



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
OSHA HCS2012

Revision date 30-Apr-2024

Revision Number 1.01

## 1. Identification

### Product identifier

**Product Name** Bis(2-chloroethoxy)methane

### Other means of identification

**Product Code(s)** TRC-B418520-1G

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended use** This product is for research and development only

**Restrictions on use** Not to be used for human or animal consumption

### Details of the supplier of the safety data sheet

#### Supplier Address

VHG  
LGC Standards  
276 Abby Road  
Manchester, NH 03103  
UNITED STATES OF AMERICA

Tel : +1 (603) 622-7660  
Fax : +1 (603) 622-5180  
Email : lgcusa@lgcgroup.com

Web : lgcstandards.com

**E-mail** sds-request@lgcgroup.com

### Emergency telephone number

#### **Emergency Telephone**

For Hazardous Materials or Dangerous Goods Incident  
Spill, Leak, Fire Exposure, or Accident  
Call CHEMTREC:  
USA & Canada 1-800-424-9300  
Rest of the world +1 703-741-5970

## 2. Hazard(s) identification



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## Classification

Classified according to OSHA.

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 2

## Hazards not otherwise classified (HNOC)

Not applicable

## Label elements

### **Danger**

### Hazard statements

Classified according to OSHA.  
Toxic if swallowed  
Harmful in contact with skin  
Fatal if inhaled  
Causes skin irritation  
Causes serious eye irritation  
Causes damage to organs  
May cause damage to organs through prolonged or repeated exposure



### **Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection  
Wear protective gloves/clothing and eye/face protection

### **Precautionary Statements - Response**



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IF exposed: Call a POISON CENTER or doctor  
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: Wash with plenty of water and soap  
Call a POISON CENTER or doctor if you feel unwell  
Take off contaminated clothing and wash it before reuse  
If skin irritation occurs: Get medical advice/attention  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Immediately call a POISON CENTER or doctor  
IF SWALLOWED: Immediately call a POISON CENTER or doctor  
Rinse mouth

## Precautionary Statements - Storage

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

## Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## Other information

No information available.

## 3. Composition/information on ingredients

### Substance

Formula C<sub>5</sub>H<sub>10</sub>Cl<sub>2</sub>O<sub>2</sub>

Chemical name	CAS No.	Weight-%	Trade secret
bis(2-chloroethoxy)methane	111-91-1	100	*

## 4. First-aid measures

### Description of first aid measures

#### General advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

#### Inhalation

If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.

#### Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If



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symptoms persist, call a physician. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

## Skin contact

If symptoms persist, call a physician. Wash off immediately with soap and plenty of water for at least 15 minutes.

## Ingestion

Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

## Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not breathe vapor or mist. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

## Most important symptoms and effects, both acute and delayed

### Symptoms

Coughing and/ or wheezing. Difficulty in breathing. May cause redness and tearing of the eyes. Burning sensation.

## Indication of any immediate medical attention and special treatment needed

### Note to physicians

Treat symptomatically.

## 5. Fire-fighting measures

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Large Fire

CAUTION: Use of water spray when fighting fire may be inefficient.

### Unsuitable extinguishing media

Do not scatter spilled material with high pressure water streams.

### Specific hazards arising from the chemical

No information available.

### Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

### Special protective equipment and precautions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. Accidental release measures



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## Personal precautions, protective equipment and emergency procedures

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Do not breathe vapor or mist. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other information** Refer to protective measures listed in Sections 7 and 8.

## Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

## 7. Handling and storage

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

## 8. Exposure controls/personal protection

### Control parameters

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

### **Biological occupational exposure limits**

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



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## Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

## Individual protection measures, such as personal protective equipment

**Eye/face protection** Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

**Hand protection** The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374. Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing.

**Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Environmental exposure controls** Do not allow into any sewer, on the ground or into any body of water.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection. Do not breathe vapor or mist. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

**Physical state** Liquid  
**Appearance** Oily  
**Color** colorless  
**Odor** Characteristic  
**Odor threshold** No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	



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Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Relative vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
<u>Other information</u>		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	173.03	
VOC content	No information available	
Liquid Density	No information available	
Bulk density	No information available	

## 10. Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Excessive heat.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous decomposition products	None known based on information supplied.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

Inhalation	Specific test data for the substance or mixture is not available. Fatal if inhaled. (based on components). May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.



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## Skin contact

Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

## Ingestion

Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Toxic if swallowed. (based on components).

## Symptoms related to the physical, chemical and toxicological characteristics

### Symptoms

Coughing and/ or wheezing. Difficulty in breathing. Redness. May cause redness and tearing of the eyes.

### Acute toxicity

### Numerical measures of toxicity

## Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
bis(2-chloroethoxy)methane 111-91-1	= 65 mg/kg ( Rat )	> 2000 mg/kg ( Rat ) 1000 - 2000 mg/kg ( Rat )	0.05 - 0.5 mg/L ( Rat ) 4 h

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

### Skin corrosion/irritation

Classification based on data available for ingredients. Causes skin irritation. May cause skin irritation.

### Serious eye damage/eye irritation

Classification based on data available for ingredients. Causes serious eye irritation.

### Respiratory or skin sensitization

No information available.

### Germ cell mutagenicity

No information available.

### Carcinogenicity

No information available.

### Reproductive toxicity

No information available.

### STOT - single exposure

Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been



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determined to cause systemic target organ toxicity from acute exposure. (STOT SE).  
Causes damage to organs if swallowed. Causes damage to organs in contact with skin.

**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard** No information available.

**Other adverse effects** No information available.

**Interactive effects** No information available.

## 12. Ecological information

### Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
bis(2-chloroethoxy)methane 111-91-1	-	LC50: 155 - 217mg/L (96h, Pimephales promelas)	-	EC50: 175 - 231mg/L (48h, Daphnia magna)

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

### Component Information

Chemical name	Partition coefficient
bis(2-chloroethoxy)methane 111-91-1	1.6

**Other adverse effects** No information available.

## 13. Disposal considerations

### Disposal methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.



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US EPA Waste Number U024

## 14. Transport information

### DOT

UN number or ID number	UN2810
Extended proper shipping name	Toxic liquids, organic, n.o.s. (bis(2-chloroethoxy)methane)
Transport hazard class(es)	6.1
Packing group	II
Reportable Quantity (RQ)	(bis(2-chloroethoxy)methane: RQ (kg)= 454.00) bis(2-chloroethoxy)methane: RQ (lb)= 1000.00
Reportable quantity (kg) (calculated)	bis(2-chloroethoxy)methane: RQ (kg)= 454.00
Reportable quantity (lbs) (calculated)	bis(2-chloroethoxy)methane: RQ (lb)= 1000.00
Special Provisions	IB2, T11, TP2, TP13, TP27
DOT Marine Pollutant	NP
Description	UN2810, Toxic liquids, organic, n.o.s. (bis(2-chloroethoxy)methane), 6.1, II
Emergency Response Guide Number	153

### TDG

UN number or ID number	UN2810
UN proper shipping name	Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane)
Transport hazard class(es)	6.1
Packing group	II
Special Provisions	16
Marine pollutant	NP
Description	UN2810, Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane), 6.1, II

### MEX

UN number or ID number	UN2810
UN proper shipping name	Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane)
Transport hazard class(es)	6.1
Packing group	II
Technical Name	bis(2-chloroethoxy)methane
Description	UN2810, Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane), 6.1, II
Special Provisions	274

### IATA

UN number or ID number	UN2810
UN proper shipping name	Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane)
Transport hazard class(es)	6.1
Packing group	II
Technical Name	bis(2-chloroethoxy)methane
Description	UN2810, Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane), 6.1, II
Special Provisions	A3, A4, A137



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ERG Code	6L
<b>IMDG</b>	Not regulated
UN number or ID number	UN2810
UN proper shipping name	Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane)
Transport hazard class(es)	6.1
Packing group	II
EmS-No.	F-A, S-A
Special Provisions	274
Marine pollutant	NP
Description	UN2810, Toxic liquid, organic, n.o.s. (bis(2-chloroethoxy)methane), 6.1, II

## 15. Regulatory information

### International Inventories

**TSCA** LGC, to the best of its ability, has confirmed that the chemical substances in this product are listed as "Active" in the EPA (Environmental Protection Agency) "TSCA Inventory Notification (Active-Inactive) Requirements Rule" ("the Final Rule") of Feb 2019, as amended Feb 2021."

Chemical name	CAS No.	Inventory Listing Status	Commercial Activity Designation
bis(2-chloroethoxy)methane	111-91-1	Present	Active

<b>DSL/NDL</b>	Contact supplier for inventory compliance status.
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status.
<b>ENCS</b>	Contact supplier for inventory compliance status.
<b>IECSC</b>	Contact supplier for inventory compliance status.
<b>KECL</b>	Contact supplier for inventory compliance status.
<b>PICCS</b>	Contact supplier for inventory compliance status.
<b>AIIC</b>	Contact supplier for inventory compliance status.

### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - 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  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AIIC** - Australian Inventory of Chemical Substances



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## US Federal Regulations

### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
bis(2-chloroethoxy)methane - 111-91-1	1.0

### SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

### CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
bis(2-chloroethoxy)methane 111-91-1	-	X	X	-

### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
bis(2-chloroethoxy)methane 111-91-1	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

## US State Regulations

### California Proposition 65

This product does not contain any Proposition 65 chemicals.

## U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
bis(2-chloroethoxy)methane 111-91-1	X	X	X

## U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable



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## 16. Other information

<b>NFPA</b>	<b>Health hazards</b> 4	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Special hazards</b> -
<b>HMIS</b>	<b>Health hazards</b> 4 *	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal protection</b> X
<i>Chronic Hazard Star Legend</i>		<i>* = Chronic Health Hazard</i>		

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation

### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AELG(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

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Revision Note No information available.

### Disclaimer

The information in this Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, we cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. We warrant that the chemical meets the specifications set forth on the label. We (LGC/VHG/ARMI) disclaim any other warranties, expressed or implied with regard to the product supplied hereunder, its merchantability or its fitness for a particular purpose. The user should recognize that this product can cause severe injury



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and even death, especially if improperly handled or the known dangers of use are not heeded. Read all precautionary information.

**End of Safety Data Sheet**