

SAFETY DATA SHEET

fluorochem.

1. Identification of Substance / Mixture

Product Identifier

1.1.2 Product Name	Ethylenediamine
1.1.2 Other Names	
1.1.1 Product Code	F043401
1.1.3 CAS	107-15-3
1.1.4 MDL	MFCD00008204
1.1.5 EINECS	203-468-6
1.1.6 REACH Registration Number	
1.2.1 Relevant Uses	For research and development purposes only.
1.2.2 Uses Advised Against	No uses advised against.

1.3 Supplier Details

1.3.1 Company	Fluorochem Ltd
1.3.2 Address	Unit 14, Graphite Way Hadfield Glossop Derbys. SK13 1QH United Kingdom
1.3.3 Telephone	01457 860111
1.3.4 Email	sds@fluorochem.co.uk
1.4.1 Emergency Telephone	+44 20 3807 3798

2. Hazards Identification

2.1.1 Classification

Acute Tox. 3
Acute Tox. 4
Aquatic Chronic 3
Flam. Liq. 3
Resp. Sens. 1
Skin Corr. 1B
Skin Sens. 1

2.2.1 Signal Word

Danger

2.2.2 Pictograms



2.2.3 Hazards

H226 Flammable liquid and vapour.
H301+H311 Toxic if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
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.

2.2.4 Precautions

- P101** If medical advice is needed, have product container or label at hand.
- P102** Keep out of reach of children.
- P201** Obtain special instructions before use.
- P202** Do not handle until all safety precautions have been read and understood.
- P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233** Keep container tightly closed.
- P240** Ground and bond container and receiving equipment.
- P241.1** Use explosion-proof equipment.
- P242** Use non-sparking tools.
- P243** Take action to prevent static discharges.
- P260.1** Do not breathe dust/fume/gas/mist/vapours/spray.
- P264** Wash hands thoroughly after handling.
- P270** Do not eat, drink or smoke when using this product.
- P271** Use only outdoors or in a well-ventilated area.
- P272** Contaminated work clothing should not be allowed out of the workplace.
- P273** Avoid release to the environment.
- P280.4** Wear protective gloves/protective clothing and eye/face protection.
- P301+P310.1** IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P301+P330+P331** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353.1** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304+P340** IF INHALED: Remove person to fresh air and keep 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.
- P308+P313** IF exposed or concerned: Get medical advice/attention.
- P310.1** Immediately call a POISON CENTER/doctor.
- P321** Specific treatment.
- P333+P313** If skin irritation or rash occurs: Get medical advice/attention.
- P342+P311.1** If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
- P361+P364** Take off immediately all contaminated clothing and wash it before reuse.
- P370+P378.1** In case of fire: Use dry sand to extinguish.
- P391** Collect spillage.
- P403+P235** Store in a well-ventilated place. Keep cool.
- P405** Store locked up.
- P501.3** Dispose of contents/container to hazardous waste disposal.

2.2.5 Other Classification Hazards

3. Composition of Ingredients

SUBSTANCE

3.1.1 Name	3.1.2 CAS	Einecs	3.1.3 Composition	Hazards
Ethylenediamine	107-15-3	203-468-6		H226 Flam. Liq. 3 H301+H311 Acute Tox. 3 H314 Skin Corr. 1B H317 Skin Sens. 1 H332 Acute Tox. 4 H334 Resp. Sens. 1 H412 Aquatic Chronic 3

4. First Aid Measures

4.1.1 Eye contact	Where Diphoterine is not available, rinse eyes with copious amounts of water for at least 20 minutes. Protect uninjured eye. Remove contact lenses if present and easy to do. Continue rinsing and seek immediate medical attention.
4.1.2 Ingestion	Where Diphoterine is not available, rinse mouth with copious amounts of water. Seek urgent medical advice.
4.1.3 Inhalation	Remove person to fresh air and keep comfortable for breathing. Immediately seek medical attention. If breathing is irregular or stopped, administer artificial respiration.
4.1.4 Skin Contact	Where Diphoterine is not available, wash immediately with plenty of water and soap. Remove contaminated clothing immediately. Immediately seek medical attention.
4.1.5 General Advice	No additional advice.
4.2.1 Most Important Symptoms and Effects	Severe burns may occur.
4.3.1 Immediate First Aid Measures	No special immediate treatment required

5. Fire Fighting Measures

5.1.1 Suitable Fire Extinguishing Media	Use sand, extinguishing powder or alcohol resistant foam to extinguish fire.
5.1.2 Unsuitable Fire Extinguishing Media	No known unsuitable media.
5.2.1 Special Hazards	Thermal decomposition can lead to release of irritating gases and vapours.
5.3.1 Advice for Fire Fighters	As in any fire, wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

6.1.1 Personal Precautions	Use personal protective equipment. Ensure Hexafluorine washing solution is to hand. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Keep personnel away from spill/leak.
6.2.1 Environmental Precautions	Prevent further leakage if safe to do so. Prevent product from entering drains. Do not let product enter waterways or sewer systems. Discharge into the environment must be avoided.
6.3.1 Containment - Methods and Materials	Absorb the spilled material with an inert absorbent (e.g. sand, silica gel, rag, vermiculite) before transferring into an airtight container. Remove all sources of ignition. Dispose of appropriately according to local regulations.
6.4.1 Referenced SDS Sections	For personal protection see section 8. For disposal see section 13.

7. Handling and Storage

Personal Precautions

7.1.1 Safe Handling	Wear appropriate personal protective equipment. Use only under a chemical fume hood. Keep away from heat/sparks/open flame/hot surfaces. Take measures to prevent the build-up of electrostatic charge. Ensure adequate exhaust ventilation, especially if dust, aerosol or fumes will be generated. Avoid contact with skin, eyes and clothing. For precautions see section 2.2.
7.1.2 Protection Against Explosion and Fire	Where possible, use anti static and spark proof equipment when handling.
7.1.3 General Occupational Hygiene	Handle in accordance with good industrial hygiene and safety practice. Wash hands before and after use. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

Conditions for Safe Storage and Incompatibilities

7.2.1 Managing Storage Risks	Keep container tightly closed and upright. Store in a cool, dry and well-ventilated place.
7.2.2 Storage Controls	Keep container tightly closed in a cool area away from sunlight or heat sources.
7.2.3 Maintaining Integrity	Keep container tightly closed in a cool area away from sunlight or heat sources.
7.2.4 Other Advice	No other specific advice available.
7.3.1 Specific End Use(s)	No specific end uses are advised. The products supplied are for research purposes only.

8. Exposure Controls / Personal Protection

8.1.1 Control Parameters	
8.2.1 Engineering Measures	Use only under a chemical fume hood ensuring adequate ventilation, especially in confined areas. Ensure Hexafluorine washing solution is close to workstation. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
8.2.2 Face Protection	Wear tightly fitting safety goggles which adhere to European standard EN 166. Ensure Hexafluorine eye wash is to hand
8.2.3 Hand Protection	Handle with impermeable gloves. Inspect gloves before use. Gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
8.2.4 Skin Protection	Wear appropriate protective clothing ensuring all skin is covered. Wear safety shoes that meet at least S1 standards. Ensure Hexafluorine washing solution is to hand. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
8.2.5 Respiratory Protection	Product should be handled in a fume cupboard with adequate extraction. No respiratory equipment is needed under normal use conditions.
8.2.6 Hygiene Protection	Ensure hair or skin particles cannot enter the chemical container.
8.2.7 Environment Exposure Controls	Avoid discharge into the environment, see section 6.2.

9. Physical and Chemical Properties

9.1.1 State	Liquid
9.1.2 Appearance	No data available.
9.1.3 Odour	No data available.
9.1.4 Odour Threshold	No data available.
9.1.5 pH	12.2 at 110g/L at 20°C
9.1.6 Melting Point / Freezing Point	10.8 - 11°C
9.1.7 Initial Boiling Point	117°C
9.1.8 Boiling Range	No data available.
9.1.9 Flash Point	38-42°C
9.1.10 Evaporation Rate	No data available.
9.1.11 Flammability	No data available.
9.1.12 Upper / Lower Flammability or Explosion Limits	No data available.

9.1.13 Vapour Pressure	1300 Pa at 20°C
9.1.14 Vapour Density	No data available.
9.1.15 Relative Density	0.897 g/cm ³ at 20°C
9.1.16 Solubility	1000 g/L at 20°C in Water
9.1.17 Partition Coefficient	-1.6 at 20°C
9.1.18 Auto Ignition Temperature	385 -405°C
9.1.19 Decomposition Temperature	No data available.
9.1.20 Viscosity	1.265 mPa s at 20°C
9.1.21 Explosive Properties	No data available.
9.1.22 Oxidising Properties	No data available.
9.2.1 Other information	No additional information available.

10. Stability and Reactivity

10.1.1 Reactivity	No known reactivity, based on information available.
10.2.1 Stability	Stable under recommended storage conditions.
10.3.1 Possibility of Hazardous Reactions	None under normal storage conditions.
10.4.1 Conditions To Avoid	Heat, sparks, open flames, sources of ignition. Exposure to moisture.
10.5.1 Incompatible Materials	Strong oxidising agents.
10.6.1 Hazardous Decomposition Products	No Data Available.

11. Toxicology Information

11.1.1 Acute Toxicity	Oral LD50, Rat, 866mg/kg Inhalation LC50, Rat - male, 6000ppm/4 h Dermal LD50, Rabbit - male, 560mg/kg/24 h
11.1.2 Skin Corrosion / Irritation	Strong corrosive effect on skin and mucous membranes.
11.1.3 Serious Eye Damage / Irritation	Strong corrosive effect.
11.1.4 Respiratory or Skin Sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.,May cause an allergic skin reaction.,Toxic if swallowed or in contact with skin .
11.1.5 Germ Cell Mutagenicity	No Toxicology data available for this product.
11.1.6 Carcinogenicity	No Toxicology data available for this product.
11.1.7 Reproductive Toxicity	No Toxicology data available for this product.
11.1.8 STOT-single Exposure	No Toxicology data available for this product.
11.1.9 STOT-repeated Exposure	No Toxicology data available for this product.
11.1.10 Aspiration Hazard	No Toxicology data available for this product.
11.2.1 Additional Toxicology Information	No Toxicology data available for this product.

12. Ecological Information

12.1.1 Toxicity	Toxicity to fish: Oryzia latipes LC50 - 1000mg/l/48 h Toxicity to aquatic invertebrates: Daphnia magna EC50 - 46mg/l/48 h Toxicity to aquatic algae and cyanobacteria: Raphidocelis subcapitata EC50 - 151mg/l/96 h
12.2.1 Persistence and Degradability	No Ecological data available for this product.
12.3.1 Bio-Accumulative Potential	No Ecological data available for this product.
12.4.1 Mobility in Soil	Log Pow: -1.6
12.5.1 Results of PBT and vPvB assessment	No Ecological data available for this product.
12.7.1 Endocrine Disrupting Properties	Avoid release to the environment.
12.6.1 Other Adverse Effects	Harmful to aquatic life with long lasting effects.

13. Disposal Considerations

13.1.1 Disposal Operations	Ensure product is disposed of by licensed waste carriers.
13.1.2 Disposal of Packaging	Ensure INNER PACKAGING is disposed of by licensed waste carriers. Some OUTER PACKAGING MAY be recyclable if not contaminated.

14. Transport Information

IATA UN Number	1604	ADR UN Number	1604	IMDG UN Number	1604
14.1.2 IATA Proper Shipping Name	Ethylenediamine (Ethylenediamine)	ADR Proper Shipping Name	Ethylenediamine (Ethylenediamine)	IMDG Proper Shipping Name	Ethylenediamine (Ethylenediamine)
IATA Packing Group	II	ADR Packing Group	II	IMDG Packing Group	II
14.1.4 IATA Hazard Class	8	ADR Hazard Class	8	IMDG Hazard Class	8
14.1.5 IATA Sub Class	3	ADR Sub Class	3	IMDG Sub Class	3

15. Regulatory Information

15.1.1 Regulatory Information As far as Fluorochem is aware, there are no further regulations controlling this product.

15.2.1 Chemical Safety Assessment No Chemical Safety Assessment is available for this product.

16. Other Information

16.1.2 Information Not Covered in Other Sections

ADR: Accord Europeen sur le transport des marchandises Dangereuses par Route(European Agreement concerning the International Carriage of Dangerous Goods by road)
 RID:Reglement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the International Air Transport Association ICAO:International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the ICAO
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 CAS:Chemical Abstracts Service

Revision

1

Date Modified

Oct 4, 2023 2:18:00 PM

16.1.1 Disclaimer

The product listed is for research and development purposes only and not for human or animal use. As such, in most cases, the toxicological, ecological and physicochemical properties have not been fully determined and the product should be treated with respect and always handled under suitable conditions by appropriately qualified personnel. The responsible party shall use this datasheet only in conjunction with other sources of information gathered by them, and should make an independent judgement of suitability, to ensure proper use and protect the health and safety of employees. This information is furnished without warranty and any use of the product not in conformance with this material safety data sheet, or in combination with any other product or process, is the responsibility of the user. This SDS adheres to Regulation (EC) No 1907/2006, and as of 13th April 2023, also conforms to EU Regulation 2020/878.