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
Ansari Road Daryaganj
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 (NOx), 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/cm3 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 (NOx), 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).

12.4 Mobility in soil

No data available(4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid)

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

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.