



# SAFETY DATA SHEET

Issue Date 20-August-2008

Revision Date 02-September-2020

Version 2

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier

Product Name LINDOXY 190

### Other Means of Identification

SDS # LC-058

### Recommended Use of the Chemical and Restrictions on Use

Recommended Use General industrial

### Details of the Supplier of the Safety Data Sheet

#### Supplier Address

Lindau Chemicals, Inc.  
731 Rosewood Drive  
Columbia, SC 29201

### Emergency Telephone Number

Company Phone Number Phone: 1-803-799-6863  
Fax: 1-803-256-3639  
Emergency Telephone INFOTRAC 01-352-323-3500 (International)  
1-800-457-4280 (North America)

## 2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** The information below on skin sensitization relates to repeated and prolonged exposure, particularly where exposure is to the vapor form of the substance.

### Classification

Skin Sensitization	Category 1
Aquatic Hazard (Acute)	Category 3

### Signal Word

Warning

### Hazard Statements

H317: May cause an allergic skin reaction  
H402: Harmful to aquatic life



**Appearance** Colorless to light yellow liquid

**Physical State** Liquid

**Odor** Slight characteristic odor

#### **Precautionary Statements - Prevention**

P261: Avoid breathing fumes or vapors.

P272: Contaminated work clothing should not be allowed out of the workplace.

P273: Avoid release to the environment.

P280: Wear protective gloves, protective clothing and eye protection.

#### **Precautionary Statements - Response**

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.

P362 + P364: Take off contaminated clothing and wash it before reuse.

#### **Precautionary Statements - Disposal**

P501: Dispose of contents/container in accordance with local, regional and national regulations.

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Synonyms**

3,4-Epoxy cyclohexanecarboxylic acid (3,4-epoxycyclohexylmethyl) ester;

3,4-Epoxy cyclohexylmethyl 3,4-epoxycyclohexanecarboxylate

#### **Formula**

C<sub>14</sub>H<sub>20</sub>O<sub>4</sub>

Chemical Name	CAS No	Weight-%
3,4-Epoxy cyclohexylmethyl 3,4-epoxycyclohexanecarboxylate	2386-87-0	> 97

\*\* If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### **4. FIRST AID MEASURES**

#### **First Aid Measures**

##### **Inhalation**

Remove person to fresh air and keep comfortable for breathing. If exposed or concerned, call a doctor/physician or get medical advice and attention.

##### **Eye Contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present. Continue flushing for at least 15 minutes. If eye irritation persists: Get medical attention.

##### **Ingestion**

Rinse mouth. Do NOT induce vomiting. Immediately call a doctor/physician.

##### **Skin Contact**

Take off or dispose of all contaminated clothes. If on skin, wash with plenty of soap and water. If skin irritation occurs, call a doctor/physician or get medical advice and attention.

#### **Most Important Symptoms and Effects**

##### **Symptoms**

Exposure may cause an allergic skin reaction.

#### **Indication of any Immediate Medical Attention and Special Treatment Needed (if Necessary)**

##### **Note to Physician**

Treat symptomatically. Treatment of overexposure should be directed toward the control of symptoms and be based on the clinical condition of the patient.

## 5. FIRE-FIGHTING MEASURES

### **Extinguishing Media**

**Suitable Media**                      Small fires: Dry chemical, alcohol-resistant foam, dry sand  
 Large fires: Dry chemical, alcohol-resistant foam, water sprinkling

**Unsuitable Media**                      Straight streams

### **Specific Hazards Arising from the Chemical**

Product may support combustion if exposed to fire, and fire may be ignited by heat, sparks or flames. Fire may produce irritating, corrosive and/or toxic gases.

**Hazardous Combustion Products**                      Carbon monoxide, carbon dioxide

### **Protective Equipment and Precautions for Fire-fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Move all containers of material from the fire area if this can be done without risk. Contaminated fire-fighting water or dilution water is corrosive and/or toxic.

## 6. ACCIDENTAL RELEASE MEASURES

### **Personal Precautions, Protective Equipment and Emergency Procedures**

**Personal Precautions**                      Keep unauthorized personnel away from any release. Wear appropriate personal protective equipment (see Section 8). Avoid inhalation of fumes or vapors and contact with skin and eyes. Isolate a leak or spill area by establishing a non-entry zone appropriately around the leak or spill. Keep out of areas lower than that of the leak or spill. Stay upwind from the leak or spill. Do not touch or walk through spilled material.

**Environmental Precautions**                      Prevent material from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information, and Section 13, Disposal Considerations, for additional information.

### **Methods and Materials for Containment and Cleaning Up**

**Methods for Containment**                      A vapor-suppressing foam may be used to reduce vapors. Cover spill with dry earth, sand or other non-combustible material. For large spills, dike well ahead of the liquid.

**Methods for Cleaning Up**                      All equipment used when handling the product must be grounded. Use clean, non-sparking tools to collect absorbed material. Collect and keep material in suitable, closed containers for disposal. Dispose of in accordance with federal, state and local regulations.

### **Preventative Measures for Secondary Accidents**

Remove all ignition sources promptly. Prohibit smoking, sparks and flames in surrounding area. Isolate flammables (such as wood, paper and oil) from the leakage or spill. Prevent flow of material into drains, sewers, basements and closed areas.

## 7. HANDLING AND STORAGE

### Precautions for Safe Handling

#### **Advice on Safe Handling**

Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid breathing vapor. Use only outdoors or in a well-ventilated area. At room temperature, general mechanical room ventilation is sufficient. Local ventilation is recommended at points where heated material may vent fumes to the workplace.

#### **General Hygiene**

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### Other Precautions

Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperatures and pressures, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published autoignition temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

### Conditions for Safe Storage (Including any Incompatibilities)

#### **Storage Conditions**

Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up. Avoid excessive temperatures.

#### **Packaging Materials**

Do not transfer to unmarked containers. Reuse of empty drums or containers is not recommended. Dispose of all empty containers properly, in accordance with federal, state and local regulations.

#### **Incompatible Materials**

Strong oxidizing agents, strong acids, strong bases, Lewis acids, amines

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

### Control Parameters

#### **Engineering Controls**

Ensure adequate ventilation, especially in confined areas.

### Individual Protection Measures

#### **Eye/Face Protection**

Wear approved chemical safety goggles.

#### **Skin and Body Protection**

Wear chemical resistant, impermeable gloves. Use chemical resistant apron or other impermeable clothing, if needed, to avoid contaminating regular clothing.

#### **Respiratory Protection**

No protection is ordinarily required under normal conditions of use with adequate ventilation. In case of inadequate ventilation, wear respiratory protection.

#### **General Hygiene**

Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

<b>Physical State</b>	Liquid	<b>Odor</b>	Slight characteristic odor
<b>Appearance</b>	Colorless to light yellow liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Colorless to light yellow		

  

<u>Property</u>	<u>Values</u>	<u>Remarks/Method</u>
pH	Not determined	
Melting Point/Freezing Point	-20 °C (-4 °F)	
Boiling Point/Boiling Range	188 °C (370 °F)	
Flash Point	202 °C (396 °F)	Cleveland open cup
Evaporation Rate	Not applicable	
Flammability (Solid, Gas)	n/a-liquid	
Upper Flammability Limit	Not applicable	
Lower Flammability Limit	Not applicable	
Vapor Pressure	Not determined	
Relative Vapor Density	8.7 g / L	(air = 1)
Specific Gravity	1.17	(water = 1) @ 25 °C (77 °F)
Water Solubility	Very slightly soluble	@ 25 °C (77 °F)
Solubility in Other Solvents	Not determined	
Partition Coefficient (n-Octanol/Water)	Not determined	
Auto-ignition Temperature	375 °C (707 °F)	
Decomposition Temperature	288 °C (550 °F)	Initiation
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions

### Chemical Stability

Stable under recommended storage conditions

### Possibility of Hazardous Reactions

None under normal processing

#### **Hazardous Polymerization**

Hazardous polymerization does not occur unless catalyzed by amines, strong acids or strong bases.

### Conditions to Avoid

Exposure to elevated temperatures may cause decomposition of product.

### Incompatible materials

Strong oxidizing agents, strong acids, strong bases, Lewis acids, amines

### Hazardous Decomposition Products

Carbon monoxide, carbon dioxide

## 11. TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure

<b>Inhalation</b>	Breathing large amounts of chemical vapor may be harmful.
<b>Eye Contact</b>	Exposure may cause serious eye irritation.
<b>Ingestion</b>	May be harmful if swallowed. Consult a physician.
<b>Skin Contact</b>	Exposure may cause skin irritation.

### Information on Acute Toxicological Effects

Chemical Name	Oral LD50	Dermal LD50	Other Dermal
3,4-Epoxy cyclohexylmethyl 3,4-epoxy cyclohexane carboxylate 2386-87-0	5000 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	Skin irritation: mild ( Rabbit ) Ames test: positive

### Information on Physical, Chemical and Toxicological Effects

<b>Symptoms</b>	Please see Section 4 of this SDS for symptoms.
-----------------	--

### Delayed and Immediate Effects and also Chronic Effects from Short-term and Long-term Exposure

<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC, ACGIH or NTP. This product may find application in combination with diglycidyl ether of bisphenol A (DGEBA). Available evidence indicates that this product, alone or in mixtures with DGEBA, is unlikely to have carcinogenic effects and presents no significant hazard when normal practices of avoiding skin contact are followed.
<b>Mutagenicity</b>	This product has exhibited evidence of mutagenic activity in several <i>in vitro</i> test systems.
<b>STOT – Single Exposure</b>	Not determined

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life

Chemical Name	Fish LC50	Crustacea EC50
3,4-Epoxy cyclohexylmethyl 3,4-epoxy cyclohexane carboxylate 2386-87-0	Oncorhynchus mykiss 24 mg/L 96 h	Daphnia magna 40 mg/L 48 h

### Persistence/Degradability

Not determined

### Bioaccumulation

Not determined

### Mobility

Not determined

### Other Adverse Effects

Not determined

### 13. DISPOSAL CONSIDERATIONS

#### Waste Treatment Methods

<b>Disposal of Wastes</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations. Commission a waste disposal company or licensed local public body to dispose of the material.
<b>Contaminated Packaging</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.

### 14. TRANSPORT INFORMATION

#### Regulatory Entity

<b>DOT</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG</b>	Not regulated

#### Note

Please see current shipping paper for most up-to-date shipping information, including exemptions and special circumstances.

### 15. REGULATORY INFORMATION

#### International Inventories

**LISTED** TSCA, DSL/NDSL, EINECS/ELINCS, ENCS, IECSC, KECI, PICCS, TCSI, AICS, NZIoC

#### Legend:

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*  
*DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*  
*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*  
*ENCS - Japan Existing and New Chemical Substances*  
*IECSC - China Inventory of Existing Chemical Substances*  
*KECI - Korea Existing Chemicals Inventory*  
*PICCS - Philippines Inventory of Chemicals and Chemical Substances*  
*TCSI - Taiwan Chemical Substance Inventory*  
*AICS - Australian Inventory of Chemical Substances*  
*NZIoC - New Zealand Inventory of Chemicals*

#### United States Federal Regulations

<b>CERCLA</b>	This material, as supplied, does not contain any substances with known CAS numbers that are regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).
<b>SARA 302</b>	No chemicals with known CAS numbers in this material are subject to the reporting requirements of SARA Title III, Section 302.
<b>EPCRA</b>	This product does not contain any chemicals with known CAS numbers that are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-know Act of 1986 (40 CFR 372).

#### United States State Regulations

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

#### United States Right-to-know Regulations

Chemical Name	New Jersey	Pennsylvania
3,4-Epoxy cyclohexylmethyl 3,4-epoxycyclohexane carboxylate 2386-87-0	X	X

**16. OTHER INFORMATION**

<b><u>NEPA</u></b>	<b>Health Hazards</b> 1	<b>Flammability</b> 1	<b>Instability</b> 1	<b>Special Hazards</b> Not determined
<b><u>HMIS</u></b>	<b>Health Hazards</b> 1	<b>Flammability</b> 1	<b>Physical Hazards</b> 1	<b>Personal Protection</b> Not determined

<b>Issue Date</b>	20-August-2008
<b>Revision Date</b>	02-September-2020
<b>Revision Note</b>	Reviewed/updated
<b>GHS Version</b>	2

**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 guide 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.

**End of Safety Data Sheet**