

GPS Safety Summary

Substance Name:

Monoethylamine

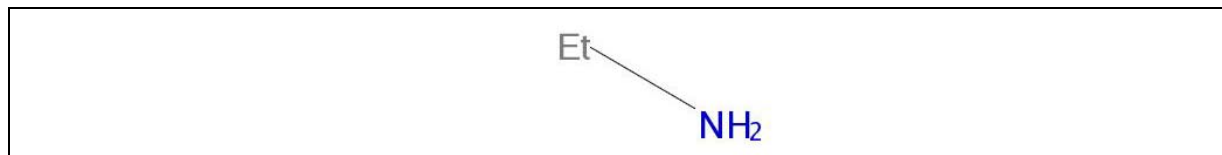
1. General Statement

Monoethylamine is a colourless liquid miscible in water. It is an amine commonly called MEA. It is a highly flammable liquid and a corrosive product.

The pure substance (gas at 20°C) has been registered under REACH. However, the substance is marketed in solution at 70%, so this document is based on the data related to this solution (except if “pure substance” is mentioned).

2. Chemical Identity

Name: Monoethylamine
Brand name: MEA solution 70%
Chemical name (IUPAC): Ethanamine
CAS number(s): 75-04-7
EC number: 200-834-7
Molecular formula: C₂H₇N
Structure:



3. Use and applications

Monoethylamine is used as intermediate for the synthesis of active ingredients in agrochemicals and pharmaceuticals.

4. Physical / Chemical properties

Monoethylamine is a highly flammable liquid organic substance having the following characteristics and physico-chemical properties:

Property	Value
Physical state	Liquid at 20°C and 1013 hPa
Colour	Colourless
Odour	Strong, ammoniacal
Molecular weight	45.08 g/mol
Density	0.806 at 20°C

Vapour pressure	469 hPa at 20°C 577 hPa at 25°C 705 hPa at 30°C
Freezing / boiling points	-81.2°C / 39.5°C at 1013 hPa
Flammability	Highly flammable liquid and vapour
Flash point	< -24°C (closed cup)
Self-ignition temperature	384°C at 1013 hPa
Explosive / oxidizing properties	Not relevant based on its structure
Water solubility	Completely soluble at 20°C
Octanol-water partition coefficient (Log K _{ow})	- 0.13

5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Harmful by oral route. Toxic by dermal contact. Toxic by inhalation (pure substance)
Irritation / corrosion Skin / eye/ respiratory tract	Corrosive for the skin and the eyes and irritating for the respiratory tract
Sensitisation	No data available
Toxicity after repeated exposure Oral / inhalation / dermal	Irritation of the upper respiratory tract was the main effect observed following repeated inhalation exposure (pure substance)
Genotoxicity / Mutagenicity	No evidence of genetic toxicity based on limited data
Carcinogenicity	No data available
Reproductive / Developmental Toxicology	No data available

6. Environmental Effects

The potential of monoethylamine for bioaccumulation is low. This product may persist in the environment. It is toxic to aquatic life with long lasting effects.

Effect Assessment	Result
Aquatic Toxicity	Toxic to aquatic life

Fate and behaviour	Result
Biodegradation	Readily biodegradable
Abiotic degradation	Not expected to hydrolyse
Bioaccumulation potential	Not expected to bioaccumulate
PBT / vPvB conclusion	Not considered as PBT* or vPvB**

*: Persistent, Bioaccumulative and Toxic (PBT)

** : very Persistent and very Bioaccumulative (vPvB)

7. Exposure

In occupational settings, Monoethylamine is used in closed systems. Exposure may take place in case of incidents. In case of unintended exposure during maintenance, sampling, testing or other procedures, workers should follow the recommended safety measures given in the Safety Data Sheet (SDS).

8. Risk Management recommendations

Human health protective measures	
Organizational	Collect the latest available Safety Data Sheet. Implement good basic standards of occupational health. Ensure operatives are well informed of the hazards and trained to minimise exposures. Handle and store according to the indications of the Safety Data Sheet.
Engineering controls	Provide appropriate local exhaust ventilation at points of emission. Ensure that eye- and handwash stations and safety showers are close to workstation locations.
Personal protective equipment	Eye/Face protection: Safety glasses with side-shields
	Skin protection: At the workplace: protective clothing (cotton). Intervention at incident: combination with delayed penetration.
	Hand protection: Splash contact, intermittent and prolonged: PVC gloves. According to permeation index EN 374: 1 (time elapsed > 10 mins).
	Respiratory protection: Low concentrations or short activity: mask with specific cartridge (Recommended Filter type: A2B2E2K2P3). High concentrations or prolonged activity: self contained Breathing Apparatus.
Environmental protective measures	
Do not release into the environment. Do not let product enter drains. Use waste water treatment systems. Do not spread sludge to soil. Neutralize with a sodium bisulphate solution. Destroy the product by incineration (in accordance with local and national regulations) (see chap. 13 of the Safety Data Sheet).	

9. Regulatory Information / Classification and Labelling

9.1 Regulatory Information


This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)


9.2 Classification and labelling

Under GHS (Globally Harmonized System of classification and labelling of chemicals), substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and safety data sheets. 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 to Regulation (EC) 1272/2008, implementation of the GHS in the European Union.

Classification and labelling according to Regulation (EC) n° 1272/2008:

Classification
<ul style="list-style-type: none">– Flammable liquids: Category 2– Acute toxicity – Oral: Category 4– Acute toxicity – Dermal: Category 3– Skin corrosion: Category 1A– Serious eye damage: Category 1– Specific target organ toxicity - single exposure (inhalation): Category 3
Labelling
Hazard pictogram(s)

Signal word
<ul style="list-style-type: none">– Danger
Hazard statement(s)
<ul style="list-style-type: none">– H225: Highly flammable liquid and vapour.– H302: Harmful if swallowed.– H311: Toxic in contact with skin.– H314: Causes severe skin burns and eye damage.– H335: May cause respiratory irritation.

Classification and labelling according to GHS:

Classification
<ul style="list-style-type: none">– Flammable liquids: Category 2– Acute toxicity – Oral: Category 4– Acute toxicity – Dermal: Category 3– Skin corrosion: Category 1A– Serious eye damage: Category 1– Specific target organ toxicity - single exposure (inhalation): Category 3– Acute aquatic toxicity: Category 2
Labelling
Hazard pictogram(s)


Signal word
– Danger
Hazard statement(s)
<ul style="list-style-type: none"> – H225: Highly flammable liquid and vapour. – H302: Harmful if swallowed. – H311: Toxic in contact with skin. – H314: Causes severe skin burns and eye damage. – H335: May cause respiratory irritation. – H401: Toxic to aquatic life.

10. Contact Information within Company

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

- arkema-thiochem-reach-uses@arkema.com
- **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: 2014/11/30
- Date of revision:

12. Disclaimer

The information contained in this paper is intended as advice only and whilst the information is provided in utmost good faith and has been based on the best information currently available, is to be relied upon at the user's own risk.

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