SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

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

1.1 Product identifiers
Product name: HEPES, Free Acid, ULTROL Grade - CAS 7365-45-9 - Calbiochem

Product Number: 391338
Catalogue No.: D45249
Brand: Millipore
REACH No.: 01-2120054645-54-XXXX
CAS-No.: 7365-45-9

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Reagent for development and research

1.3 Details of the supplier of the safety data sheet
Company: Merck KGaA
Frankfurter Str. 250
D-64271 DARMSTADT

Emergency telephone
Emergency Phone #: +(44)-870-8200418 (CHEMTREC (GB))
+(353)-19014670 (CHEMTREC Ireland)
001-803-017-9114 (CHEMTREC India)

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

Formula: C8H18N2O4S
Molecular weight: 238.31 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
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

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
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides
Nitrogen oxides (NOx)
Sulfur oxides
Combustible.
Fire may cause evolution of:
Sulfur oxides, nitrogen oxides
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.
5.4 **Further information**
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### SECTION 6: Accidental release measures

6.1 **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 **Environmental precautions**
Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up**
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 **Reference to other sections**
For disposal see section 13.

### SECTION 7: Handling and storage

7.1 **Precautions for safe handling**
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**
**Storage conditions**
Tightly closed. Dry.
Recommended storage temperature see product label.

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**

**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). Safety glasses

**Skin protection**
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
The life science business of Merck operates as MilliporeSigma in the US and Canada.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

**Respiratory protection**
required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type: Filter type P1

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Control of environmental exposure**
Do not let product enter drains.

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**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

- **a) Appearance** Form: crystalline, powder
  Color: white
- **b) Odor** No data available
- **c) Odor Threshold** No data available
- **d) pH** 5,0 - 6,5 at 238,0 g/l at 25,0 °C
- **e) Melting point/freezing point** Melting point: 212,6 °C at 1.013 hPa - OECD Test Guideline 102
- **f) Initial boiling point and boiling range** No data available
- **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** No data available
9.2 Other safety information

Bulk density ca.560 kg/m3

SECTION 10: Stability and reactivity

10.1 Reactivity
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No information available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
No data available
LD50 Oral - Rat - male and female - > 2.000 mg/kg  
(OECD Test Guideline 423)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg  
(OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - Rabbit  
Result: No skin irritation  
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit  
Result: No eye irritation  
(OECD Test Guideline 405)

**Respiratory or skin sensitization**
Maximization Test - Guinea pig  
Result: negative  
(OECD Test Guideline 406)

**Germ cell mutagenicity**
reverse mutation assay  
Escherichia coli/Salmonella typhimurium  
Result: negative  
Mutagenicity (mammal cell test): chromosome aberration.  
Human lymphocytes  
Result: negative

**Carcinogenicity**
IARC: No ingredient 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**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

### 11.2 Additional Information
Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

Handle in accordance with good industrial hygiene and safety practice.
SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
- static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h
  (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates
- static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h
  (OECD Test Guideline 202)

Toxicity to algae
- static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h
  (OECD Test Guideline 201)
- static test NOEC - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h
  (OECD Test Guideline 201)

Toxicity to bacteria
- Respiration inhibition EC50 - activated sludge - > 1.000 mg/l - 3 h
  (OECD Test Guideline 209)

12.2 Persistence and degradability

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

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
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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
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**

Further information
Not classified as dangerous in the meaning of transport regulations.

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**SECTION 15: Regulatory information**

15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Not applicable

**National legislation**

15.2 **Chemical Safety Assessment**
For this product a chemical safety assessment was not carried out

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**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. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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