilation system

Using local ventilation to Minimize the exposure to worker.

Soil: Trap spilled material at bottom in deep water pockets, excavated holding areas or within sandbag barriers.

Use absorbent to collect the appropriate container.

Under water: Use absorbent to collect the appropriate container.

Collect spilled material with mechanic devices

Methods and materials for containment and cleaning up:

Small spill : Absorb for use sand or other non-combustible material.
Move to appropriate container for disposal of spilled material collected.
Large spill : Prohibit access of unnecessary people, isolate hazard area to secure.
Notify to central and local government, when emissions are above regulation.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling : Keep or handle followed by Dangerous Goods Safety Management Act
Ground for preventing the static discharge.
Seal the container for minimizing the petroleum steam
Use local ventilations and a full ventilation system when handling
Wash carefully after handling.
Avoid contact with prohibited materials in mixture.
Do not handle until you read and understood all safety precautions.
Do not inhale vapor for long-term or repeatedly.
Avoid contact with heat, sparks, flames or other sources of ignition.
Do not take contaminated clothing away from the work area.
Storing with combustible substances such as stained clothes or paper may cause fire by spontaneous ignition. Thus, do not stack it, and keep it in a non-flammable container with cap filled with water and dispose it.
Conditions for safe storage, including any incompatibilities : Because of evaporation and contamination concerns, airtight the container and store in a well-ventilated building.
Avoid direct sunlight while storing outdoor.
Storage temperature: 5 ~ 35 °C
Avoid strong oxidizing agents, acid.
Store at appropriate temperature according to the isolation location, freezing caution, high temperature body caution.
Storage temperature: 5 ~ 15 °C
Storage temperature: 15 ~ 25 °C
Storage temperature: 25 ~ 35 °C
Store in a cool, dry, well-ventilated area.
Check periodically for leaks
Store in accordance with all current law and regulations.
Store in original container only.
Prevent static electricity and do not store near heat sources.
Collect in an airtight container to dispose.
Store away from waterworks and sewers.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Tetraethyl N,N'-(methylenedi-4,1-cyclohexanediyl)bis(aspartate)

ACGIH: NO DATA

Biological exposure indices: NO DATA

Solvent naphtha (petroleum), light arom.

ACGIH: NO DATA

Biological exposure indices: NO DATA

2-Butenedioic acid (E)-, diethyl ester

ACGIH: NO DATA

Biological exposure indices: NO DATA

4,4-Dimethyl-1,3-oxazolidine

ACGIH: NO DATA

Biological exposure indices: NO DATA

Engineering Controls

Do install local ventilations and full ventilation system

Use local ventilation to minimize exposure to worker.

Personal Protective Equipment:

Respiratory protection : Respirators should be authorized OSHA - Occupational Safety and Health Agency
Use a personal protect respirator for organic solvents or higher level of capacity when workers are exposed to unsuitable respiratory working conditions, or longer period exposure than the standard level.
Consider warning properties before use.
Respiratory protection may be needed, with frequent use or heavy exposure.
Respiratory protection is ranked in order from minimum to maximum
If there is a possibility of direct contact or exposure to these substances, you should wear an authorized dust-proof mask or respirator for organic compounds.
Eye protection: Use the respirator for organic solvent or higher level.
Install washing facilities and emergency washing facilities close to workplace.
Let workers do wear the safety glasses in case hazard caused by mist may be expected.
If there is possibility of direct contact or exposure to these substances should wear authorized safety glasses or mask.
Hand protection: Do the workers wear the impermeable protective gloves made from rubber/PVC due to skin irritation may be supposed by chronicle and long period exposure.
Wear the chemical protective gloves
Wear appropriate protective gloves
If there is possibility of direct contact or exposure to these substances should wear authorized safety gloves for chemicals.
Skin protection: Work after wearing the impermeable protective apron made by rubber/PVC in case hazard caused by exposure or spill, wear the impermeable whole body protective clothing if needed.
Wear appropriate chemical protective clothing.
Wear cleanroom garment or appropriate protective clothing to prevent contamination
If there is a possibility of direct contact or exposure to the substance wear protective clothing for chemical substances.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid
Odor: Specific odor
Odor threshold: NO DATA
PH: NO DATA
Melting point/Freezing point (°C) : NO DATA
Initial Boiling Point/Boiling Ranges (°C) : NO DATA
Flash point (°C) : 63.5
Evaporating Rate: NO DATA
Flammability (solid, gas) : 97.2
Upper/Lower Flammability or explosive limits: NO DATA
Vapor pressure: NO DATA
Solubility: (Water)Insoluble
Vapor density: NO DATA
Specific gravity: 1.06
Partition coefficient of n-octanol/water: NO DATA
Autoignition temperature (°C) : NO DATA
Decomposition temperature (°C) : NO DATA
Viscosity: 400CPS
Molecular weight: NO DATA

SECTION 10: HANDLING AND STORAGE

Chemical stability: NO DATA
Possibility of hazardous reactions: Do not contact with heat, spark, flame, or other flammable sources
Avoid contaminants and friction.
Conditions to avoid: Oxidation agent, metal and combustible materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Respiratory tracts: Adverse lung effects, Dyspnoea, Hypothermia, Vomiting

Oral: Vomiting, Diarrhea, Stomach pain, Irregular heartbeat

Skin: Irritation, Burn, Adverse nerve effects

Eye: Irritation, eye damage

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

Tetraethyl N,N'-(methylenedi-4,1-cyclohexanediyl)bis(aspartate)

Acute toxicity

Oral: NO DATA

Dermal: NO DATA

Inhalation: NO DATA

Skin corrosion/irritation: NO DATA

Serious eye damage/irritation: NO DATA

Respiratory sensitization: NO DATA

Skin sensitization: NO DATA

Carcinogenicity

IARC: NO DATA

OSHA: NO DATA

ACGIH: NO DATA

NTP: NO DATA

EU CLP: NO DATA

Germ cell mutagenicity: NO DATA

Reproductive toxicity: NO DATA

STOT-single exposure: NO DATA

STOT-repeated exposure: NO DATA

Aspiration hazard: NO DATA

Solvent naphtha (petroleum), light arom.

Acute toxicity

Oral: LD50 = 8400 mg/kg Rat

Dermal: LD50 > 2000 mg/kg Rabbit

Inhalation: LD50 > 2000 mg/kg Rabbit

Skin corrosion/irritation: weakstimulus(rabbit)

Serious eye damage/irritation: Mild irritant(rabbit)

Respiratory sensitization: NO DATA

Skin sensitization: Non-sensitizer (Guinea pig)

Carcinogenicity

IARC: NO DATA

OSHA: NO DATA

ACGIH: NO DATA

NTP: NO DATA

EU CLP: Carc 1B

Germ cell mutagenicity: EU CLP: 1B (case containing less than 0.1% of the benzene in a weight ratio of the material not applied to the present classification)

Reproductive toxicity: EU CLP: 1B (case containing less than 0.1% of the benzene in a weight ratio of the material not applied to the present classification)

STOT-single exposure: Affecting the central nervous system. Inhalation of high concentrations vapors may cause loss of consciousness.

STOT-repeated exposure: NO DATA

Aspiration hazard: Harmful aspiration concerns

2-Butenedioic acid (E)-, diethyl ester

Acute toxicity

Oral: LD50 1367 mg/kg Rat (female, 1500-2000 mg/kg (male))

Dermal: LD50 3560 mg/kg rabbit

Inhalation: LD50 3560 mg/kg rabbit

Skin corrosion/irritation: NO DATA

Serious eye damage/irritation: NO DATA

Respiratory sensitization: NO DATA

Skin sensitization: NO DATA
Carcinogenicity
IARC: NO DATA
OSHA: NO DATA
ACGIH: NO DATA
NTP: NO DATA
EU CLP: NO DATA
Germ cell mutagenicity: NO DATA
Reproductive toxicity: NO DATA
STOT-single exposure: NO DATA
STOT-repeated exposure: Repeated toxicity NOEL \leq 11mg/kg/day
Aspiration hazard: NO DATA
4,4-Dimethyl-1,3-oxazolidine
Acute toxicity
Oral: LD50 950 mg/kg Rat
Dermal: LD50 1400 mg/kg rabbit
Inhalation: LD50 1400 mg/kg rabbit
Skin corrosion/irritation: NO DATA
Serious eye damage/irritation: NO DATA
Respiratory sensitization: NO DATA
Skin sensitization: NO DATA
Carcinogenicity
IARC: NO DATA
OSHA: NO DATA
ACGIH: NO DATA
NTP: NO DATA
EU CLP: NO DATA
Germ cell mutagenicity: NO DATA
Reproductive toxicity: NO DATA
STOT-single exposure: NO DATA
STOT-repeated exposure: NO DATA
Aspiration hazard: NO DATA

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:
Tetraethyl N,N'-(methylenedi-4,1-cyclohexanediy)bis(aspartate)
Fish: NO DATA
Crustaceans: NO DATA
Algae: NO DATA
Solvent naphtha (petroleum), light arom.
Fish: LC50 = 9.22 mg/ℓ 96 hr Oncorhynchus mykiss
Crustaceans: EC50 = 6.14 mg/ℓ 48 hr Daphnia magna
Algae: EC50 = 19 mg/ℓ 72 hr Selenastrum capricornutum
2-Butenedioic acid (E)-, diethyl ester
Fish: LC50 4.5 mg/ℓ 96 hr
Crustaceans: EC50 11 mg/ℓ 24 hr
Algae: EC50 1.1 mg/ℓ 72 hr
4,4-Dimethyl-1,3-oxazolidine
Fish: LC50 59 mg/ℓ 96 hr Lepomis cyanellus
Crustaceans: EC50 45 mg/ℓ 48 hr Daphnia magna
Algae: NO DATA
Persistence and degradability:
Tetraethyl N,N'-(methylenedi-4,1-cyclohexanediy)bis(aspartate)
Persistence: NO DATA
Degradability: NO DATA

Solvent naphtha (petroleum), light arom.
Persistence: log Kow = 2.1 ~ 6 (Estimates)
Degradability: BOD5/COD = 0.43
2-Butenedioic acid (E)-, diethyl ester
Persistence: log Kow = 1.1
Degradability: NO DATA
4,4-Dimethyl-1,3-oxazolidine
Persistence: log Kow -0.08 (Estimates)
Degradability: NO DATA
Bioaccumulative potential
Tetraethyl N,N'-(methylenedi-4,1-cyclohexanediyl)bis(aspartate)
Bioaccumulative potential: NO DATA
Biodegradation : NO DATA
Solvent naphtha (petroleum), light arom.
Bioaccumulative potential: NO DATA
Biodegradation : NO DATA
2-Butenedioic acid (E)-, diethyl ester
Bioaccumulative potential: NO DATA
Biodegradation : 92 ~ 95 (%) 28 day
4,4-Dimethyl-1,3-oxazolidine
Bioaccumulative potential: BCF 3.16 (Estimates)
Biodegradation : NO DATA
Mobility in soil:
4,4-Dimethyl-1,3-oxazolidine: Koc 9.432 (Estimates)
Other adverse effects: NO DATA

SECTION 13: WASTE DISPOSAL

Disposal methods: Disposal material should keep in the airtight container and consign according to Waste Material Management Act
Pre-treat with oil-water separation method when it is available.
Recycle the recyclable materials, such as organic solvents, and then incinerate the residue at high temperature.
To prevent environmental pollution, dispose it to a licensed waste disposal company.
Special precautions for disposal: Prohibit the unauthorized disposal and incineration due to adversely affect natural ecosystems
Discard it followed by appropriate regulations.

SECTION 14: TRANSPORTATION INFORMATION

UN Number (IMDG CODE/IATA DGR): NOT REGULATED FOR TRANSPORT
Proper shipping name: N/A
Hazard class: Non dangerous goods
Packing group (IMDG CODE/IATA DGR): N/A
Marine pollutant: N/A
Special precautions for user related to transport or transportation measures.
Local transport follows in accordance with Dangerous goods Safety Management
Package and transport follow in accordance with Department of Transportation
EMS FIRE SCHEDULE: N/A
EMS SPILLAGE SCHEDULE: N/A

SECTION 15: REGULATORY INFORMATION

Tetraethyl N,N'-(methylenedi-4,1-cyclohexanediyl)bis(aspartate)
Information of EU Classification: NO DATA

U.S. Federal regulations:

OSHA PROCESS SAFETY (29CFR1910.119): not applicable

CERCLA Section 103 (40CFR302.4): not applicable

EPCRA Section 302 (40CFR355.30): not applicable

EPCRA Section 304 (40CFR355.40): not applicable

EPCRA Section 313 (40CFR372.65): not applicable

Rotterdam Convention listed ingredients : NO DATA

Stockholm Convention listed ingredients : NO DATA

- Montreal Protocol listed ingredients : NO DATA

Solvent naphtha (petroleum), light arom.: NO DATA

2-Butenedioic acid (E)-, diethyl ester: NO DATA

4,4-Dimethyl-1,3-oxazolidine: NO DATA

SECTION 16: DISCLAIMER

Disclaimer: the information contained herein is based on the data available and is believed to be accurate, however, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: POLYASPARTIC 930 PART B

PRODUCT CODES: 930

MANUFACTURER: KRETETEK INDUSTRIES INC

STREET ADDRESS: 66 RIVER ROAD

CITY, STATE, ZIP: HUDSON NH 03051

INFORMATION PHONE: 855-573-8383

EMERGENCY PHONE: Chemtrec 800-424-9300

FAX PHONE: 855-573-8383

DATE REVISED: 5/1/23

Chemical Name or Class: Epoxy coating

SECTION 2: HAZARDS IDENTIFICATION

Hazard identification

GHS Classification:

Flammable liquids Category 3

Acute toxicity (inhalation: vapor) Category 3

Carcinogenicity Category 1B

Germ cell mutagenicity Category 1B

Chronic aquatic toxicity Category 2

Specific target organ toxicity(Repeated exposure) Category 2

Aspiration hazard Category 1

Acute toxicity (dermal) Category 5

GHS label elements:

Hazard symbols



Signal words: DANGER

Hazard statements:

H226 Flammable liquid and vapor

H331 Toxic if inhaled

H350 May cause cancer

H340 May cause genetic defects

H411 Toxic to aquatic life with long lasting effects

H373 Prolonged or repeated exposure may cause damage to the liver, testes, skin, respiratory system, blood and central nervous system of the body (Refer Section SDS 11)

H304 May be fatal if swallowed and enters airways

H313 May be harmful in contact with skin.

Precautionary statements:

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. no smoking

P223 Do not contact with water

P240 Ground container and receiving equipment

P241 Use explosion-proof equipment (electricity, ventilation, lighting, etc.)
 P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
 P243 Take precautionary measures against static discharge.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 P271 Use only outdoors or in a well-ventilated area.
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P273 Avoid release to the environment.
 P260 Do not breathe dust/fume/gas/mist/vapors/spray.
 Response:
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P310 Immediately call a POISON CENTER or doctor/physician.
 P321 Specific treatment
 P308+P313 If exposed or concerned: Get medical advice / attention.
 P391 Collect spillage.
 P314 Get medical advice/attention if you feel unwell.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P331 Do NOT induce vomiting.
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 Storage:
 P403+P235 Store in a well-ventilated place. Keep cool.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed
 P405 Store by locking.
 Disposal:
 P501 Dispose of the contents and containers in accordance with waste-related laws.

SECTION 3: COMPOSITION ON INGREDIENTS

Composition/information on ingredients

28182-81-2	1,6-Diisocyanatohexane homopolymer	60-70%
64742-95-6	Solvent naphtha (petroleum), light arom.	29-39%
1330-20-7	Xylene	1-10%
100-41-4	Ethylbenzene	0.1-4%

SECTION 4: FIRST AID MEASURES

Eye Contact: Flush exposed eyes with plenty of water for more than 15 minutes. If irritation, pain, swelling, tears, or glaring happens, take to a medical assistant immediately. Do not rub your eyes. If you wear a contact lens, remove them first.

Skin Contact: Remove exposed clothing and wash off exposed area with soap and water. If symptoms like irritation or pain occurs, take to a medical assistant immediately. Wash off with soap and water for more than 15 minutes. And take to a medical assistant immediately. If symptoms like redness or irritation occurs, take to a medical assistant immediately. Wash carefully after handling. Wear gloves while washing the patient and avoid contact with exposed clothes.

Inhalation: Avoid exposure and move into an area with fresh air. If not breathing, perform artificial respiration. If inhaled or swallowed, do not perform the inhalation phase of breathing. Perform artificial respiration, using the pocket mask with one-way valves or other respiratory medical devices. If hard to breathe, administer oxygen. Remove contaminated clothing and shoes and isolate it. Take to a medical assistant immediately.

Ingestion Contact: Inducing vomit. If unconscious, do not induce vomiting. In case of vomiting, keep head down under hip to prevent lung inhalation. If ingested large quantity, take to a medical assistant. Take symptoms to a proper medical assistant. It needs to be considered that early removal of some ingested material by gastric lavage must be weighed against potential complications of bleeding or perforation. Flush mouth with water immediately.

Notes to Physician: There is no specific antidote and take an appropriate medical treatment.

SECTION 5: FIRE FIGHTING MEASURES

Suitable /Unsuitable extinguishing media

Suitable extinguishing media: Powder extinguishing agent, gaseous Extinguishing Agent, and regular foam.

(Unsuitable) extinguishing media: Avoid digestion using direct water.

Avoid use waterjet as fire extinguishing agent.

Avoid extinguishing fire with halogenating agent.

In case of fire: Spread large amount of the extinguishing agent as a mist form with staying against wind.

Stay away more than 800m to avoid tank explosion.

Use appropriate protective device depend on the situation.

Specific hazards arising from the chemical:

Pyrolysate: Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds

Irritating and highly toxic gases may produce during the combustion by pyrolysis or combustion itself.

Fire and Explosion danger : Risk of medium-sized fire.

Aqueous (Exclude water-soluble one) products does not have risk of fire or explosion hazard by itself.

Vapor may be released to the ignition source and ignited.

May form explosive mixture at or above ignition point

Container may explode when heating

Leakages may fire / explosion hazard and could be easily ignited by heat, sparks or flames.

Vapors may explode indoors, outdoors, and in drains

Special protective actions for fire-fighters

Personal Precautions, protective equipment: Gas mask or air respirator, heat resistant clothing, heat resistant helmet, heat resistant gloves, heat resistant boots

Emergency procedures: Use appropriate extinguishing agents to catch fire.

If there is no risk, moving containers away from fire.

Cooling containers with water long time after extinguish fire.

Block the area except for the fire-suppression personnel.

Protect others from access and prohibit access to dangerous areas.

Tell the fire department, location of the fire and the hazardous features.

Use an unmanned fire extinguishing device, in case of large-sized fire. If not, leave it to burn.

Avoid inhalation of the substance or combustion products.

Do not approach if the tank is on fire.

SECTION 6: RELEASE MEASURES

Personal Precautions, protective equipment, and emergency procedures

Personal Precautions, protective equipment: Gas mask for organic gases, other appropriate protective device / clothing / gloves.

Emergency procedures: Take an action to block the leakage if there is no risk.

Spray water to reduce amount of steam.

Do work with the personal protected devices such as gas mask for organic gases other appropriate protective devices / clothing / gloves.

Do not contact on bare skin

Environmental precautions:

Atmosphere: Do install the local ventilations and full ventilation system

Using local ventilation to Minimize the exposure to worker.

Soil: Trap spilled material at bottom in deep water pockets, excavated holding areas or within sandbag barriers.

Use absorbent to collect the appropriate container.

Under water: Use absorbent to collect the appropriate container.

Collect spilled material with mechanic devices

Methods and materials for containment and cleaning up:

Small spill : Absorb for use sand or other non-combustible material.

Move to appropriate container for disposal of spilled material collected.

Large spill : Prohibit access of unnecessary people, isolate hazard area to secure.
Notify to central and local government, when emissions are above regulation.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling : Keep or handle followed by Dangerous Goods Safety Management Act

Ground for preventing the static discharge.

Seal the container for minimizing the petroleum steam

Use local ventilations and a full ventilation system when handling

Wash carefully after handling.

Avoid contact with prohibited materials in mixture.

Do not handle until you read and understood all safety precautions.

Do not inhale vapor for long-term or repeatedly.

Avoid contact with heat, sparks, flames or other sources of ignition.

Do not take contaminated clothing away from the work area.

Storing with combustible substances such as stained clothes or paper may cause fire by spontaneous ignition. Thus, do not stack it, and keep it in a non-flammable container with cap filled with water and dispose it.

Conditions for safe storage, including any incompatibilities : Because of evaporation and contamination concerns, airtight the container and store in a well-ventilated building.

Avoid direct sunlight while storing outdoor.

Storage temperature: 5 ~ 35 °C

Avoid strong oxidizing agents, acid.

Store at appropriate temperature according to the isolation location, freezing caution, high temperature body caution.

Storage temperature: 5 ~ 15 °C

Storage temperature: 15 ~ 25 °C

Storage temperature: 25 ~ 35 °C

Store in a cool, dry, well-ventilated area.

Check periodically for leaks

Store in accordance with all current law and regulations.

Store in original container only.

Prevent static electricity and do not store near heat sources.

Collect in an airtight container to dispose.

Store away from waterworks and sewers.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

1,6-Diisocyanatohexane homopolymer

ACGIH: NO DATA

Biological exposure indices: NO DATA

Solvent naphtha (petroleum), light arom.

ACGIH: NO DATA

Biological exposure indices: NO DATA

Xylene

ACGIH: NO DATA

Biological exposure indices: While urinating Methylhippuric acids : 1.5 g/g creatinine(After work)

Ethylbenzene

ACGIH: NO DATA

Biological exposure indices: While urinating (The sum of Mandelic acid, Phenylglyoxylic acids) : 0.15 g/g creatinine(After work)

Engineering Controls

Do install local ventilations and full ventilation system

Use local ventilation to minimize exposure to worker.

Personal Protective Equipment:

Respiratory protection : Respirators should be authorized OSHA - Occupational Safety and Health Agency

Use a personal protect respirator for organic solvents or higher level of capacity when workers are exposed to unsuitable

respiratory working conditions, or longer period exposure than the standard level.
Consider warning properties before use.
Respiratory protection may be needed, with frequent use or heavy exposure.
Respiratory protection is ranked in order from minimum to maximum
If there is a possibility of direct contact or exposure to these substances, you should wear an authorized dust-proof mask or respirator for organic compounds.
Eye protection: Use the respirator for organic solvent or higher level.
Install washing facilities and emergency washing facilities close to workplace.
Let workers do wear the safety glasses in case hazard caused by mist may be expected.
If there is possibility of direct contact or exposure to these substances should wear authorized safety glasses or mask.
Hand protection: Do the workers wear the impermeable protective gloves made from rubber/PVC due to skin irritation may be supposed by chronicle and long period exposure.
Wear the chemical protective gloves
Wear appropriate protective gloves
If there is possibility of direct contact or exposure to these substances should wear authorized safety gloves for chemicals.
Skin protection: Work after wearing the impermeable protective apron made by rubber/PVC in case hazard caused by exposure or spill, wear the impermeable whole body protective clothing if needed.
Wear appropriate chemical protective clothing.
Wear cleanroom garment or appropriate protective clothing to prevent contamination
If there is a possibility of direct contact or exposure to the substance wear protective clothing for chemical substances.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid
Odor: Specific odor
Odor threshold: NO DATA
PH: NO DATA
Melting point/Freezing point (°C) : NO DATA
Initial Boiling Point/Boiling Ranges (°C) : NO DATA
Flash point (°C) : 32
Evaporating Rate: NO DATA
Flammability (solid, gas) : NO DATA
Upper/Lower Flammability or explosive limits: NO DATA
Vapor pressure: NO DATA
Solubility: (Water)Insoluble
Vapor density: NO DATA
Specific gravity: 1.0 ± 0.3
Partition coefficient of n-octanol/water: NO DATA
Autoignition temperature (°C) : NO DATA
Decomposition temperature (°C) : NO DATA
Viscosity: 40-60 KU
Molecular weight: NO DATA

SECTION 10: HANDLING AND STORAGE

Chemical stability: NO DATA
Possibility of hazardous reactions: Do not contact with heat, spark, flame, or other flammable sources
Avoid contaminants and friction.
Conditions to avoid: Oxidation agent, metal and combustible materials.
Hazardous decomposition products : Thermal decomposition products (carbon etc.,)

SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Respiratory tracts: Adverse lung effects, Dyspnoea, Hypothermia, Vomiting

Oral: Vomiting, Diarrhea, Stomach pain, Irregular heartbeat

Skin: Irritation, Burn, Adverse nerve effects

Eye: Irritation, eye damage

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

1,6-Diisocyanatohexane homopolymer

Acute toxicity

Oral: NO DATA

Dermal: NO DATA

Inhalation: NO DATA

Skin corrosion/irritation: NO DATA

Serious eye damage/irritation: NO DATA

Respiratory sensitization: NO DATA

Skin sensitization: NO DATA

Carcinogenicity

IARC: NO DATA

OSHA: NO DATA

ACGIH: NO DATA

NTP: NO DATA

EU CLP: NO DATA

Germ cell mutagenicity: NO DATA

Reproductive toxicity: NO DATA

STOT-single exposure: NO DATA

STOT-repeated exposure: This risk may be increased by exposure to a case : Respiratory disorders, skin disorders and allergies

Aspiration hazard: NO DATA

Solvent naphtha (petroleum), light arom.

Acute toxicity

Oral: LD50 = 8400 mg/kg Rat

Dermal: LD50 > 2000 mg/kg Rabbit

Inhalation: LD50 > 2000 mg/kg Rabbit

Skin corrosion/irritation: weakstimulus(rabbit)

Serious eye damage/irritation: Mild irritant(rabbit)

Respiratory sensitization: NO DATA

Skin sensitization: Non-sensitizer (Guinea pig)

Carcinogenicity

IARC: NO DATA

OSHA: NO DATA

ACGIH: NO DATA

NTP: NO DATA

EU CLP: Carc 1B

Germ cell mutagenicity: EU CLP: 1B (case containing less than 0.1% of the benzene in a weight ratio of the material not applied to the present classification)

Reproductive toxicity: EU CLP: 1B (case containing less than 0.1% of the benzene in a weight ratio of the material not applied to the present classification)

STOT-single exposure: Affecting the central nervous system. Inhalation of high concentrations vapors may cause loss of consciousness.

STOT-repeated exposure: NO DATA

Aspiration hazard: Harmful aspiration concerns

Xylene

Acute toxicity

Oral: LD50=3550 mg/kg rat

Dermal: LD50 4350 mg/kg Rabbit

Inhalation: LD50 4350 mg/kg Rabbit

Skin corrosion/irritation: Skin irritation test in rabbits Causes moderate irritation.

Serious eye damage/irritation: Skin irritation test in rabbits Causes moderate irritation.

Respiratory sensitization: NO DATA

Skin sensitization: NO DATA

Carcinogenicity

IARC: NO DATA

OSHA: NO DATA

ACGIH: A4

NTP: NO DATA

EU CLP: NO DATA

Germ cell mutagenicity: If three people a voice dynamics, somatic cell mutagenicity tests in vivo (micronucleus test, chromosome test) Voice

Reproductive toxicity: If three people a voice dynamics, somatic cell mutagenicity tests in vivo (micronucleus test, chromosome test) Voice

STOT-single exposure: NO DATA

STOT-repeated exposure: NO DATA

Aspiration hazard: Can cause chemical pneumonia if swallowed.

Ethylbenzene

Oral: LD50 = 3500 mg/kg Rat

Dermal: LD50 = 15400 mg/kg Rabbit

Inhalation: Steam LC50 = 4000 ppm 4 hr Rat (Equivalents : 17.4 mg/L)

Skin corrosion/irritation: skin Irritation test result weak Irritation

Serious eye damage/irritation: Rabbit eye irritation test results in a slight conjunctival irritation, recoverable damage.

Respiratory sensitization: NO DATA

Skin sensitization: NO DATA

Carcinogenicity

IARC: Group2B

OSHA: NO DATA

ACGIH: A3

NTP: NO DATA

EU CLP: NO DATA

Germ cell mutagenicity: Micronucleustest Negative (7)

Reproductive toxicity: Micronucleustest Negative (7)

STOT-single exposure: It causes central nervous system effects in laboratory animals and airway irritation.

STOT-repeated exposure: NO DATA

Aspiration hazard: Hydrocarbons. Swallowing the liquid by aspiration may cause chemical pneumonia. Ties seongryul 0.74 mm² / s (25 °C)

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

1,6-Diisocyanatohexane homopolymer Fish: NO DATA

Crustaceans: NO DATA

Algae: NO DATA

Solvent naphtha (petroleum), light arom.

Fish: LC50 = 9.22 mg/ℓ 96 hr Oncorhynchus mykiss

Crustaceans: EC50 = 6.14 mg/ℓ 48 hr Daphnia magna

Algae: EC50 = 19 mg/ℓ 72 hr Selenastrum capricornutum

Xyelene

Fish: NO DATA

Crustaceans: NO DATA

Algae: NO DATA

Ethylbenzene

Fish: LC50 = 9.09 mg/ℓ 96 hr

Crustaceans: LC50 = 0.4 mg/ℓ 96 hr

Algae: NO DATA

Persistence and degradability:

1,6-Diisocyanatohexane homopolymer Fish: NO DATA

Persistence: NO DATA
Degradability: NO DATA
Solvent naphtha (petroleum), light arom.
Persistence: log Kow = 2.1 ~ 6 (Estimates)
Degradability: BOD5/COD = 0.43
Xylene
Persistence: NO DATA
Degradability: NO DATA
Ethylbenzene
Persistence: NO DATA
Degradability: NO DATA
Bioaccumulative potential
1,6-Diisocyanatohexane homopolymer
Bioaccumulative potential: NO DATA
Biodegradation: NO DATA
Solvent naphtha (petroleum), light arom.
Bioaccumulative potential: NO DATA
Biodegradation : Biodegradability = 94 (%) 28 day (Aerobic, Activated Sludge)
Xylene
Bioaccumulative potential: NO DATA
Biodegradation : NO DATA
Ethylbenzene
Bioaccumulative potential: BCF 10
Biodegradation : 0 (%) 28 day (OECD TG 301C)
Mobility in soil:
Xylene: log Kow = 3.12 (measured) (ortho), 3.2 (measured) (meta), 3.15 (measurements) (p) (5)
Ethylbenzene: log Kow = 3.15 (11)
Other adverse effects: NO DATA

SECTION 13: WASTE DISPOSAL

Disposal methods: Disposal material should keep in the airtight container and consign according to Waste Material Management Act
Pre-treat with oil-water separation method when it is available.
Recycle the recyclable materials, such as organic solvents, and then incinerate the residue at high temperature.
To prevent environmental pollution, dispose it to a licensed waste disposal company.
Special precautions for disposal: Prohibit the unauthorized disposal and incineration due to adversely affect natural ecosystems
Discard it followed by appropriate regulations.

SECTION 14: TRANSPORTATION INFORMATION

UN Number (IMDG CODE/IATA DGR): 1263
Proper shipping name: Paint (including paint, lacquer, enamel, colorants, shellac solutions, varnish, polish, liquid filler and liquid lacquer sealer) or related materials (including paint diluent and reductant).
Hazard class: 3
Packing group (IMDG CODE/IATA DGR): III
Marine pollutant: N/A
Special precautions for user related to transport or transportation measures.
Local transport follows in accordance with Dangerous goods Safety Management
Package and transport follow in accordance with Department of Transportation
EMS FIRE SCHEDULE: F-E
EMS SPILLAGE SCHEDULE: S-E

SECTION 15: REGULATORY INFORMATION

1,6-Diisocyanatohexane homopolymer

Information of EU Classification: NO DATA

U.S. Federal regulations:

OSHA PROCESS SAFETY (29CFR1910.119): not applicable

CERCLA Section 103 (40CFR302.4): not applicable

EPCRA Section 302 (40CFR355.30): not applicable

EPCRA Section 304 (40CFR355.40): not applicable

EPCRA Section 313 (40CFR372.65): not applicable

Rotterdam Convention listed ingredients : NO DATA

Stockholm Convention listed ingredients : NO DATA

- Montreal Protocol listed ingredients : NO DATA

Solvent naphtha (petroleum), light arom.: NO DATA

Information of EU Classification: NO DATA

U.S. Federal regulations:

OSHA PROCESS SAFETY (29CFR1910.119): not applicable

CERCLA Section 103 (40CFR302.4): not applicable

EPCRA Section 302 (40CFR355.30): not applicable

EPCRA Section 304 (40CFR355.40): not applicable

EPCRA Section 313 (40CFR372.65): not applicable

Rotterdam Convention listed ingredients : NO DATA

Stockholm Convention listed ingredients : NO DATA

- Montreal Protocol listed ingredients : NO DATA

Xylene: NO DATA

Information of EU Classification: NO DATA

U.S. Federal regulations:

OSHA PROCESS SAFETY (29CFR1910.119): not applicable

CERCLA Section 103 (40CFR302.4): not applicable

EPCRA Section 302 (40CFR355.30): not applicable

EPCRA Section 304 (40CFR355.40): not applicable

EPCRA Section 313 (40CFR372.65): not applicable

Rotterdam Convention listed ingredients : NO DATA

Stockholm Convention listed ingredients : NO DATA

- Montreal Protocol listed ingredients : NO DATA

Ethylbenzene: NO DATA

Information of EU Classification: NO DATA

U.S. Federal regulations:

OSHA PROCESS SAFETY (29CFR1910.119): not applicable

CERCLA Section 103 (40CFR302.4): not applicable

EPCRA Section 302 (40CFR355.30): not applicable

EPCRA Section 304 (40CFR355.40): not applicable

EPCRA Section 313 (40CFR372.65): not applicable

Rotterdam Convention listed ingredients : NO DATA

Stockholm Convention listed ingredients : NO DATA

- Montreal Protocol listed ingredients : NO DATA

SECTION 16: DISCLAIMER

Disclaimer: the information contained herein is based on the data available and is believed to be accurate, however, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.