

Chemical Safety Data Sheet MSDS / SDS

Ethane SDS

Revision Date:2024-04-25 Revision Number:1

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

Product name: Ethane
CAS: 74-84-0

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.
Uses advised against: none

Company Identification

Company: Chemicalbook.in
Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090
Telephone: +91 9550333722

SECTION 2: Hazards identification**Classification of the substance or mixture**

Gases under pressure: Liquefied gas
Flammable gases, Category 1A, Flammable gas

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H220 Extremely flammable gas

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 In case of leakage, eliminate all ignition sources.

Storage

P410+P403 Protect from sunlight. Store in a well-ventilated place.

P403 Store in a well-ventilated place.

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: Ethane

Common names and synonyms: Ethane

CAS number: 74-84-0
EC number: 200-814-8
Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

In high vapor concentrations, can act as simple asphyxiant. Liquid causes severe frostbite. (USCG, 1999)
Excerpt from ERG Guide 115 [Gases - Flammable (Including Refrigerated Liquids)]: Vapors may cause dizziness or asphyxiation without warning. Some may be irritating if inhaled at high concentrations. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire may produce irritating and/or toxic gases. (ERG, 2016)

Indication of immediate medical attention and special treatment needed, if necessary

FIRST AID: Skin--ON CONTACT WITH LIQUID FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention; Eyes--ON CONTACT WITH LIQUID FROSTBITE. First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

SECTION 5: Firefighting measures

Suitable extinguishing media

Wear self contained breathing apparatus for fire fighting if necessary.

Specific hazards arising from the chemical

Excerpt from ERG Guide 115 [Gases - Flammable (Including Refrigerated Liquids)]: EXTREMELY FLAMMABLE. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapors from liquefied gas are initially heavier than air and spread along ground. CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.) Vapors may travel to source of ignition and flash back. Cylinders exposed to fire may vent and release flammable gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket. (ERG, 2016)

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Special protective actions for fire-fighters

Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out. In other cases extinguish with water spray, powder. In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Ventilation. Remove all ignition sources. NEVER direct water jet on liquid.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Ventilation. Remove all ignition sources. NEVER direct water jet on liquid.

Methods and materials for containment and cleaning up

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Ventilation. Remove all ignition sources. NEVER direct water jet on liquid.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding) if in liquid state. Use non-sparking handtools. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. Cool. Separated from strong oxidants and halogens. Keep container tightly closed in a dry and well-ventilated place.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Ethane			
CAS No.	74-84-0			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Finland	1000	?	?	?
New Zealand	(1)	?	?	?
	Remarks			
New Zealand	(1) Simple asphyxiant - may present an explosion hazard			

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield.

Skin protection

Cold-insulating gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Ethane is a colorless odorless gas. It is easily ignited. The vapors are heavier than air. It can asphyxiate by the displacement of air. Under prolonged exposure to fire or intense heat the containers may rupture violently and rocket. Contact with the liquid may cause frostbite.
Colour:	Colorless gas
Odour:	Odorless
Melting point/freezing point:	-172°C(lit.)
Boiling point or initial boiling point and boiling range:	-88°C(lit.)
Flammability:	Extremely flammable.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 3.0% by volume; Upper flammable limit: 12.5% by volume.
Flash point:	-135°C

Auto-ignition temperature:	881°F
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	6.4 at 200 K; 9.4 at 300 K; 12.2 at 400 K; 14.8 at 500 K; 18.1 at 600 K (all in uPa.s)
Solubility:	In water, 60.2 mg/L at 25 deg C
Partition coefficient n-octanol/water:	log Kow = 1.81
Vapour pressure:	37.95 atm (21.1 °C)
Density and/or relative density:	0.362g/mL at 20°C(lit.)
Relative vapour density:	1.05 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Reacts violently with halogens and strong oxidants. This increases fire and explosion hazard.

Chemical stability

no data available

Possibility of hazardous reactions

Flammable in the presence of an oxidizing gas (eg air), a source of ignition, and when the concentration of the gas is between the lower and upper explosive limits. Keep away from heat/sparks/open flame/hot surface/oxidizing gas. No smoking. The gas mixes well with air, explosive mixtures are easily formed. As a result of flow, agitation, etc., electrostatic charges can be generated. Saturated aliphatic hydrocarbons, such as ETHANE, may be incompatible with strong oxidizing agents like nitric acid.

Charring of the hydrocarbon may occur followed by ignition of unreacted hydrocarbon and other nearby combustibles. In other settings, aliphatic saturated hydrocarbons are mostly unreactive. They are not affected by aqueous solutions of acids, alkalis, most oxidizing agents, and most reducing agents. Peroxidizable

Conditions to avoid

no data available

Incompatible materials

Chlorine dioxide mixed with ... ethane ... always explodes spontaneously.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. -Carbon oxides.

SECTION 11: Toxicological information**Acute toxicity**

Oral: no data available

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

Rapid evaporation of the liquid may cause frostbite.

STOT-repeated exposure

no data available

Aspiration hazard

On loss of containment this substance can cause suffocation by lowering the oxygen content of the air in confined areas.

SECTION 12: Ecological information**Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Within 24 hr, ethane was oxidized to its corresponding alcohol, ethanol, by cell suspensions of over 20 methyltrophic organisms isolated from lake water and soil samples(1,2). The respective gas exchange and degradation rate constants were 0.83×10^{-5} sq cm sec⁻¹ and 0.027 day⁻¹ for ethane contained in a model estuarine ecosystem at 10 deg C and a salinity of 30 parts per thousand; the corresponding biodegradation half-life was greater than 87 days(3). At 20 deg C and a salinity of 30, the respective gas exchange and degradation rate constants were 1.132×10^{-5} sq cm sec⁻¹ and 0.062 day⁻¹; the corresponding biodegradation half life for n-ethane ranged from 21 to 33 days(3).

Bioaccumulative potential

An estimated BCF of 7.3 was calculated in fish for ethane(SRC), using a log Kow of 1.81(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc of ethane is estimated as 37(SRC), using a log Kow of 1.81(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that ethane is expected to have very high mobility in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1035 (For reference only, please check.)

IMDG: UN1035 (For reference only, please check.)

IATA: UN1035 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ETHANE (For reference only, please check.)

IMDG: ETHANE (For reference only, please check.)
IATA: ETHANE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 2.1 (For reference only, please check.)
IMDG: 2.1 (For reference only, please check.)
IATA: 2.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: (For reference only, please check.)
IMDG: (For reference only, please check.)
IATA: (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

High concentrations in the air cause a deficiency of oxygen with the risk of unconsciousness or death. Check oxygen content before entering area. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. Other UN number : 1961 (refrigerated liquid), Hazard class : 2.1.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any