

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 20.02.2024

Version number 1

Revision: 17.01.2024

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

· **1.1 Product identifier**

· **Trade name:** Ethylenediamine

· **Article number:** 1187

· **CAS Number:**
107-15-3

· **EC number:**
203-468-6

· **Index number:**
612-006-00-6

· **Registration number** 01-2119480383-37

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture**
Intermediate.
Chemicals for synthesis

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
Möller Chemie GmbH & Co. KG
Bürgerkamp 1
D-48565 Steinfurt
Tel.: 02551/9340-0
Fax: 02551/9340-60

· **Further information obtainable from:** Product safety department

· **1.4 Emergency telephone number:**
Poison Control Center Mainz - 24 hour emergency service - Tel.: +49 (0) 6131/19240

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS06 skull and crossbones

Acute Tox. 3 H311 Toxic in contact with skin.



GHS08 health hazard

Resp. Sens. 1B H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

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Skin Sens. 1B H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS02 GHS05 GHS06 GHS08

· Signal word *Danger*

· Hazard statements

H226 Flammable liquid and vapour.

H302+H332 Harmful if swallowed or if inhaled.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P321 Specific treatment (see on this label).

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· 2.3 Other hazards

The product does not contain any substance above the legal limits included on the list for endocrine disrupting properties established under Article 59(1) of Regulation (EC) No 1907/2006 or under Commission Delegated Regulation (EU) 2017/2100 or of Commission Regulation (EU) 2018/605 has endocrine disrupting properties.

· Results of PBT and vPvB assessment

· PBT:

The product does not contain any substances above legal limits that meet the criteria for PBT (persistent, bioaccumulative and toxic).

· vPvB:

The product does not contain any substances above legal limits that meet the criteria for vPvB (very persistent and very bioaccumulative).

SECTION 3: Composition/information on ingredients

· 3.1 Substances

· CAS No. Description

107-15-3 Ethylenediamine

· Identification number(s)

· EC number: 203-468-6

· Index number: 612-006-00-6

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· **SVHC**

107-15-3 ethylenediamine

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:** Supply fresh air and to be sure call for a doctor.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

In case of skin irritation (redness, etc.), consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

Remove any contact lenses if possible. Rinse further.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

Call for a doctor immediately.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:** Water, foam, alcohol-resistant foam, fire extinguishing powder

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide, carbon dioxide

Nitrogen oxides (NO_x)

· 5.3 Advice for firefighters

Flammable liquid and vapour.

There is a risk of fire and explosion if the product enters the sewerage system.

In the event of heating or fire, an increase in pressure occurs and the container may burst, creating a risk of explosion.

Vapour/gas is heavier than air and spreads along the ground.

· **Protective equipment:** Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

· 6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

· 6.3 Methods and material for containment and cleaning up:

Contain with non-flammable absorbent material (e.g. sand, earth, kieselguhr, vermiculite) and place in containers for disposal in accordance with local / national regulations (see Section 13). Keep in suitable, closed containers for disposal.

Ensure adequate ventilation.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Avoid contact with skin, eyes and clothing.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Take measures against electrostatic discharges.
Use only non-sparking tools.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Keep container tightly closed and store in a dry and well-ventilated place.
- **Information about storage in one common storage facility:** See section 10.5
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat.
- **Storage class:**
3
flammable
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **DNELs**
Worker:
Long-term exposure - systemic effects, dermal: 3.6 mg/m³
Long-term exposure - systemic effects, inhalative: 25 mg/m³
- **PNECs**
Fresh water: 0.016 mg/l
Sea water: 0.002 mg/l
Sediment (fresh water): 7.68 mg/kg
Sediment (seawater): 0.768 mg/kg
Soil: 4.36 mg/kg
Sewage treatment plant: 0.5 mg/l
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Avoid contact with the eyes and skin.
Do not inhale gases / fumes / aerosols.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

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· **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Butyl rubber

Nitrile rubber, NBR

Chloroprene rubber, CR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Tightly sealed goggles

· **Body protection:** flame retardant antistatic protective clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· Colour:	Colourless
· Odour:	Ammonia-like
· Odour threshold:	Not determined.
· Melting point/freezing point:	10.8-11 °C
· Boiling point or initial boiling point and boiling range	117 °C
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	2.7 Vol %
· Upper:	16.6 Vol %
· Flash point:	38-42 °C
· Auto-ignition temperature:	385 °C
· Decomposition temperature:	Not determined.
· pH (100 g/l) at 20 °C	12.2
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic at 25 °C:	1.265-1.725 mPas
· Solubility	
· water at 20 °C:	1000 g/l
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	13 hPa
· Density and/or relative density	
· Density at 20 °C:	0.897 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

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<ul style="list-style-type: none"> · 9.2 Other information · Appearance: · Form: Fluid · Important information on protection of health and environment, and on safety. · Ignition temperature: Not determined. · Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible. · Change in condition · Evaporation rate Not determined. 	
<ul style="list-style-type: none"> · Information with regard to physical hazard classes · Explosives Void · Flammable gases Void · Aerosols Void · Oxidising gases Void · Gases under pressure Void · Flammable liquids Flammable liquid and vapour. · Flammable solids Void · Self-reactive substances and mixtures Void · Pyrophoric liquids Void · Pyrophoric solids Void · Self-heating substances and mixtures Void · Substances and mixtures, which emit flammable gases in contact with water Void · Oxidising liquids Void · Oxidising solids Void · Organic peroxides Void · Corrosive to metals Void · Desensitised explosives Void 	

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
risk of ignition
Vapors can form an explosive mixture with air.
- **10.2 Chemical stability**
The material is stable under normal environmental conditions and under the temperature and pressure conditions expected during storage and handling.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Avoid all sources of ignition: heat, sparks, open flames.
- **10.5 Incompatible materials:**
oxidizing materials
Metals
Acids.
Chlorinated hydrocarbons
- **10.6 Hazardous decomposition products:**
Hazardous decomposition products should not be formed under normal storage and use conditions.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**
Harmful if swallowed or if inhaled.

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*Toxic in contact with skin.***· LD/LC50 values relevant for classification:**

Dermal	LD50	560 mg/kg (rabbit)
Inhalative	LC50/ 4h	14.7 mg/l (rat)

· Skin corrosion/irritation*Causes severe skin burns and eye damage.***· Serious eye damage/irritation***Causes severe skin burns and eye damage.***· Respiratory or skin sensitisation***May cause allergy or asthma symptoms or breathing difficulties if inhaled.**May cause an allergic skin reaction.***· Germ cell mutagenicity** *Based on available data, the classification criteria are not met.***· Carcinogenicity** *Based on available data, the classification criteria are not met.***· Reproductive toxicity** *Based on available data, the classification criteria are not met.***· STOT-single exposure** *Based on available data, the classification criteria are not met.***· STOT-repeated exposure** *Based on available data, the classification criteria are not met.***· Aspiration hazard** *Based on available data, the classification criteria are not met.***· 11.2 Information on other hazards****· Endocrine disrupting properties** *Substance is not listed.*

SECTION 12: Ecological information

· 12.1 Toxicity**· Aquatic toxicity:***Fish toxicity:**LC50/96 h: 640 mg/l (Poecilla reticulata)**Aquatic invertebrates:**EC50/48 h: 16,7 mg/l (Daphnia magna)**Aquatic plants:**EC50/72 h: 645 mg/l (Selenastrum capricornutum)***· 12.2 Persistence and degradability** *Easily biodegradable***· 12.3 Bioaccumulative potential** *No further relevant information available.***· 12.4 Mobility in soil** *No further relevant information available.***· 12.5 Results of PBT and vPvB assessment****· PBT:** *The product is not considered to be persistent, bioaccumulating nor toxic (PBT).***· vPvB:** *The product is not considered to be persistent or very bioaccumulative (vPvB).***· 12.6 Endocrine disrupting properties** *For information on endocrine disrupting properties see section 11.***· 12.7 Other adverse effects****· Additional ecological information:****· General notes:***Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water**Do not allow product to reach ground water, water course or sewage system.**Must not reach sewage water or drainage ditch undiluted or unneutralised.**Danger to drinking water if even small quantities leak into the ground.*

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods**· Recommendation** *Disposal according to local regulations.***· Uncleaned packaging:****· Recommendation:** *Disposal must be made according to official regulations.*

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SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN1604
· 14.2 UN proper shipping name · ADR · IMDG, IATA	1604 ETHYLENEDIAMINE ETHYLENEDIAMINE
· 14.3 Transport hazard class(es) · ADR	
 	
· Class · Label	8 (CF1) Corrosive substances. 8+3
· IMDG	
 	
· Class · Label	8 Corrosive substances. 8/3
· IATA	
 	
· Class · Label	8 Corrosive substances. 8 (3)
· 14.4 Packing group · ADR, IMDG, IATA	II
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Stowage Code · Segregation Code	Warning: Corrosive substances. 83 F-E,S-C (SGG18) Alkalis A SW2 Clear of living quarters. SG35 Stow "separated from" SGG1-acids
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR · Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category · Tunnel restriction code	2 D/E

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· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1604 ETHYLENEDIAMINE, 8 (3), II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Seveso category P5c flammable liquids**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 5.000 t**
- **Qualifying quantity (tonnes) for the application of upper-tier requirements 50.000 t**
- **REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 40, 75**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.**

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS: Product safety department**
- **Contact: Mrs. Steyer**
- **Abbreviations and acronyms:**
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - ICAO: International Civil Aviation Organisation
 - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - IATA: International Air Transport Association
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - DNEL: Derived No-Effect Level (REACH)
 - PNEC: Predicted No-Effect Concentration (REACH)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - SVHC: Substances of Very High Concern
 - vPvB: very Persistent and very Bioaccumulative
 - ATE: Acute toxicity estimate values
 - Flam. Liq. 3: Flammable liquids – Category 3
 - Acute Tox. 4: Acute toxicity – Category 4
 - Acute Tox. 3: Acute toxicity – Category 3
 - Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 - Resp. Sens. 1B: Respiratory sensitisation – Category 1B
 - Skin Sens. 1B: Skin sensitisation – Category 1B
 - Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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