

SAFETY DATA SHEET

Preparation Date: 09/13/2016

Revision Date: Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: E1428
Product Name: 1,2-Epoxyhexane

Other means of identification

Synonyms: Epoxy-n-hexane
 Butyloxirane
 2-Butyloxirane
 1-Hexene epoxide
 1-Hexene oxide
 ,2-Hexene oxide
 Oxirane, butyl-

CAS #: 1436-34-6
RTECS # MO3630000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: For manufacturing or laboratory use only.
Uses advised against Not for food or drug use.

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 2

Label elements

Danger

Hazard statements

Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation
Highly flammable liquid and vapor



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/./? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response

IN CASE OF FIRE: Use dry chemical, water spray, alcohol-resistant foam or CO2 to extinguish.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
If skin irritation occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
1,2-Epoxyhexane	1436-34-6	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you

have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

- Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.
- Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention.
- Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Causes skin irritation. Causes serious eye irritation. Irritating to respiratory system.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO₂). Water spray, mist, or foam.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Oxides.

Specific hazards: Flammable
May be ignited by heat, sparks or flames
Vapor may travel considerable distance to source of ignition and flash back
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)
Container explosion may occur under fire conditions or when heated
Fire may produce irritating and/or toxic gases

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Take precautionary measures against static discharges. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Moisture sensitive. Protect from moisture. Packed under Argon. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents
Bases
Acids
Alkalis
Moisture

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
1,2-Epoxyhexane	1436-34-6	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
1,2-Epoxyhexane	1436-34-6	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
1,2-Epoxyhexane	1436-34-6	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles
- Skin and body protection:** Gloves. Long sleeved clothing. Chemical resistant apron.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: Clear.	Color: Colorless to pale yellow.
Odor: No information available.	Taste No information available.	Formula: C6H12O
Molecular/Formula weight: 100.16	Flammability: No information available	Flashpoint (°C/°F): 15°C (59°F)
Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): No information available	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 118° - 120°C (244° - 248°F)	Bulk density: No information available	Density (g/cm3): 0.83
Specific gravity: No information available	pH: No information available	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate:		

No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
No information available

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents

Chemical stability

Stability: Moisture Sensitive. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Exposure to moisture. Incompatible materials.

Incompatible Materials:
Oxidizing agents
Bases
Acids
Alkalis
Moisture

Hazardous decomposition products: Carbon oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Eyes. Ingestion. Inhalation.

Acute Toxicity

Component Information

1,2-Epoxyhexane

CAS-No. 1436-34-6

LD50/oral/rat = No information available
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation.

Eye Contact: Causes eye irritation.

Inhalation Irritating to respiratory system. Symptoms may include coughing and wheezing. Other symptoms may include sore throat, chest tightness, coughing. May cause dizziness and headache. May cause nausea, vomiting.

Ingestion Health injuries are not known or expected under normal use.

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity No information available.

Sensitization: No information available.

Mutagenic Effects: Experiments with bacteria have shown mutagenic effects

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
1,2-Epoxyhexane	1436-34-6	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available
Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure Respiratory system.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.
Persistence and degradability: No information available
Bioaccumulative potential: No information available.
Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
1,2-Epoxyhexane	1436-34-6	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1993
Proper Shipping Name: Flammable liquids, n.o.s. (1,2-epoxyhexane)
Hazard Class: 3
Subsidiary Class 3
Packing group: II
Emergency Response Guide Number 128
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions IB2, T7, TP1, TP8, TP28
Symbol(s): No information available
Description: UN1993, Flammable liquids, n.o.s. (1,2-Epoxyhexane), 3, II

TDG (Canada)

UN-No: UN1993
Proper Shipping Name: Flammable liquid, n.o.s.
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II
Marine Pollutant Description: No Information available
UN1993, Flammable liquid, n.o.s. (1,2-Epoxyhexane), 3, II

ADR

UN-No: UN1993
Proper Shipping Name: Flammable liquid, n.o.s.
Hazard Class: 3
Packing Group: II
Subsidiary Risk: 3
Special Provisions Description: 274, 601, 640D
UN1993, Flammable liquid, n.o.s. (1,2-Epoxyhexane), 3, II

IMO / IMDG

UN-No: UN1993
Proper Shipping Name: Flammable liquids, n.o.s. (1,2-epoxyhexane)
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II
Marine Pollutant Description: No information available
EMS: F-E
Special Provisions Description: 274
UN1993, Flammable liquid, n.o.s. (1,2-Epoxyhexane), 3, II

RID

UN-No: UN1993
Proper Shipping Name: Flammable liquid, n.o.s.
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II
Special Provisions Description: 274, 601, 640D
UN1993, Flammable liquid, n.o.s. (1,2-Epoxyhexane), 3, II

ICAO

UN-No: UN1993
Proper Shipping Name: Flammable liquid, n.o.s.
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II
Description: UN1993, Flammable liquid, n.o.s. (1,2-Epoxyhexane), 3, II
Special Provisions: A3

IATA

UN-No: UN1993
Proper Shipping Name: Flammable liquid, n.o.s.
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II
ERG Code: 3H
Special Provisions Description: No information available
UN1993, Flammable liquid, n.o.s. (1,2-Epoxyhexane), 3, II

15. REGULATORY INFORMATION

International Inventories

Product code: E1428

Product name: 1,2-Epoxyhexane

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Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
1,2-Epoxyhexane	1436-34-6	Not Listed	Not present	Present	Present (2)-2714,(2)-220	Present	Present	Present 215-864-6

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
1,2-Epoxyhexane	1436-34-6	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
1,2-Epoxyhexane	1436-34-6	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
1,2-Epoxyhexane	1436-34-6	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

B2 Flammable liquid

D2B Toxic materials

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
1,2-Epoxyhexane	1436-34-6	Not Listed	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
1,2-Epoxyhexane	1436-34-6	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
1,2-Epoxyhexane	1436-34-6	Not listed

EU Classification

R-phrases)

R11 - Highly flammable.

R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
1,2-Epoxyhexane	1436-34-6		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

F - Highly flammable.

Xi - Irritant.

F



Xi



16. OTHER INFORMATION

Preparation Date: 09/13/2016
Revision Date: Not Applicable
Prepared by: Roumann Pangilinan

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet