

H373 - May cause damage to organs (Lungs) through prolonged or repeated exposure.
H402 - Harmful to aquatic life.

Pictograms



Precautionary Statements

Prevention

P171 - Use only outdoors or in a well-ventilated area.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 - Avoid breathing vapors or mist.
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - In case of inadequate ventilation, wear respiratory protection that meets the requirements in OSHA's Respiratory Protection Standard (29 CFR 1910.134) or regional standards.

Response

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P311 - Call a poison center/doctor.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332 + P313 - If skin irritation or rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
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.
P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
P314 - Get medical advice/attention if you feel unwell.

Storage

P403 + P233 + P235 - Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405 - Store locked up.

Disposal

P501 - Dispose of contents/container to an approved waste disposal plant in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) Not Otherwise Classified (HNOC)

None known

Other Information

Inhalation

Isocyanate vapors or mist at concentrations above the exposure limits or guidelines can cause a burning sensation and irritate the mucous membranes in the nose, throat, and lungs, resulting in symptoms of running nose, sore throat, coughing, chest discomfort, shortness of breath and difficulty in breathing. Persons with specific pre-existing as well as non-specific bronchial hyperreactivity can respond to concentrations of isocyanate below the exposure limit or guidelines with asthma or asthma-like symptoms. Exposure above these limits or guidelines may lead to bronchitis, bronchial spasm, and fluid in lungs (pulmonary edema). Some persons may see a delay of these symptoms up to several hours after exposure, and these effects are usually reversible.

Skin

May cause skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization with symptoms of reddening, itching, swelling and rash. Cured material is difficult to remove from the skin.

Eye

May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling, particularly with product vapor, mists, or aerosol. May cause temporary corneal injury.

Ingestion

May cause irritation of the digestive tract with symptoms that include abdominal pain, nausea, vomiting, and diarrhea.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components

Chemical Name	CAS Number	Weight Percentage
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	70-90
(2-Methoxymethylethoxy) Propanol	34590-94-8	5-10
Proprietary - Non-Hazardous Ingredients	1119-40-0	7-15

The specific chemical identity and/or exact percentage of component(s) have been withheld as a trade secret.

SECTION 4: FIRST AID MEASURES

First Aid Instructions/Measures

Eye

In case of contact, flush eyes with plenty of lukewarm water for 15 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops or persists.

Contact

Skin Contact

In case of skin contact, wash affected areas with soap and water for 15 minutes. For minor skin contact, avoid spreading material on unaffected skin. Immediately remove contaminated clothing and shoes. Destroy or thoroughly wash clothing before reuse. Destroy or thoroughly clean shoes before reuse. Get medical attention if irritation develops or persists.

Inhalation

If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not use mouth-to-mouth method if victim inhaled the substance. Get medical attention if irritation develops or persists.

Ingestion

If ingested, do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Give two glasses of water for dilution. Never give anything by mouth to an unconscious person or who is having convulsions. Do not use mouth-to-mouth method if victim ingested the substance. Call a physician immediately.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms

May cause allergic skin reaction with symptoms of reddening, itching, swelling, pain and rash. May cause skin irritation with symptoms of reddening, itching, pain and swelling. May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Inhalation may cause respiratory irritation with throat discomfort, coughing or difficulty breathing. May cause headache and/or dizziness.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Note to physicians

Provide general supportive measures and treat symptomatically. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the medical provider in attendance.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical, CO₂, water spray and regular foam.

Unsuitable Extinguishing Media

High volume water jet/stream. This method may scatter and spread fire.

Specific Fire and Explosion Hazards Arising from the Chemical

Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Combustible liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint. Autoignition may occur with cotton waste or similar combustible materials.

Hazardous Decomposition Products

Isophorone diamine, isobutyraldehyde, nitrogen oxides, carbon monoxide and carbon dioxide.

Special Protective Equipment and Precautions for Firefighters

Firefighters should wear NFPA approved self-contained breathing apparatus and full protective clothing. Avoid contact with product. Decontaminate equipment and protective clothing prior to re-use. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear appropriate personal protective equipment. Evacuate surrounding areas and isolate the area. Keep out of low areas. Remove all sources of ignition. Keep unnecessary and unprotected personnel from entering. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Implement site emergency response plan. For personal protection, see section 8 of this safety data sheet. Do not touch or walk-through spilled material.

Environmental Precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform authorities if the product has caused environmental pollution (sewers, drains, waterways, or soil).

Containment and Clean-up Measures

Cleanup personnel must use appropriate personal protective equipment. Evacuate and keep unnecessary personnel out of spill area. Remove all sources of ignition, including flames, heat, and sparks. Stop leak if without risk. Move containers from spill area. Dike or dam spilled material with non-combustible, absorbent material (e.g., sand, earth, vermiculite, or diatomaceous earth) and control further spillage, where possible. Make certain the absorbent material soaks up all liquids.

Collect and place spilled material in container (e.g., 55-gal salvage drum) for proper disposal according to appropriate local, state, and federal regulations. Repeat application of absorbent material until all liquid has been removed from the surface. Do not fill the salvage container more than two-thirds full to allow for any expansion, and do not tighten the lid on the container. Store salvage container (make certain lid is loose to allow release of carbon dioxide) in a well ventilated, isolated, and cool area for at least 72 hours. Properly dispose of the waste material and any contaminated equipment in accordance with existing federal, state, and local regulations.

Decontaminate the spill surface area with a neutralization solution. A neutralization solution can be prepared with a combination of two solutions mixed 1:1 by volume: (Solution 1): Mineral Spirits (80%), VVM&P Naptha (15%) and Household Detergent (5%); (Solution 2): Monoethanolamine (50%) and water (50%). Other neutralization solutions include: ZEP® Commercial Heavy-Duty Floor Stripper, EASY OFF® Grill and Oven Cleaner, a solution of Simple Green® Pro HD Heavy-Duty Cleaner (50%) and Household Ammonia (50%), and a solution of Fantastic® Heavy Duty All Purpose Cleaner (90%) and Household Ammonia (10%). Check for residual contamination using Swype® test kits from Colorimetric Laboratories, Inc. (Telephone 847-803-3737) and follow directions provided by the test kits. Repeat decontamination as necessary.

Do not allow spilled material or wash water to enter sewers, surface waters or groundwater systems.

SECTION 7: HANDLING AND STORAGE

<u>Precautions</u>	<u>for</u>	<u>Safe</u>	<u>Handling</u>
--------------------	------------	-------------	-----------------

Do not breathe vapors or spray mist. Avoid contact with eyes or skin. Avoid contact with clothing. Use only with adequate ventilation and personal protection. Remove contaminated personal protective equipment (PPE), then wash hands and face thoroughly after handling and before eating and drinking. Keep container closed when not in use. Empty containers retain product residue and can be hazardous. Do not get in eyes, on skin or on clothing. Do not ingest. Keep away from heat, sparks, flames, and other sources of ignition. Avoid release to the environment. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination with moisture is suspected. Follow all SDS/label precautions even after container is emptied because it may retain product residues.

Conditions for Safe Storage

Keep away from food products during use and storage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled, unapproved, or reactive containers. Use appropriate containment to avoid environmental contamination. Personnel education and training in the safe use and handling of this product are required under OSHA Hazard Communication Standard 29 CFR 1910.1200.

Incompatible Materials

Stable under recommended storage conditions. Avoid water, air humidity, oxidizing agents, acids, isocyanates, cotton waste or other combustible materials. Keep away from sources of ignition. No smoking. This material may have a low electrical conductivity and therefore may accumulate dangerous levels of static electricity. An ignitable vapor-air mixture can form inside storage tanks. The user must be sure to dissipate static charge by careful bonding and grounding of all equipment, and personnel involved in fluid transfer should conduct continuity checks to prove effectiveness of bonding and grounding.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits/Guidelines

Exposure Limits/Guidelines		
Chemical Name	Result	ACGIH/OSHA
Homopolymer of Hexamethylene Diisocyanate (CAS 28182-81-2)	STEL	0.001pm
	TWA	0.005 ppm
	PEL	No data available
(2-Methoxymehtylethoxy) Propanol (CAS 34590-94-8)	STEL	150 ppm
	TWA	100 ppm
	PEL	600 mg/m3

Industrial Hygiene/Ventilation Measures

General dilution and local exhaust ventilation as necessary to control airborne vapors, aerosols (e.g., dusts, mists) and thermal decomposition products. Heating may result in generation of airborne vapors and/or aerosols.

Personal Protective Equipment

Respiratory protection

If vapors form, respiratory protection is recommended. The use of a positive pressure supplied air respirator is recommended if the airborne concentration is unknown or if spraying is performed in a confined space or area with limited ventilation. In spray applications, an organic vapor/particulate respirator or air supplied unit is necessary.

Hand protection

Permeation resistant gloves, Viton gloves, 4H laminate gloves, Butyl rubber gloves or Nitrile rubber gloves.

Eye protection

Chemical safety goggles or safety glasses with side-shields. Chemical safety goggles in combination with a full-face shield if a splash hazard exists.

Skin protection

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Where spray mist/vapor is anticipated, permeation resistant clothing is recommended.

Additional protective measures

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Transparent
Color:	Clear
Odor:	Mild
Odor Threshold:	Not Available
Upper/Lower Flammability Limits:	Not Available
Vapor Pressure:	Not Available
Vapor Density:	Not Available
pH:	Not Available

Relative Density:	1.087 @ 70° F
Melting Point:	Not Available
Freezing Point:	Not Available
Solubility:	Insoluble
Initial Boiling Point/Range:	Not Available
Flash Point:	167° F
Evaporation Rate:	Not Available
Partition Coefficient: n-octanol/water:	Not Available
Auto-ignition Temperature:	Not Available
Decomposition Temperature:	Not Available
Viscosity:	Not Available
Volatile Organic Compounds (VOC):	< 50 g/L

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Material is stable and non-reactive under normal conditions of use, storage, and transport.

Chemical Stability

Material is stable under recommended storage conditions.

Possibility of Hazardous Reactions

Contact with moisture, other materials that react with isocyanates, or temperatures above 350° F may cause polymerization.

Conditions to Avoid

Avoid extreme heat, sparks, open flames, and other ignition sources. Avoid temperatures exceeding the flash point. Air humidity and water.

Incompatible Materials

Water, amines, strong acids, strong bases, alkalis, oxidizing agents, alcohols, copper alloys.

Hazardous Decomposition Products

By fire or thermal decomposition: carbon oxides, nitrogen oxides (NOx), dense black smoke, hydrogen cyanide, isocyanate, isocyanic acid, and other compounds unidentified.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Likely routes of exposure include inhalation by direct contact and vapor inhalation, eye contact by direct contact, skin contact by direct contact and ingestion by direct contact.

Health Effects and Symptoms

Acute

May cause allergic skin reaction with symptoms of reddening, itching, swelling, pain and rash. May cause skin irritation with symptoms of reddening, itching, pain and swelling. May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Inhalation may cause respiratory irritation with throat discomfort, coughing or difficulty breathing.

Chronic

Not expected to cause adverse chronic health effects.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-Term Exposure

Product

No data available.

Components

282182-81-2 Hexamethylene-1,6-diisocyanate Homopolymer

Acute oral toxicity	LD50: > 2500 mg/kg (rat, female)
Acute inhalation toxicity	LC50: > 0.390 - 0.543 mg/l 4h (rat, female)
Acute dermal toxicity	LC50: > 2000 mg/kg (rat)
Acute dermal toxicity	LD50: > 2000 mg/kg (rabbit)
Skin irritation	Slight irritant, skin sensitizer (rabbit)
Eye irritation	Slight irritant (rabbit)
STDT (One time exposure)	May cause respiratory irritation.
Carcinogenicity	No data available

822-06-0 Hexamethylene-1,6-diisocyanate

Acute oral toxicity	LD50: > 746 mg/kg (rat, female)
Acute inhalation toxicity	LC50: > 0.124 mg/l 4h (rat, female)
Acute dermal toxicity	LC50: > 7000 mg/kg (rat)
Skin irritation	Corrosive (rabbit)
Eye irritation	Corrosive (rabbit)
Dermal	Sensitizer (human)
Respiratory	Sensitizer (guinea pig)

34590-94-8 (2-Methoxymethylethoxy) Propanol

Acute dermal toxicity	LD50: 9.5 g/kg (rabbit)
Skin irritation	Slight irritant (rabbit)
Eye irritation	Slight irritant (rabbit)

Proprietary - Non-Hazardous Ingredients

Acute dermal toxicity	LD50: > 2250 mg/kg (rabbit)
	LD50: > 2000 mg/kg (rat)
Acute inhalation toxicity	LC50: > 11 mg/l/4h (rat)
Acute oral toxicity	LD50: > 5000 mg/kg (rat)

Carcinogenicity

No carcinogenic substances as defined by IARC, NTP and/or OSHA.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

282182-81-2 Hexamethylene-1,6-diisocyanate Homopolymer

Toxicity to fish (acute & prolonged)	LC50: 100mg/l (Zebra Fish, 96h)
Acute toxicity to aquatic invertebrates	EC50: 100 mg/l, (Water Flea, 48h)

822-06-0 Hexamethylene-1,6-diisocyanate

Other information	LC0: > 82.8 mg/l/ (Zebra Fish, 48h)
-------------------	-------------------------------------

Proprietary - Non-Hazardous Ingredients

Toxicity to fish	EC50 Fathead minnows: 18-24 mg/l/96h
------------------	--------------------------------------

Toxicity to algae	LOEC <i>Desmodesmus subspicatus</i> : 85 mg/l/72h
	NOEC <i>Desmodesmus subspicatus</i> : 36 mg/l/72h
Toxicity to aquatic invertebrates	EC50 <i>Daphnia magna</i> : 112-150 mg/l/48h
Persistence and degradability	Exposure time: 4 d - Result: 97% Readily biodegradable

Additional Ecotoxicological Remarks

Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose in accordance with Federal, State, and Local laws and regulations. The generation of waste should be avoided or minimized wherever possible. Empty containers should be taken to an approved waste handling site for recycling or disposal. Incineration or landfill should only be considered when recycling is not feasible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Empty Container Precautions

Recondition or dispose of empty container in accordance with governmental regulations. Do not reuse empty container without proper cleaning. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous. Do not heat or cut container with electric or gas torch.

SECTION 14: TRANSPORT INFORMATION

Land Transport (DOT)

UN1263, Paint Related Material, 3, PGIII

*Not regulated by DOT in containers of less than 119 gallons

Sea Transport (IMDG)

UN1263, Paint Related Material, 3, PGIII

Air Transport (ICAO/IATA)

UN1263, Paint Related Material, 3, PGIII

SECTION 15: REGULATORY INFORMATION

United States Federal Regulations

282182-81-2 Hexamethylene-1,6-diisocyanate Homopolymer/822-06-0 Hexamethylene-1,6-diisocyanate

U.S. – CERCLA/SARA – Hazardous Substances and their Reportable Quantities: None

U.S. – SARA – Section 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard

U.S. – CERCLA/SARA – Section 302 Extremely Hazardous Substances TPQs: None

U.S. – CERCLA/SARA – Section 313 – Emissions Reporting: None

U.S. – CERCLA/SARA – Section 313 – PBT Chemical Listing: None

U.S. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components: None

U.S. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 372.65) Supplier Notification Required Components: None

U.S. Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): Under RCRA it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

34590-94-8 (2-Methoxymethylethoxy) Propanol

US Toxic substances Control Act: Not listed on the TSCA inventory

US EPA CERCLA Hazardous Substances (40 CFR 302) Components: Not listed

SARA Section 311/312 Hazard Categories: Flammable (gases, aerosols, liquids, or solids), Acute toxicity (any route of exposure), Skin corrosion or irritation, Serious eye damage or eye irritation, Specific target organ toxicity (single or repeated exposure)

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components: None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components: Not regulated

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

Proprietary - Non-Hazardous Ingredients

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

US Toxic substances Control Act: Listed on the TSCA inventory

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not Regulated

Superfund Amendments and Reauthorization Act of 1986 (SARA):

Hazard Categories	Immediate Hazard	No
	Delayed Hazard	No
	Fire Hazard	No
	Pressure Hazard	No
	Reactivity Hazard	No

SARA 302 Extremely hazardous substance

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Reportable Quantity</u>	<u>Threshold Planning Quantity</u>
Hydrogen Cyanide	74-90-8	10	100 lbs

SARA 311/312 Hazardous Chemical: No

SARA 313 (TRI reporting): Not regulated

US State Regulations

Proprietary - Non-Hazardous Ingredients

US - California Proposition 65 - WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Contains: < 0.1% Methanol

Contains: < 2ppm Hydrogen Cyanide

US - California Proposition 65 - CRT: Listed date/Developmental Toxin: METHANOL (CAS 67-56-1) Listed 03/16/2012

SECTION 16: OTHER INFORMATION

HMIS Ratings

Health - 2 Flammability - 2 Physical Hazard - 1

NFPA Ratings

Health - 2 Flammability - 2 Instability - 1

Issue Date, Revision Date and SDS Version Number

This information is found at the "Footer" of the Safety Data Sheet (all pages). See below.

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.