

# Safety Data Sheet

## SECTION 1: Identification of the substance and of the company

### 1.1 Product identifier

NAME: 2-(piperazin-1-yl)ethan-1-amine

PRODUCT CODE: LF-0556

CAS No: 140-31-8

Synonyms/Tradenames:

IUPAC Name: 2-(piperazin-1-yl)ethan-1-amine

MDL No: MFCD00005971

EINECS No:

REACH No: A REACH registration number is not available for this substance as the substance or its uses are exempted from registration. The annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified Use: Research and Development

### 1.3 Details of the supplier of the safety data sheet

Key Organics Limited  
Highfield Road Industrial Estate  
Camelford  
Cornwall PL32 9RA UK

Tel: +44(0)1840 212171  
Fax: +44(0)1840 213712  
Email: enquiries@keyorganics.net

### 1.4 Emergency telephone number

+44(0)1840 212137 between the hours 9am to 5pm Monday to Friday.

## SECTION 2: Hazard Identification

### 2.1 GHS Classification of the substance or mixture

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

Acute toxicity, inhalation (Category 4)

Acute toxicity, oral (Category 4)

Serious eye damage/eye irritation (Category 2A)

Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3)

Skin corrosion/irritation (Category 1B)

Sensitisation, Skin (Category 1)

Acute toxicity, dermal (Category 3)

Hazardous to the aquatic environment, long-term hazard (Category 3)

### 2.2 Label elements

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

Signal Word: Danger



#### Hazard Statements:

H302 Harmful if swallowed.  
H311 Toxic in contact with skin.

|      |                                                    |
|------|----------------------------------------------------|
| H314 | Causes severe skin burns and eye damage.           |
| H317 | May cause an allergic skin reaction.               |
| H319 | Causes serious eye irritation.                     |
| H332 | Harmful if inhaled.                                |
| H335 | May cause respiratory irritation.                  |
| H412 | Harmful to aquatic life with long lasting effects. |

**Precautionary Phrases:**

|                    |                                                                                                                                  |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| P260               | Do not breathe dust/fume/gas/mist/vapours/spray.                                                                                 |
| P262               | Do not get in eyes, on skin, or on clothing.                                                                                     |
| P270               | Do not eat, drink or smoke when using this product.                                                                              |
| P280               | Wear protective gloves/protective clothing/eye protection/face protection.                                                       |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.                                          |
| P301 + P330 + P331 | IF SWALLOWED: rinse mouth. Do NOT induce vomiting.                                                                               |
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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. |
| P402 + P404        | Store in a dry place. Store in a closed container.                                                                               |

**2.3 Other Hazards**

No Information Available

**SECTION 3: Composition/Information on ingredients****3.1 Substances**

LF-0556: 140-31-8 2-(piperazin-1-yl)ethan-1-amine  
MF: C6H15N3 MW: 129.2100

**3.2 Mixtures**

Not relevant.

**SECTION 4: First Aid Measures****4.1 Description of the first aid measures**

|              |                                                                                                                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Skin Contact | Remove any contaminated clothing and shoes. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.                                                                                                |
| Eye Contact  | Hold eyelids open and rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>If eye irritation or visual changes persists: Get medical advice/attention.               |
| Ingestion    | Do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of water to wash out mouth thoroughly. Do not give anything by mouth to an unconscious person. Get medical advice/attention. Do not leave victim unattended. |
| Inhalation   | If respiratory irritation or distress occurs, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if respiratory irritation or distress continues.                        |

**4.2 Most important symptoms and effect, both acute and delayed**

To the best of our knowledge the acute and delayed symptoms and effects of this substance are not fully known.

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

Call a POISON CENTRE or doctor/physician if you feel unwell.  
No additional measures required.

**SECTION 5: Firefighting Measures****5.1 Extinguishing media**

Suitable:

Carbon Dioxide  
Dry Chemical Powder  
AFFF  
Water

Unsuitable:

Do not use water with a full water jet.

## 5.2 Special hazards arising from the substance or mixture

In combustion toxic fumes may form.

## 5.3 Advice for fire fighters

Wear protective clothing to prevent contact with skin and eyes.  
Wear self-contained breathing apparatus.

## SECTION 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures.

Refer to section 8 of SDS for personal protection details.

### 6.2 Environmental precautions.

Do not discharge into rivers and drains.

### 6.3 Methods and materials for containment and cleaning up

Mix with sand or vermiculite, transfer to suitable container and arrange disposal by approved disposal specialists.

## SECTION 7: Handling and Storage

### 7.1 Precautions for safe handling

Safe handling:

Do not store, use, and/or consume foods, beverages, tobacco products or cosmetics in areas where this material is stored.  
Wash hands and face carefully before eating, drinking, using tobacco or applying cosmetics in areas where this material is stored.  
Handle in BS approved adequately ventilated fume cupboard.  
Wash exposed skin promptly to remove accidental splashes of contact with this material.  
Remove and thoroughly wash any clothing if spillage occurs.

Protection against explosions and fires:

Undertake normal measures for fire protection.  
Minimal explosion risk.

### 7.2 Conditions for safe storage, including any incompatibilities

Managing storage risks:

Keep container tightly closed, store in cool, well ventilated area.

Storage controls:

No special requirements

Maintaining integrity:

Keep in tightly closed container in a cool area away from direct sunlight or heat sources.

Further information about storage conditions:

Store in well ventilated place. Keep container tightly closed.

### 7.3 Specific end use(s)

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes only and should be handled by appropriately trained professionals only.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

No data available.

### 8.2 Exposure controls

General protective & hygiene measures:

Wear protective gloves/protective clothing/eye protection/face protection. The standard precautionary measures should be adhered to when handling this material. Wash hands during breaks and at the end of handling the material.  
Remove immediately any contaminated clothing or footwear and either wash thoroughly or dispose of in hazardous waste.

Engineering measures:

Set up hand-wash station and eye station near work area.  
General area dilution/exhaust ventilation.  
Use only in a BS approved fume cupboard or in a well ventilated area.

|                                    |                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye/face protection:               | Safety glasses (NIOSH(US) or EN 166(EU)) and/or full face visor if handling large amounts.                                                                                                                                                                                                                                                                             |
| Hand protection:                   | Suitable protective gloves or gauntlets satisfying EU Directive 89/686/EEC and the standard EN374 derived from it.                                                                                                                                                                                                                                                     |
| Respiratory protection:            | Avoid breathing dust, fumes, gas, mist, vapours or sprays. For low level exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABE1P3D (EU EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). |
| Skin protection:                   | Protective clothing and gloves or gauntlets.                                                                                                                                                                                                                                                                                                                           |
| Other personal protection advice:: | No data.                                                                                                                                                                                                                                                                                                                                                               |

## SECTION 9: Physical and Chemical Properties

### 9.1 Physical and chemical properties

|                               |                                                                    |
|-------------------------------|--------------------------------------------------------------------|
| Appearance/form:              | Liquid                                                             |
| Molecular formula:            | C6H15N3                                                            |
| Molecular weight:             | 129.21                                                             |
| Odour:                        | ammoniacal                                                         |
| Odour threshold:              | No data available                                                  |
| pH:                           | No data available                                                  |
| Melting/Boiling point (°C):   | MP: -19 °C at 1013.0 hPa BP: 218 - 222 °C                          |
| Flash point:                  | 92 °C - closed cup                                                 |
| Evaporation rate:             | No data available                                                  |
| Flammability (solid,gas):     | No data available                                                  |
| Upper/lower explosive limits: | Upper explosion limit: 9.4 %(V)<br>Lower explosion limit: 1.1 %(V) |
| Vapour pressure:              | 0.05 hPa at 20 °C                                                  |
| Vapour density:               | 5.18                                                               |
| Relative density:             | 0.985 g/mL at 25 °C                                                |
| Solubility(ies):              | Water solubility 100 g/l at 20 °C - soluble                        |
| Partition coefficient:        | log Pow: -1.48 at 20 °C                                            |
| Auto ignition temperature:    | > 300 °C at 1,013 hPa                                              |
| Decomposition temperature:    | No data available                                                  |
| Viscosity:                    | Viscosity, dynamic: 14.1 mPa.s at 20 °C                            |
| Explosive properties:         | No data available                                                  |
| Oxidising properties:         | No data available                                                  |

### 9.2 Other information

No other information is available.

## SECTION 10: Stability and Reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating, A range from approx. 15 Kelvin below the flash point is to be rated as critical

### 10.2 Chemical stability

Stable under normal conditions as stated in section 7.

### 10.3 Possibility of hazardous reactions

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!  
Violent reactions possible with:  
Strong acids  
Acid anhydrides  
Aldehydes

### 10.4 Conditions to avoid

Heating, Copper, Light metals, various metals, Nickel

### 10.5 Incompatible materials

Copper, Light metals, various metals, Nickel

## 10.6 Hazardous decomposition products

In combustion emits toxic fumes.

## SECTION 11: Toxicology Information

All the data contained in this section is derived from actual test data unless otherwise stated.

### 11.1 Information on toxicology effects

|                                    |                                                                                                                                                                                                                                                 |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute toxicity:                    | LD50 Oral - Rat - male - 2,097 mg/kg<br>LD50 Dermal - Rabbit - male - 866 mg/kg                                                                                                                                                                 |
| Skin corrosion/irritation:         | Causes severe skin irritation.Skin - Rabbit Result: Corrosive - 4 h                                                                                                                                                                             |
| Serious eye damage/irritation:     | Eyes - Rabbit<br>Result: Risk of serious damage to eyes.                                                                                                                                                                                        |
| Respiratory or skin sensitisation: | Maximization Test - Guinea pig<br>Result: May cause sensitization by skin contact.<br>(OECD Test Guideline 406)                                                                                                                                 |
| Germ cell mutagenicity:            | Test Type: Hamster<br>Test system: ovary<br>Metabolic activation: with and without metabolic activation<br>Result: negative<br>Test Type: In vivo micronucleus test<br>Species: Mouse<br>Application Route: Intraperitoneal<br>Result: negative |
| Carcinogenicity:                   | No data available.                                                                                                                                                                                                                              |
| Reproductive toxicity:             | No data available.                                                                                                                                                                                                                              |
| STOT single exposure:              | No data available.                                                                                                                                                                                                                              |
| STOT repeated exposure:            | No data available.                                                                                                                                                                                                                              |
| Aspiration hazard:                 | No data available.                                                                                                                                                                                                                              |
| Signs and Symptoms of Exposure:    | No data available.                                                                                                                                                                                                                              |

### 11.2 Additional Information

RTECS: TK8050000

## SECTION 12: Ecological Information

All the data contained in this section is derived from actual test data unless otherwise stated.

### 12.1 Toxicity

Toxicity to fish static test LC50 - Pimephales promelas (fathead minnow) - ca. 2,190 mg/l - 96 h  
Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 58 mg/l - 48 h  
Toxicity to algae EC50 - Pseudokirchneriella subcapitata (algae) - 495 mg/l - 72 h (OECD Test Guideline 201)  
Toxicity to bacteria Respiration inhibition EC50 - Bacteria - 511 mg/l - 2 h

### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: 0 % - Not readily biodegradable. (OECD Test Guideline 301F)

### 12.3 Bioaccumulative potential

No data available.

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

### 12.6 Other adverse effects

No data available.

## SECTION 13: Disposal Considerations

### 13.1 Waste treatment methods

|                          |                                                                   |
|--------------------------|-------------------------------------------------------------------|
| Disposal considerations: | Consult state, local or national regulations for proper disposal. |
| Disposal of packaging:   | Disposal must be made according to official regulations.          |

## SECTION 14: Transport Information

**14.1 UN number**

2815

**14.2 UN proper shipping name**

N-AMINOETHYLPIPERAZINE

**14.3 Transport class(es)**

8 (6.1)

**14.4 Packaging group**

III

**14.5 Environmental hazards**

Air (ICAO/IATA): No

Road (ADR/RID): No

Sea (IMDG): No

**14.6 Special precautions for user**

Air (ICAO/IATA): No data available

Road (ADR/RID): No data available

Sea (IMDG): No data available

**SECTION 15: Regulatory Information****15.1 Safety, health and environmental regulations**

Product is not subject to any additional regulations or provisions. This datasheet complies with the requirements of regulations (EC) No. 1907/2006.

**15.2 Chemical safety assessment**

No chemical safety assessment under Regulation (EC) 1907/2006 is required and has not been carried out.

**SECTION 16: Other Information**

Date of Previous SDS: 14 September 2023

Date of Revision: 25 September 2025

List of abbreviations used within SDS:

ADR: Accord European 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 par chemin de fer (Regulations concerning the International transport of Dangerous Goods by Rail).

IMDG: International Maritime Code of Dangerous goods.

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulations by the International Air Transport Association.

ICAO: International Civil Aviation Organisation.

ICAO-IT: Technical Instructions by the ICAO.

GHS: Globally Harmonised System of Classification and Labelling of Chemicals.

CAS: Chemical Abstracts Service.

IUPAC: International Union for Pure and Applied Chemistry.

MDL: Molecular Design Ltd

EINECS: European Inventory of Existing Commercial Chemical Substances.

EPA: European Protection Agency.

IARC: International Agency on Research on Cancer.

NTP: National Toxicology Program.

OSHA: Occupational Safety and Health Administration.

ACGIH: American Conference of Industrial Hygienists.

**Disclaimer**

The information in this Safety Data Sheet is correct to the best of our knowledge at the date of publication. However, the information given should be considered only as a guide. The product listed is for research and development purposes only and not for human or animal use. As such the toxicological, ecological and physiochemical properties have not been fully investigated or determined and the product should be treated with respect and always handled under suitable conditions by suitably 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 Safety Data Sheet is not intended to be a replacement of any statutory assessments required to be completed by the user. This information is furnished without warranty and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Key Organics Ltd. cannot accept liability for any loss, damage or injury which may result from the use of this product.

## **End of SDS**