

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

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name: Ethylenediamine****Article number:** 2175**CAS Number:**

107-15-3

EC number:

203-468-6

Index number:

612-006-00-6

Registration number 01-2119480383-37-XXXX**1.2 Relevant identified uses of the substance or mixture and uses advised against****Life cycle stages**

F Formulation or re-packing

IS Use at industrial Sites

Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

Product category

PC19 Intermediate

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC39 Cosmetics, personal care products

PC40 Extraction agents

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC5 Mixing or blending in batch processes

PROC4 Chemical production where opportunity for exposure arises

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Environmental release category

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

Application of the substance / the mixture

Industrial use

Laboratory chemicals

Reagent for analysis

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

Th. Geyer GmbH & Co. KG

Dornierstr. 4 – 6

D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

(Contd. on page 2)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 1)

www.thgeyer.de
sicherheitsdatenblaetter@thgeyer.de

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

· **1.4 Emergency telephone number:**

National Poisons Information Service
(Birmingham Centre)

City Hospital

Dudley Road

Birmingham B18 7QH

Tel.:Emergency: (00 44) 87 06 00 62 66

National Poisons Information Service

+44 121 507 4123

Members of the public seeking specific information on poisons should contact:

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

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.



GHS08 health hazard

Resp. Sens. 1 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 H312 Harmful in contact with skin.

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

· **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



GHS07



GHS08

· **Signal word** Danger

· **Hazard statements**

H226 Flammable liquid and vapour.

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 2)

- H302+H312 Harmful if swallowed or 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.

Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P310 Immediately call a POISON CENTER/doctor.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards**Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances**CAS No. Description**

CAS: 107-15-3 ethylenediamine

Identification number(s)· **EC number:** 203-468-6· **Index number:** 612-006-00-6**SVHC**

CAS: 107-15-3 ethylenediamine

SECTION 4: First aid measures

4.1 Description of first aid measures**General information:**

First aider needs to protect himself.

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

Take affected persons out into the fresh air.

Involve doctor immediately.

After inhalation:

Remove person from danger area.

Do not use mouth to mouth or mouth to nose resuscitation.

Use a respiratory bag or breathing device.

Call a doctor immediately.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Flush contaminated skin with soap and plenty of water.

Seek immediate medical advice.

take care of a Possibility of inhalation at the same time

After eye contact:

Protect unharmed eye.

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

Remove contact lenses

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 3)

- Continue to rinse during transport with isotonic saline, alternatively with water.
- **After swallowing:**
 - Do not induce vomiting
 - Call emergency doctor
 - Consult a physician.
- **Information for doctor:** Please observe safety data sheet/label.
- **4.2 Most important symptoms and effects, both acute and delayed**
 - Nausea
 - Coughing
 - Cramp
 - Gastric or intestinal disorders
 - Unconsciousness
- **Hazards**
 - Danger of gastric perforation.
 - Danger of disturbed cardiac rhythm.
 - Risk of organ damage (liver, kidney)
- **4.3 Indication of any immediate medical attention and special treatment needed**
 - Give Glucocorticoid-Aerosol in case of lung irritation.
 - If necessary oxygen respiration treatment.
 - Later observation for pneumonia and pulmonary oedema.
 - Monitor circulation, possible shock treatment.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
 - Water spray, powder, carbon dioxide or foam. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet.
- **5.2 Special hazards arising from the substance or mixture**
 - Vapors can form explosive mixtures with air.
 - In case of fire, the following can be released:
 - Nitrogen oxides (NO_x)
 - Carbon dioxides (CO, CO₂)
 - Combustible.
 - In case of combustion evolution of dangerous gases possible.
- **5.3 Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Do not inhale explosion gases or combustion gases.
- **Additional information**
 - Cool endangered receptacles with water spray.
 - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
 - Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Wear protective equipment. Keep unprotected persons away.
 - Avoid contact with eyes and skin.
 - Use respiratory protective device against the effects of fumes/dust/aerosol.
 - Ensure adequate ventilation.
 - Keep people at a distance and stay on the windward side.
 - Consult an expert.
- **6.2 Environmental precautions:**
 - Keep contaminated washing water and dispose of appropriately.
 - Do not allow to enter sewers/surface or ground water.

(Contd. on page 5)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 4)

- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
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**
Keep away from heat and direct sunlight.
Apply the general protection and hygiene measures for the handling with chemicals.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Prevent any seepage into the ground.
Store only in the original receptacle.
- **Information about storage in one common storage facility:**
Store away from flammable substances.
Store away from oxidising agents.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Caution when reopening receptacles with broken seal.
- **Storage class: 3**
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical facilities:** No further data; see item 7.
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **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. If air-purifying respiratory protection is required according to the risk assessment, wear a respirator with full-face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge. If the respirator is the only protective measure, an ambient air self-contained breathing apparatus with a full face mask must be worn. Respirators and components must be approved to appropriate government standards (for example, NIOSH (US) or CEN (EU)). Translated with www.DeepL.com/Translator (free version)

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 5)

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

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 protection:

Tightly sealed goggles

Body protection:

Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties**General Information****Appearance:**

Form:	Fluid
Colour:	Colourless
Odour:	Ammonia-like

pH-value: Not determined.

Change in condition

Melting point/freezing point:	8.5 °C
Initial boiling point and boiling range:	117 °C

Flash point: 34 °C

Flammability (solid, gas): Not applicable.

Ignition temperature: 385 °C

Decomposition temperature: Not determined.

Auto-ignition temperature: Not determined.

Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Explosion limits:

Lower:	2.7 Vol %
Upper:	16.6 Vol %

(Contd. on page 7)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 6)

· Vapour pressure at 20 °C:	12 hPa
· Density at 20 °C:	0.98 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water at 20 °C:	0.05 g/l
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic at 20 °C:	1.54 mPas
Kinematic:	Not determined.
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable with proper storage and handling.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with acids.
Reacts with oxidising agents.
Forms explosive gas mixture with air.
- **10.4 Conditions to avoid**
Heat
Heat, flames and sparks
- **10.5 Incompatible materials:** Avoid contact with other chemicals.
- **10.6 Hazardous decomposition products:** On fire: see chapter 5

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

· Acute toxicity

Harmful if swallowed or in contact with skin.

· LD/LC50 values relevant for classification:

Oral	LD50	500 mg/kg (rat)
Dermal	LD50	730 mg/kg (rabbit)
Inhalative	LC50	0.3 mg/l (mouse)

· Primary irritant effect:

· 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.

· Subacute to chronic toxicity: -

· Additional toxicological information:

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.

(Contd. on page 8)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 7)

- **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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
Observe local (country-specific) regulations and laws
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Chemicals must be disposed of in compliance with the respective national regulations.

European waste catalogue

16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 05 00	gases in pressure containers and discarded chemicals
16 05 08*	discarded organic chemicals consisting of or containing hazardous substances
HP3	Flammable
HP6	Acute Toxicity
HP8	Corrosive
HP13	Sensitising

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1604
- **14.2 UN proper shipping name**
- **ADR** 1604 ETHYLENEDIAMINE
- **IMDG, IATA** ETHYLENEDIAMINE

(Contd. on page 9)

E

Safety data sheet

according to 1907/2006/EC, Article 31



revised on: 21.02.2022



Version number 6



Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 8)

<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	
 	
<ul style="list-style-type: none"> · Class · Label 	8 (CF1) Corrosive substances. 8+3

<ul style="list-style-type: none"> · IMDG 	
 	
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8/3

<ul style="list-style-type: none"> · IATA 	
 	
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8 (3)

<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	
	II

<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	
	Not applicable.

<ul style="list-style-type: none"> · 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 8-04 Alkalis A SW2 Clear of living quarters. SG35 Stow "separated from" SGG1-acids

<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	
	Not applicable.

<ul style="list-style-type: none"> · Transport/Additional information: 	

<ul style="list-style-type: none"> · 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

<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	
	2 D/E

<ul style="list-style-type: none"> · IMDG · 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

(Contd. on page 10)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

(Contd. of page 9)

· 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**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **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
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.
- **National regulations:**
- **Information about limitation of use:**
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
- **Other regulations, limitations and prohibitive regulations**

Substances of very high concern (SVHC) according to REACH, Article 57

CAS: 107-15-3	ethylenediamine
---------------	-----------------

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not 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. Application, use and handling of our products take place out of our control and are solely your responsibility.

- **Department issuing SDS:** Product management
- **Contact:** Product management
- **Abbreviations and acronyms:**
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)
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
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Resp. Sens. 1: Respiratory sensitisation – Category 1

(Contd. on page 11)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 21.02.2022

Version number 6

Creation Date: 26.01.2016

Trade name: Ethylenediamine

Skin Sens. 1: Skin sensitisation – Category 1

(Contd. of page 10)

· *** Data compared to the previous version altered.**

E