

Ethylamine

C₂H₇N

1. Identification of the substance/mixture and of the company/undertaking

| | |
|---------------------------|-----------------------------|
| Product identifier | |
| Name of product | Ethylamine Art-Nr.: 1110 |
| Name of substance | ethylamine |
| Index No | 612-002-00-4 |
| EC No | 200-834-7 |
| CAS No | 75-04-7 |

Manufacturer / Distributor:

Ehsan International Gases
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Recommended intended purpose(s)

Basic substance.
Corrosion inhibitor.

2. Hazards identification

Classification according to 67/548/EEC or 1999/45/EC

F+; R12

Xi; R36/37

R-phrases

12 Extremely flammable.
36/37 Irritating to eyes and respiratory system.

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

| Hazard classes and Hazard categories | Hazard Statements | Classification procedure | Hazard statements for physical hazards |
|--------------------------------------|-------------------|--------------------------|---|
| Flam. Gas 1 | H220 | | H220 Extremely flammable gas |
| Liquef. Gas | H280 | | H280 Contains gas under pressure; may explode if heated. |
| Acute Tox. 4 | H332 | | Hazard statements for health hazards |
| Eye Irrit. 2 | H319 | | H319 Causes serious eye irritation. |
| STOT SE 3 | H335 | | H332 Harmful if inhaled. |

May cause respiratory irritation.

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

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GHS02



GHS04



GHS07

Signal word

Danger

Hazard statements for physical hazards

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Hazard statements for health hazards

H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Precautionary Statements**Prevention**

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P260 Do not breathe gas/vapours.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P315 Get immediate medical advice/attention.

Storage

P403 Store in a well-ventilated place.

Hazardous ingredients for labeling

ethylamine

Information pertaining to special dangers for human and environment

In use, may form flammable/explosive vapour-air mixture.
In high concentrations may cause asphyxiation.
Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level. Contact with liquid may cause cold burns/frostbite.

3. Composition/information on ingredients

CAS No 75-04-7

ethylamine

EC No 200-834-7

Index No 612-002-00-4

4. First aid measures**General information**

Remove contaminated soaked clothing immediately.
Adhere to personal protective measures when giving first aid.
Seek medical advice immediately.

In case of inhalation

Remove the casualty into fresh air and keep him immobile.
Seek medical treatment immediately.
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

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In case of skin contact

In case of contact with skin wash off with warm water.

In case of frostbite rinse with plenty of water. Don't remove clothing.

In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

Seek medical treatment immediately.

In case of eye contact

Eye rinsing with water carefully while protecting unhurt eye.

Call for a doctor immediately.

In case of ingestion

Do not induce vomiting.

Call for a doctor immediately.

Rinse out mouth and give plenty of water to drink.

Physician's information / possible dangers

Risk of pulmonary oedema

5. Firefighting measures

Suitable extinguishing media

water

Foam

Dry powder

Carbon dioxide

Extinguishing media which must not be used for safety reasons

Full water jet

Special hazards arising from the substance or mixture

In case of fire formation of dangerous gases possible.

Formation of explosive gas mixtures in air.

In the event of fire the following can be released:

Ammonia

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

Special protective equipment for fire-fighters

Use breathing apparatus with independent air supply (isolated). Wear full protective clothing.

Additional information

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture/explode.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur.

Extinguish any other fire.

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

6. Accidental release measures

Personal precautions

See chapter 8.

Eliminate all ignition sources if safe to do so.

Keep away sources of ignition.

Environmental precautions

If possible, stop flow of product.

Eliminate ignition sources.

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Do not discharge into the drains/surface waters/groundwater.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Suppress gases/vapours/mists with water spray jet
Do not discharge into the subsoil/soil.

Methods for cleaning up

Ensure adequate air ventilation.
Take up with absorbent material (e.g. kieselguhr).
Flush away residues with water.

Additional Information

Informations for safe handling see chapter 7.
Informations for personal protective equipment see chapter 8.
No water on the leaks.

7. Handling and storage

! Advice on safe handling

Use only in thoroughly ventilated areas.
Transfer and handle only in enclosed systems.
Barrels and installations thoroughly earthing (grounding).
Use antistatic tools.
Treatment only in suitable rooms and systems.
Provide good room ventilation even at ground level (vapours are heavier than air).
Prevent cylinders from falling over.
Ensure valve protection device is correctly fitted.
Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
Open valve slowly to avoid pressure shock.
Do not allow backfeed into the container.
Suck back of water into the container must be prevented.
No water to valves, flanges and other fittings.
Purging of pipes and valves with inert gases - to avoid: water, solvents.

Advice on protection against fire and explosion

The product is combustible.
Because of risk of explosion avoid vapours getting into cellar, sewage system and holes.
Take precautionary measures against static discharges.
Formation of explosive gas mixtures in air.
Use explosion-proof equipment / fittings and non-sparking tools.

Requirements for storage rooms and vessels

Keep in closed original container.
Ventilate store-rooms thoroughly.
Use transportable pressure equipment.
Suitable materials: Normalised steel and carbon steel, tempered steel, aluminium alloys.
Valve: Suitable materials: Carbon steels, aluminium alloys, stainless steel. Unsuitable materials: Brass, copper alloys.

Advice on storage compatibility Do not store together with animal feedstuffs.
Do not store together with food.
Do not store together with oxidizing agents.

Further information on storage conditions

Ensure valve protection device is correctly fitted.
Keep container tightly closed and store at cool and aired place.
Prevent cylinders from falling over.
Protect of heat.

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Storage temperature may not exceed 50°C (=122°F).

Information on storage stability At appropriate storage unlimited stability.

Recommendation(s) for intended use
no

8. Exposure controls/personal protection

Ingredients with occupational exposure limits to be monitored

| CAS No | Name | Code | [mg/m ³] | [ppm] | Remark |
|---------|------------|--------------|----------------------|-------|-----------------------|
| 75-04-7 | Ethylamine | WEL, 8 hours | 3,8 | 2 | EH40/2007/ UK |
| | | Short-term | 11 | 6 | |
| 75-04-7 | Ethylamine | PEL, 8 hours | 18 | 10 | OSHA Table Z-1/USA |

Indicative occupational exposure limit values (91/322/EEC, 2000/39/EC, 2006/15/EC or 2009/161/EU)

| CAS No | Name | Code | [mg/m ³] | [ppm] | Remark |
|---------|------------|---------|----------------------|-------|--------|
| 75-04-7 | ethylamine | 8 hours | 9,4 | 5 | |

Respiratory protection

Keep self contained breathing apparatus readily available for emergency use.

In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

Hand protection chemical-

resistant gloves

Leather gloves

Glove material specification [make/type, thickness, permeation time/life]: IIR, >= 0,7 mm, > 480 min

Eye protection safety goggles, in case of increased risk add

protective face shield

Skin protection

protective clothing

General protective measures

Do not inhale gases/vapours/aerosols.

Hygiene measures

At work do not eat, drink and smoke.

Limitation and surveillance of the environment

See chapter 7.

Form

Gaseous / liquefied under pressure.

Colour

colourless

Odour

similar to amine

Important health, safety and environmental information

| | Value | Temperature | at | Method | Remark |
|-----------------------------------|---------|-------------|-----|--------|-----------------|
| pH value in delivery state | > 14 | 20 °C | g/l | | watery solution |
| boiling point | 16,6 °C | | hPa | | |

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9. Physical and chemical properties

melting point -80,6 °C

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| | Value | Temperature | at | Method | Remark |
|---|-------------------------|-------------|----|-----------|----------------------------|
| Flash point | < -52 °C | | | DIN 53213 | |
| Ignition temperature | 260 °C | | | DIN 51794 | |
| Lower explosion limit | 3,5 Vol-% | | | | |
| Upper explosion limit | 14 Vol-% | | | | |
| Vapour pressure | 1160 hPa | 20 °C | | | |
| Density | 0,687 g/cm ³ | 20 °C | | | liquid phase |
| Rel. vapour density | 1,672 | | | | air = 1 |
| Solubility in water | | | | | multimiscible |
| Solubility/other | | | | | soluble in organic solvent |
| Partition coefficient (log p_{OW}) | -0,27 | | | | |
| Viscosity dynamic | 0,3 mPa*s | 0 °C | | | liquid phase |

Additional information

Vapours are heavier than air.

10. Stability and reactivity

Conditions to avoid

Formation of explosive gas/air mixtures.

Heat sources / heat - risk of bursting.

Sources of ignition.

Materials to avoid

Reactions with acids.

Hazardous decomposition products

Carbon monoxide

Nitrous oxides (NO_x)

Thermal decomposition

Remark No decomposition if used as

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11. Toxicological information

| | Value/Validation | Species | Method | Remark |
|--|------------------|----------------|--------------|---|
| LD50 acute oral | 400 mg/kg | rat | | Acute |
| LD50 acute dermal toxicity/Irritability/Sensitization | 265 mg/kg | rabbit | | |
| | Value/Validation | Species | Method | Remark |
| LC50 acute inhalation | 12,6 mg/l (4 h) | rat | | watery solution |
| Irritability skin | corrosive | rabbit | Draizemethod | watery solution |
| Irritability eye | irritant | rabbit eye | | watery solution |
| Skin sensitization | | not determined | | |
| Sensitization respiratory system | | not determined | | |
| Subacute Toxicity - Carcinogenicity | | | | |
| | Value | Species | Method | Validation |
| Mutagenicity | | | | No experimental information on genotoxicity in vitro available. |
| Reproduction-Toxicity | | | | not determined |
| Carcinogenicity | | | | not determined |
| Experiences made from practice | | | | |
| May cause frostbite. | | | | |

12. Ecological information

Data on elimination (persistence and degradability)

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| | Elimination rate | Method of analysis | Method | Validation |
|---------------------------------|------------------|----------------------------|------------|---------------|
| Biological degradability | > 60 % | BOD in % of theoretical OD | OECD 301 F | Biodegradable |
| Biological eliminability | not determined | | | |

Ecotoxicological effects

| | Value | Species | Method | Validation |
|----------------|---------------------------|----------------|--------|------------|
| Fish | LC50 240 mg/l (96 h) | Leuciscus idus | | |
| Daphnia | EC50 94 - 110 mg/l (24 h) | Daphnia magna | | |

Behaviour in sewage plant

When low concentrations are discharged correctly into adapted biological sewage treatment plants, interference with the degradation activity of activated sludge is not likely.

The product is an alkaline solution. Neutralization is normally necessary before waste water is discharged into sewage treatment plants.

| Additional ecological information | Value | Method | Remark |
|-----------------------------------|-----------|--------|--------|
| BOD 5 d | 1300 mg/g | | |

13. Disposal considerations

| Waste code No. | Name of waste |
|----------------|---|
| 16 05 04* | gases in pressure containers (including halons) containing dangerous substances |

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 91/689/EEC on hazardous waste.

Recommendations for the product

Dispose in accordance with local official regulations.

Dispose of as hazardous waste.

Recommendations for packaging

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

14. Transport information

Land and inland navigation transport ADR/RID

UN 1036 ETHYLAMINE, 2.1, (B/D), Classification code: 2F

Marine transport IMDG

UN 1036 ETHYLAMINE, 2.1, marine pollutant: no

Ems: F-D, S-U

Air transport ICAO/IATA-DGR

UN 1036 Ethylamine, 2.1

Cargo aircraft only: Package max. 150 kg.

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15. Regulatory information

VOC standard

VOC content

>=99 % 20 °C 1160 hPa

16. Other information

Recommend uses and restrictions

National and local regulations concerning chemicals shall be observed.

Further information

All declarations of safety-data-sheet refer to pure substance.

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Wording of the R/H-phrases specified in chapter 3 (not the classification of the mixture!)

R 12 Extremely flammable.

R 36/37 Irritating to eyes and respiratory system.

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

H319 Causes serious eye irritation.

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