

GPS Safety Summary

Substance Name:

Ethylmercaptan

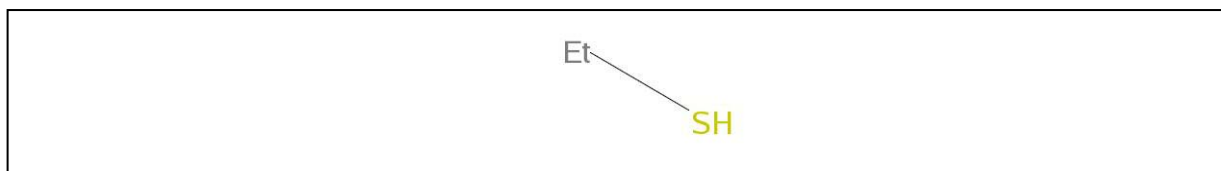
1. General Statement

Ethylmercaptan is a colourless liquid with a characteristic odour. It is used injected in gas, as an anti-coking agent or as an intermediate in manufacture of bulk, large scale substances and fine chemicals. Products containing ethylmercaptan are commercially available to industrial customers only.

Flammable, harmful if swallowed and inhaled, toxic to aquatic fauna with long lasting effects, this substance must be carefully handled and stored to preserve human health and environment.

2. Chemical Identity

Name: Ethylmercaptan
Brand names: Ethylmercaptan
Chemical name (IUPAC): Ethanethiol
CAS number(s): 75-08-1
EC number (optional): 200-837-3
Molecular formula (optional): C₂H₆S
Structure (optional):



3. Use and applications

Main applications:

- Use is as odorant to ensure the safety of the life cycle of natural gas.
- Use in petrochemical industry to reduce the number of decoking operations.
- Use as an intermediate.

4. Physical / Chemical properties

Property	Value
Physical state	Liquid at 20°C and 1013 hPa
Colour	Colourless
Odour	Mercaptans

Molecular weight	62.13 g/mol
Density	839 kg/m ³ at 20°C
Vapour pressure	589 hPa at 20°C
Boiling point	35°C at 1013 hPa
Melting point	-148 to -144.4°C at 1013 hPa
Flammability (optional) H statement in case classified	Lower flammable limit: 2.8% (V) Upper flammable limit: 18% (V)
Flash point	< -30°C at 1013 hPa (closed cup)
Self-ignition temperature	299°C at 1013 hPa
Explosive / oxidizing properties	Explosive and oxidizing properties not expected based on structure
Water solubility	8.86 g/l at 20°C
Octanol-water partition coefficient (Log K _{ow})	1.50 at 20°C

Based on available data and according to the list of harmonised classification and labelling of hazardous substances of European regulation 1272/2008 (Annex VI Table 3.1), ethylmercaptan is classified regarding physical and chemicals hazards.

5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Harmful if swallowed and by inhalation. Slightly harmful in contact with skin.
Irritation / corrosion Skin / eye/ respiratory tract	Slightly irritating for skin and eyes. May cause transitory irritation to respiratory system at high vapour concentrations.
Sensitisation	No data available.
Toxicity after repeated exposure Oral / inhalation / dermal	Inhalation studies performed with analogue substances did not suggest a significant systemic toxicity following repeated exposure but a possible irritation to the respiratory system.
Genotoxicity / Mutagenicity	No evidence of genetic toxicity.
Carcinogenicity	No data available.
Reproductive / Developmental Toxicology	Studies performed with analogue substances did not suggest toxic effects on fertility or on the development of offspring.

6. Environmental Effects

Effect Assessment	Result
Aquatic Toxicity	Very toxic to aquatic invertebrates and toxic to fish.

Fate and behaviour	Result
Biodegradation	Not readily biodegradable.
Bioaccumulation potential	Not expected to bioaccumulate.
PBT / vPvB conclusion	Not considered to be either PBT or vPvB.

Based on its physico-chemical properties, ethylmercaptan is water soluble, has a high potential for volatility, a low potential of bioaccumulation and is not readily biodegradable. If released into the environment, the substance is expected to partition predominantly into aquatic compartment and not to adsorb on soil or sediment.

7. Exposure

7.1 Human health

The most likely route of human exposure (workers) to ethylmercaptan is through inhalation and/or to a much lesser extent dermal contact. In industrial settings, ingestion is not an anticipated route of exposure.

Harmful if swallowed and inhaled, ethylmercaptan can also be irritating to respiratory system in case of long term exposure.

The probability of exposure to workers is expected to be low because this product is manufactured in enclosed controlled environment and is transported in well sealed containers. Due to its low odour threshold leaks can be detected quickly and thus appropriate measures can be taken to limit occupational exposure. However, workers may be exposed during (un)loading, mixing, sampling, analysis or maintenance operations and particularly in case of batch processes. The exposure must be kept as low as possible by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers.

For more information about conditions recommended, refer to the extended safety data sheet.

7.2 Environment

Due to the potential of this substance to cause significant harm to aquatic environments, care should be taken to avoid releases of these products to sewage, drainage systems, water bodies and to the atmosphere. Spillage shall be quickly collected in the event of an accidental release. More information about release measures and accidental release measures are available in the extended safety data sheet.

8. Risk Management recommendations

8.1 Human health

For industrial uses of ethylmercaptan, workers must be well informed and trained and must refer to the extended Safety Data Sheet (eSDS).

Protection	Eye/Face protection:	Safety glasses
	Skin protection:	Protective suit
	Hand protection:	Gloves
	Respiratory protection:	In case of insufficient ventilation, wear a suitable respiratory equipment.
Engineering controls	Ensure sufficient air exchange and/or exhaust in work area. Ensure that eyewash stations and safety showers are close to workstation locations.	

Hygiene measures must be respected and incompatible materials must be clearly identified.

8.2 Environment

Due to the potential of this substance to cause significant harm to aquatic environments this substance and all industrial releases that may contain the substance must be treated to avoid any exposure to the environment.

Eliminate by incineration in accordance with local and national regulations.

9. Regulatory Information / Classification and Labelling

9.1 Regulatory Information




This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)
- Dossier HPV (SIAM 30, April 2010)

9.2 Classification and labelling

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the eSDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use. Substances registered for REACH are classified according CLP (EC) 1272/2008, implementation of the GHS in the European Union.

Classification
<u>According to REGULATION (EC) no 1272/2008:</u> Flammable liquids cat. 2 (H225: Highly flammable liquid and vapour) Oral: Acute toxicity cat. 4 (H302: Harmful if swallowed) Inhalation: Acute toxicity cat. 4 (H332: Harmful if inhaled) Acute aquatic toxicity cat. 1 (H400: Very toxic to aquatic life) Chronic aquatic toxicity cat. 1 (H410: Very toxic to aquatic life with long lasting effects)

Pictogram	
— GHS03: Flame	
— GHS07: Exclamation mark	
— GHS09: Environment	
Hazard statement	
H225: Highly flammable liquid and vapour. H302: Harmful if swallowed. H332: Harmful if inhaled. H410: Very toxic to aquatic life with long lasting effects.	
Alternative classification according to Globally Harmonized System (GHS)	
None	

10. Contact Information within Company

For further information on this substance or product safety summary in general, please contact:

- ICCA portal where the GPS Safety Summary is posted:
<http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/>

11. Date of Issues / Revision

- Date of issue: 2013/02/10
- Date of revision:

12. Disclaimer

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