

According to Regulation (EC) No 1907/2006

HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid)



Version number: 2
 Issued: 2023-11-02
 Replaces SDS: 2018-03-23

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

1.1. Product identifier

Trade name

HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid)

CAS number

7365-45-9

EC number

230-907-9

Synonyms

4-(2-hydroxyethyl)piperazin-1-ylethanesulphonic acid

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

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,
 DL1 4XX Darlington
 United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email address

+44 (0) 7769276927

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1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The product is not classified as hazardous according to Regulation (EC) No 1272/2008.

2.2. Label elements

The product does not require labelling in accordance with CLP Regulation (EC) No 1272/2008.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid)	7365-45-9 230-907-9 - -	100%	-	- - -	-

Molecular weight

238.31

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Move to fresh air if inhaled.

Get medical attention if any discomfort continues.

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Skin contact

Rinse skin with water.

If skin irritation or rash occurs: Get medical advice/attention.

Eye contact

Remove contact lenses if present. Rinse eyes with water.

If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth.

Get medical advice/attention if you feel unwell.

Information for doctors

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation

May cause respiratory irritation.

Skin contact

Prolonged contact may cause dryness of the skin.

Eye contact

May be slightly irritating to the eyes.

Ingestion

May cause discomfort if swallowed.

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

Treat symptomatically. No special treatment requirement.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

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5.2. Special hazards arising from the substance or mixture

Specific hazards: None.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Carbon monoxide (CO). Carbon dioxide (CO₂).

Nitrous gases (NO_x).

Sulfur oxides

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. For personal protection, see section 8.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation. For precautions see section 2.2.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at ambient temperature. Store in a dry place. Store in a closed container.

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7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

No occupational exposure limit assigned.

8.2. Exposure controls

Personal Protective Equipment Symbols



Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves.

Recommended gloves: Nitrile.

Glove Thickness: 0.11mm

Breakthrough time: 8

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation.

Environmental exposure controls

Avoid discharge into drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Solid

Colour

Colourless.

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Odour

Odourless.

Melting point / freezing point

209 - 215 °C

Boiling point or initial boiling point and boiling range

No data available

Flammability

No data available

Lower and upper explosion limit

No data available

Flash point

No data available

Auto-ignition temperature

No data available

Decomposition temperature

No data available

pH

5 - 6.5

Kinematic viscosity

No data available

Solubility

703.6 g/l

Partition coefficient n-octanol/water

No data available

Vapour pressure

No data available

Density and/or relative density

1.439 g/cm³

Relative vapour density

No data available

Particle characteristics

No data available

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9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Strong oxidising agents.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

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

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Test animals
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	LD50	>2000 mg/kg	Oral	Rat
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	LD50	>2000 mg/kg	Dermal	Rat

Skin corrosion/irritation

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Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	No skin irritation.	4 hours	Rabbit

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	No eye irritation.	30 seconds	Rabbit

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	Negative.	Guinea Pig	Guinea pig maximization test (GPMT):

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Metabolic activation / Exposure	Species	Method / Guideline
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	Negative.	with and without metabolic activation	Escherichia coli/Salmonella typhimurium	Ames test
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	Negative.	with and without metabolic activation	Mouse lymphoma cells	In vitro mammalian cell gene mutation test.
HEPES (4-(2-	Negative.	with and without meta-	Human lymphocytes	Mutagenicity (mammal

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Product / Substance name CAS / EC no.	Result	Metabolic activation / Exposure	Species	Method / Guideline
Hydroxyethyl)piperazine -1-ethanesulfonic acid) 7365-45-9 / 230-907-9		bolic activation		cell test): Chromosome aberration:

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute fish toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
HEPES (4-(2-Hydroxyethyl)piperazine -1-ethanesulfonic acid) 7365-45-9 / 230-907-9	LC50	>100 mg/l	96 hours	Brachydanio rerio (Zebra Fish)

Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
HEPES (4-(2-Hydroxyethyl)piperazine -1-ethanesulfonic acid) 7365-45-9 / 230-907-9	NOEC	>100 mg/l (vapours)	72 hours	Pseudokirchneriella sub- capitata
HEPES (4-(2-Hydroxyethyl)piperazine -1-ethanesulfonic acid) 7365-45-9 / 230-907-9	ErC50	>100 mg/l	72 hours	Pseudokirchneriella sub- capitata

Acute crustacean toxicity

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Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	EC50	>100 mg/l	48 hours	Daphnia magna

Micro-/macro organism toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	EC50	>1000 mg/l	3 hours	Activated sludge.

12.2. Persistence and degradability

Persistence and degradability

Product / Substance name CAS / EC no.	Type of test	Duration	Result	Degradation
HEPES (4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid) 7365-45-9 / 230-907-9	aerobic	28 days	0%	The product is not readily biodegradable.

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

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12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU regulations

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

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

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SECTION 16: Other information

No data available