



HEPES
CAS No 7365-45-9

MATERIAL SAFETY DATA SHEET
SDS/MSDS

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

1.1 Product identifiers

Product name : HEPES

CAS-No. : 7365-45-9

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

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi -110002
INDIA

Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Other hazards

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.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : 4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid

Formula : $C_8H_{18}N_2O_4S$
Molecular weight : 238.30 g/mol
CAS-No. : 7365-45-9
EC-No. : 230-907-9

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. 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.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance le (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

No special environmental precautions required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form: Crystalline powder
Colour: colourless |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | 5.0 - 6.5 at 238 g/l at 25 °C |
| e) Melting point/freezing point | Melting point/range: 212.6 °C - Decomposes before melting. |
| f) Initial boiling point and boiling range | Decomposes below the boiling point. |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | The product is not flammable. - Flammability (solids) |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |

- | | |
|---|--|
| m) Relative density | 1.439 g/cm ³ at 20 °C |
| n) Water solubility | 703.6 g/l at 20 °C - OECD Test Guideline 105 |
| o) Partition coefficient: n-octanol/water | log Pow: < -3.85 |
| p) Auto-ignition temperature | does not ignite |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | Not explosive |
| t) Oxidizing properties | The substance or mixture is not classified as oxidizing. |

9.2 Other safety information

Surface tension 63.98 mN/m at 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides

Other decomposition products - No data available

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Dermal - Rat - > 2,000 mg/kg(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)
(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Result: No skin irritation

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Result: No eye irritation

(OECD Test Guideline 405)

Respiratory or skin sensitisation

Maximisation Test - Guinea pig(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

in vitro assay(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Result: negative

Lymphoma Mutation Assay

Chromosome aberration test in vitro(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Result: negative

Result: Not mutagenic in Ames Test

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Did not show teratogenic effects in animal experiments.(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Specific target organ toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Specific target organ toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

No aspiration toxicity classification(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

Additional Information

Repeated dose toxicity - Rat - Oral - 28 d - No observed adverse effect level - 1,000 mg/kg(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

RTECS: TL6809000

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC50 - Brachydanio rerio (zebrafish) - > 100 mg/l - 96 h(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)
Toxicity to algae	static test EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid) (OECD Test Guideline 201) NOEC - Pseudokirchneriella subcapitata (green algae) - 100 mg/l - 72 h(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid) (OECD Test Guideline 201)
Toxicity to bacteria	EC50 - Sludge Treatment - > 1,000 mg/l - 3 h(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid) (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability Result: - According to the results of tests of biodegradability this product is not readily biodegradable.
(OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No bioaccumulation is to be expected (log Pow <= 4).

