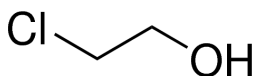


SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Trade name : 2-CHLOROETHANOL AR
IUPAC name : 2-Chloroethan-1-ol
EC Index-No. : 603-028-00-7
EC-No. : 203-459-7
CAS-No. : 107-07-3
Product code : 00074
Formula : C₂H₅ClO
Chemical structure :



Synonyms : Ethylene chlorhydrin, β-Chloroethanol, 2-Chloroethyl alcohol, 2-Monochloroethanol

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai
INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

Emergency number : + 91 22 6663 6663 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3	H226
Acute toxicity (oral), Category 2	H300
Acute toxicity (dermal), Category 1	H310
Acute toxicity (inhal.), Category 2	H330

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. Fatal in contact with skin. Fatal if inhaled. Fatal if swallowed.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS06

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Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Signal word (CLP)	: Danger
Hazard statements (CLP)	: H226 - Flammable liquid and vapour. H300+H310+H330 - Fatal if swallowed, in contact with skin or if inhaled.
Precautionary statements (CLP)	: P260 - Do not breathe dust, fume, gas, mist, spray, vapours. P264 - Wash hands, forearms and face thoroughly after handling. P280 - Wear protective clothing, eye protection, face protection. P284 - Wear respiratory protection. P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type	: Mono-constituent
Name	: 2-CHLOROETHANOL
CAS-No.	: 107-07-3
EC-No.	: 203-459-7
EC Index-No.	: 603-028-00-7

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice. Call a physician immediately. Call a doctor.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Rinse eyes with water as a precaution. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Rinse mouth out with water. If you feel unwell, seek medical advice. Rinse mouth. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: Fatal if inhaled.
Symptoms/effects after skin contact	: Fatal in contact with skin.
Symptoms/effects after ingestion	: Fatal if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂). Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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5.2. Special hazards arising from the substance or mixture

- Fire hazard : Flammable liquid and vapour.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel. No open flames, no sparks, and no smoking. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust, fume, gas, mist, spray, vapours.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Use personal protective equipment as required. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Stop release.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material. Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not get in eyes, on skin, or on clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Do not breathe dust, fume, gas, mist, spray, vapours.
Hygiene measures : Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in original container. Keep container tightly closed. Store in a dry place. Store in a well-ventilated place. Keep cool. Store locked up.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses

8.2.2.2. Skin protection

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

Wear appropriate mask. [In case of inadequate ventilation] wear respiratory protection.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid.
Molecular mass	: 80.51 g/mol
Colour	: Colourless.
Odour	: sweet pleasant.
Odour threshold	: No data available
pH	: No data available

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Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: -65 °C
Boiling point	: 129 – 130 °C
Flash point	: 55 °C
Auto-ignition temperature	: 425 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 7 hPa at 20 °C
Relative vapour density at 20 °C	: 2.78 (Air = 1.0)
Relative density	: No data available
Density	: 1.2 g/cm ³ at 20°C
Solubility	: Water: Easily miscible in cold water
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: 2.833 mm ² /s
Viscosity, dynamic	: 3.4 mPa.s at 20°C
Explosive properties	: No data available
Oxidising properties	: No data available
Lower explosive limit (LEL)	: 5 vol %
Upper explosive limit (UEL)	: 16 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour.

10.2. Chemical stability

Flammable liquid and vapour.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Direct sunlight. Overheating. Open flame. Heat. Sparks. Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral)	: Fatal if swallowed.
Acute toxicity (dermal)	: Fatal in contact with skin.
Acute toxicity (inhalation)	: Fatal if inhaled.
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

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STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

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Viscosity, kinematic : 2.833 mm²/s

Potential adverse human health effects and symptoms : Fatal if swallowed, Fatal in contact with skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information : Flammable vapours may accumulate in the container.
Ecology - waste materials : Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1 UN number

UN-No. (ADR) : UN 1135
UN-No. (IMDG) : UN 1135
UN-No. (IATA) : UN 1135
UN-No. (ADN) : UN 1135
UN-No. (RID) : UN 1135

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14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ETHYLENE CHLOROHYDRIN
Proper Shipping Name (IMDG)	: ETHYLENE CHLOROHYDRIN
Proper Shipping Name (IATA)	: Ethylene chlorohydrin
Proper Shipping Name (ADN)	: ETHYLENE CHLOROHYDRIN
Proper Shipping Name (RID)	: ETHYLENE CHLOROHYDRIN
Transport document description (ADR)	: UN 1135 ETHYLENE CHLOROHYDRIN, 6.1 (3), I, (C/D)
Transport document description (IMDG)	: UN 1135 ETHYLENE CHLOROHYDRIN, 6.1 (3), I (60°C o.c.)
Transport document description (IATA)	: UN 1135 Ethylene chlorohydrin, 6.1 (3)
Transport document description (ADN)	: UN 1135 ETHYLENE CHLOROHYDRIN, 6.1 (3), I
Transport document description (RID)	: UN 1135 ETHYLENE CHLOROHYDRIN, 6.1 (3), I

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 6.1 (3)
Danger labels (ADR)	: 6.1, 3



IMDG

Transport hazard class(es) (IMDG)	: 6.1 (3)
Danger labels (IMDG)	: 6.1, 3



IATA

Transport hazard class(es) (IATA)	: 6.1 (3)
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ADN

Transport hazard class(es) (ADN)	: 6.1 (3)
Danger labels (ADN)	: 6.1, 3



RID

Transport hazard class(es) (RID)	: 6.1 (3)
Danger labels (RID)	: 6.1, 3



14.4. Packing group

Packing group (ADR)	: I
Packing group (IMDG)	: I
Packing group (IATA)	: Not applicable
Packing group (ADN)	: I
Packing group (RID)	: I

14.5. Environmental hazards

Dangerous for the environment	: No
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Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : TF1
Special provisions (ADR) : 354
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P602
Mixed packing provisions (ADR) : MP8, MP17
Portable tank and bulk container instructions (ADR) : T20
Portable tank and bulk container special provisions (ADR) : TP2
Tank code (ADR) : L10CH
Tank special provisions (ADR) : TU14, TU15, TE19, TE21
Vehicle for tank carriage : FL
Transport category (ADR) : 1
Special provisions for carriage - Loading, unloading and handling (ADR) : CV1, CV13, CV28
Special provisions for carriage - Operation (ADR) : S2, S9, S14
Hazard identification number (Kemler No.) : 663
Orange plates :



Tunnel restriction code (ADR) : C/D
EAC code : •2W
APP code : A(fl)

Transport by sea

Special provisions (IMDG) : 354
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P602
Tank instructions (IMDG) : T20
Tank special provisions (IMDG) : TP2, TP13
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : D
Stowage and handling (IMDG) : SW2
Flash point (IMDG) : 60°C o.c.
Properties and observations (IMDG) : Colourless flammable liquid with a faint, ethereal odour. Flashpoint: 60°C o.c. Explosive limits: 4.9% to 15.9% Miscible with water. When involved in a fire, evolves extremely toxic (phosgene) and corrosive (hydrogen chloride) fumes. Highly toxic if swallowed, by skin contact or by inhalation.
MFAG-No : 131

Air transport

PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : Forbidden
CAO max net quantity (IATA) : Forbidden
ERG code (IATA) : 6F

Inland waterway transport

Classification code (ADN) : TF1
Special provisions (ADN) : 354, 802
Limited quantities (ADN) : 0

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Excepted quantities (ADN)	: E0
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, EX, TOX, A
Ventilation (ADN)	: VE01, VE02
Number of blue cones/lights (ADN)	: 2

Rail transport

Classification code (RID)	: TF1
Special provisions (RID)	: 354
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P602
Mixed packing provisions (RID)	: MP8, MP17
Portable tank and bulk container instructions (RID)	: T20
Portable tank and bulk container special provisions (RID)	: TP2
Tank codes for RID tanks (RID)	: L10CH
Special provisions for RID tanks (RID)	: TU14, TU15, TU38, TE21, TE22
Transport category (RID)	: 1
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW28, CW31
Hazard identification number (RID)	: 663

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)	
Reference code	Applicable on
3(a)	2-CHLOROETHANOL AR
3(b)	2-CHLOROETHANOL AR
40.	2-CHLOROETHANOL AR

REACH Annex XIV (Authorisation List)

2-CHLOROETHANOL AR is not on the REACH Annex XIV List

REACH Candidate List (SVHC)

2-CHLOROETHANOL AR is not on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

2-CHLOROETHANOL AR is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

POP Regulation (Persistent Organic Pollutants)

2-CHLOROETHANOL AR is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

2-CHLOROETHANOL is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

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Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

15.1.2. National regulations

Germany

- Water hazard class (WGK) : WGK 3, Highly hazardous to water (Classification according to AwSV; ID No. 229).
Chemicals Prohibition Ordinance (ChemVerbotsV) : This product is subject to ChemVerbotsV Annex 2 Entry 1. The following requirements must be observed: authorization requirement (according to § 6 paragraph 1 sentence 1), basic requirements for carrying out the delivery (according to § 8 paragraph 1, 3 and 4), identification and documentation (according to § 9 paragraph 1 to 3) and exclusion of the shipping route (according to § 10).
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

- SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Denmark

- Class for fire hazard : Class II-1
Store unit : 5 liter
Classification remarks : R10 <H226;H300+H310+H330>; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

Switzerland

- Storage class (LK) : LK 3 - Flammable liquids

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer

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Abbreviations and acronyms:	
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Acute Tox. 1 (Dermal)	Acute toxicity (dermal), Category 1
Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.