

according to Regulation (EC) No 1907/2006

Ethylene diamine for analysis

Revision date: 26.07.2023 Product code: 20675 Page 1 of 13

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

1.1. Product identifier

Ethylene diamine for analysis

REACH Registration Number: 01-2119480383-37-XXXX

CAS No: 107-15-3 Index No: 612-006-00-6 EC No: 203-468-6

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Laboratory chemicals

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

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH Street: Stempelstraße 6 Place: D-47167 Duisburg

Telephone: 0203/5194-0 Telefax: 0203/5194-290

E-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit Telephone: 0203/5194-107/117

E-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de

Responsible Department: Abteilung Produktsicherheit

1.4. Emergency telephoneFor Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,number:Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada:

1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls

accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flam. Liq. 3; H226 Acute Tox. 3; H311 Acute Tox. 4; H332 Acute Tox. 4; H302 Skin Corr. 1B; H314 Resp. Sens. 1B; H334 Skin Sens. 1B; H317 Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger



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Pictograms:









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.

H317 May cause an allergic skin reaction.

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

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing

protection.

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.

Immediately call a POISON CENTER/doctor.

P310 **2.3. Other hazards**

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: H2NCH2CH2NH2
Molecular weight: 60,10 g/mol

Hazardous components

CAS No	Chemical name						
	EC No	Index No	REACH No				
	Classification (Regulation (EC) No 1272/2008)						
107-15-3	ethylenediamine						
	203-468-6 612-006-00-6 01-2119480383-37-XXXX						
	Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Resp. Sens. 1B, Skin Sens. 1B, Aquatic Chronic 3; H226 H311 H332 H302 H314 H334 H317 H412						

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity	
	Specific Conc. I	Limits, M-factors and ATE		
107-15-3	203-468-6	ethylenediamine	100 %	
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = 560 mg/kg; oral: LD50 = 866 mg/kg			

Further Information

This substance has been listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH.

SECTION 4: First aid measures



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4.1. Description of first aid measures

General information

Self-protection of the first aider

After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

After contact with skin

Wash immediately with: Water

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

Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water.

Do not allow a neutralisation agent to be drunk. Do NOT induce vomiting.

Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Irritant

corrosive

Dyspnoea

Risk of serious damage to eyes.

Allergic reactions

Cough

Dyspnoea

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Foam

Carbon dioxide (CO2)

Extinguishing powder

Water

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids

Hazardous combustion products

In case of fire may be liberated:

Nitrogen oxides (NOx)

Carbon dioxide (CO2) Carbon monoxide

In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

In case of fire and/or explosion do not breathe fumes.

Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.



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Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Keep away from sources of ignition - No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders: Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff. Keep container tightly closed.

Use personal protection equipment. Use extractor hood (laboratory).

Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Advice on protection against fire and explosion

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other



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ignition sources. No smoking.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.

Further information on handling

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

Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used. Store in a place accessible by authorized persons only.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in a cool, well-ventilated place.

Keep container tightly closed and dry.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Unsuitable container/equipment material:

Light metal

Further information on storage conditions

Keep cool. Protect from sunlight. storage temperature < +30°C

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
107-15-3	Ethylenediamine	10	25		TWA (8 h)	

DNEL/DMEL values

CAS No	Substance					
DNEL type		Exposure route	Effect	Value		
107-15-3	ethylenediamine					
Worker DNEL, long-term		inhalation	systemic	25 mg/m³		
Worker DNEL, long-term		dermal	systemic	3,6 mg/kg bw/day		
Consumer DNEL, long-term		inhalation	systemic	12,5 mg/m³		
Consumer DNEL, long-term		oral	systemic	0,275 mg/kg bw/day		



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PNEC values

CAS No	Substance					
Environmental compartment Value						
107-15-3	ethylenediamine					
Freshwater		0,016 mg/l				
Freshwater (in	0,167 mg/l					
Marine water		0,002 mg/l				
Freshwater se	7,68 mg/kg					
Marine sedim	0,768 mg/kg					
Secondary po	4,9 mg/kg					
Micro-organis	0,5 mg/l					
Soil	4,36 mg/kg					

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Face protection umbrella

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact

Trade name/designation KCL 897 Butoject®

Recommended material: Butyl caoutchouc (butyl rubber) 0,3 mm

Wearing time with permanent contact > 480 min

By short-term hand contact

Trade name/designation KCL 720 Camapren®

Recommended material: CR (polychloroprene, chloroprene rubber) 0,65 mm

Wearing time with occasional contact (splashes): > 60 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

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

Wear fire resistant or flame retardant clothing.

Wash hands and face before breaks and after work and take a shower if necessary.

Draw up and observe skin protection programme.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Filtering device with filter or ventilator filtering device of type: A

Environmental exposure controls

Do not allow to enter into surface water or drains.



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Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

Danger of explosion

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:

Colour:

Colour:

Odour:

Diquid

colourless

like: Amines

No data available

Test method

Melting point/freezing point:

Boiling point or initial boiling point and

11 °C

111 °C

117 °C

boiling range:

Flammability: No data available 2 vol. % Lower explosion limits: Upper explosion limits: 17 vol. % Flash point: 34°C Auto-ignition temperature: 405 °C >120 °C Decomposition temperature: pH-Value (at 20 °C): 12,2 (100 g/l) Viscosity / kinematic: No data available Water solubility: Soluble in: Water

(at 20 °C)

Solubility in other solvents

No data available

Dissolution rate:

Partition coefficient n-octanol/water:

Dispersion stability:

Vapour pressure:

No data available

No data available

12 hPa

(at 20 °C)

Vapour pressure:

Density:

Relative density:

Bulk density:

Relative vapour density:

Relative vapour density:

No data available

Particle characteristics:

No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Sustaining combustion: Sustaining combustion

Self-ignition temperature 405 °C

Solid: No data available
Gas: No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

Solvent separation test:

No data available
Solvent content:

No data available
Solid content:

No data available
Sublimation point:

No data available
No data available



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Softening point:

Pour point:

No data available

Viscosity / dynamic:

17 mPa·s

(at 20 °C)

Flow time: No data available

Further Information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

10.2. Chemical stability

Protect against: Air

10.3. Possibility of hazardous reactions

Acid halides

Acrolein

Acid chlorides, inorganic

Alcohols aldehydes Acetic acid

Acetic anhydride

Oxidising agent

Acids

Nitric acid

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Aluminium

Lead

Zinc

copper

Copper alloys

Iron.

Brass

bronze

10.6. Hazardous decomposition products

SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicocinetics, metabolism and distribution

No data available

Acute toxicity



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Toxic in contact with skin.

Harmful if swallowed.

Harmful if inhaled.

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Pulmonary oedema

CAS No	Chemical name								
	Exposure route	Dose		Species	Source	Method			
107-15-3	ethylenediamine								
	oral	LD50 mg/kg	866	Rat	Study report (1979)	OECD Guideline 401			
	dermal	LD50 mg/kg	560	Rabbit	Study report (1948)	Concentrated and 10% water solution was			
	inhalation vapour	ATE	11 mg/l						
	inhalation dust/mist	ATE	1,5 mg/l						

Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

Sensitising effects

May cause an allergic skin reaction. (ethylenediamine)

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (ethylenediamine)

Carcinogenic/mutagenic/toxic effects for reproduction

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.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

Causes damage to organs.

Organs affected:

Liver and kidney damage

Further information

Irritant

corrosive

Dyspnoea

Risk of serious damage to eyes.



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Pulmonary oedema Gastrointestinal complaints Vomiting

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

CAS No	Chemical name							
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method	
107-15-3	ethylenediamine							
	Acute fish toxicity	LC50	640 mg/l	96 h	Poecilia reticulata	Study report (1989)	EU Method C.1	
	Acute algae toxicity ErC50 71 mg/l		72 h	Pseudokirchneriella subcapitata	Study report (1990)	EU Method C.3		
	Acute crustacea toxicity	EC50 16,7 mg/l		48 h Daphnia magna	Daphnia magna	Study report (1989)	EU Method C.2	
	Fish toxicity	NOEC mg/l	> 10	28 d	Gasterosteus aculeatus	Study report (1992)	OECD Guideline 210	
	Crustacea toxicity	NOEC mg/l	0,16	21 d	Daphnia magna	Wat. Res. Vol 23, No. 4, 501-510,1989 (1	other: Provisional Procedure: Extended t	
	Acute bacteria toxicity	(EC50 mg/l)	1600	0,5 h	activated sludge of a predominantly domestic sewag	Study report (1989)	other: EC protocol as published O.J. 30	

12.2. Persistence and degradability

93 - 95 %; 28 d

OECD 301C

Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

log Pow: -2,04

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-15-3	ethylenediamine	-1,62

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

No data available

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

No data available

12.7. Other adverse effects

Do not allow to enter into surface water or drains.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods



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Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations.

Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: UN 1604

14.2. UN proper shipping name: ETHYLENEDIAMINE

14.3. Transport hazard class(es): 14.4. Packing group: Ш Hazard label: 8+3 Classification code: CF1 Limited quantity: 1 L Excepted quantity: F2 Transport category: 2 Hazard No: 83 Tunnel restriction code: D/F

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1604

14.2. UN proper shipping name: ETHYLENEDIAMINE

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8+3Classification code:CF1Limited quantity:1 LExcepted quantity:E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 1604

14.2. UN proper shipping name: ETHYLENEDIAMINE

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8+3Special Provisions:-Limited quantity:1 LExcepted quantity:E2EmS:F-E, S-C

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1604

14.2. UN proper shipping name: ETHYLENEDIAMINE

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8+3Limited quantity Passenger:0.5 LPassenger LQ:Y840Excepted quantity:E2

IATA-packing instructions - Passenger: 851
IATA-max. quantity - Passenger: 1 L



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IATA-packing instructions - Cargo: 855
IATA-max. quantity - Cargo: 30 L

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

Authorisations (REACH, annex XIV):

This substance has been listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH.

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40

Information according to 2012/18/EU

P5c FLAMMABLE LIQUIDS

(SEVESO III):

Additional information

This substance has been listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH.

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile

work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or

nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 12.

Abbreviations and acronyms

Flam. Liq: Flammable liquid Acute Tox: Acute toxicity Skin Corr: Skin corrosion Eye Dam: Eye damage Skin Sens: Skin sensitisation

Resp. Sens: Respiratory sensitisation Aquatic Chronic: Chronic aquatic hazard

Relevant H and EUH statements (number and full text)

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H302+H332 Harmful if swallowed or if inhaled.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

H332 Harmful if inhaled.

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

H412 Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product



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named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.