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MATERIAL SAFETY DATA SHEET

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

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
Product Name: Hepes Buffer Date: 7th July 2017 Version: Discofinechem3
Company: Discovery Fine Chemicals Ltd
Unit 4A Old Forge Road, Ferndown Ind. Estate
Wimborne Dorset BH21 7RR
United Kingdom
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2. HAZARDS IDENTIFICATION
2.1 Classification of the substance or mixture
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.
2.2 Label elements
Hazard Statements: None
Precautionary Statements
P261 Avoid breathing dust
P281 Use personal protective equipment as required.
R Phrases: None
S Phrases:
S.22 Do not breathe dust
S.24/25 Avoid contact with skin and eyes
The product does not need to be labelled in accordance with EC directives or respective national laws.
2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substances
Synonyms: 4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid
N-(2-Hydroxyethyl)piperazine-N′-(2-ethanesulfonic acid)
Formula: C8H18N2O4S Molecular Weight: 238.30 g/mol; Registration number: 01-2120054645-54-XXXX
CAS-No 7365-45-9. E.C-No. 230-907-9 Index-No.- Classification- Concentration-
4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid

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) - No data available
SECTION 8: Exposure controls/personal protection
8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.
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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
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 levels of dusts are desired, use type N95 (US) or type P1 (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
9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties
a) Appearance - Form: crystalline, Colour: white
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: noctanol/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 - no data available
t) Oxidizing properties - no data available
9.2 Other safety information - Surface tension - 63.98 mN/m at 20 °C
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 - 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
(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 sensitisation
Maximisation Test (GPMT) - Guinea pig
Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity
in vitro assay
Result: negative
Lymphoma Mutation Assay
Chromosome aberration test in vitro
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.

Specific target organ toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

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

Additional Information
Repeated dose toxicity - Rat - Oral - 28 d - No observed adverse effect level - 1,000 mg/kg
RTECS: TL6809000

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish LC50 - Brachydanio rerio (zebrafish) - > 100 mg/l - 96 h
(OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h
Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h
(OECD Test Guideline 201)
NOEC - Pseudokirchneriella subcapitata (green algae) - 100 mg/l - 72 h
(OECD Test Guideline 201)
Toxicity to bacteria EC50 - Sludge Treatment - > 1,000 mg/l - 3 h
(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 Bio-accumulative potential - No bioaccumulation is to be expected (log Pow <= 4).

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, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (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
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available
15.2 Chemical Safety Assessment - For this product a chemical safety assessment was not carried out
SECTION 16: Other information
Further information
Text of H-code(s) and R-phrase(s) mentioned in Section 2
Do not apply
WARRANTY
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.