

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 5.1 Revision Date 26.09.2013

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Pentaerythritol tetrakis(3-mercaptopropionate)

Product Number : 381462

Brand : Aldrich

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 7575-23-7

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Chemicals Pvt Limited
Plot No 12 Bommasandra - Jigani Link Road
560100 BANGALORE
INDIA

Telephone : +91 80-6621 9400

Fax : +91 80-6621 9450

1.4 Emergency telephone number

Emergency Phone # : +91-9880711432

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Acute toxicity, Oral (Category 4), H302
Skin sensitisation (Category 1), H317
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn, N Harmful, Dangerous for the environment R22, R43, R50/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements**Labelling according Regulation (EC) No 1272/2008**

Pictogram



Signal word

Warning

Hazard statement(s)

H302

Harmful if swallowed.

H317

May cause an allergic skin reaction.

| | |
|--------------------------------|---------------------------------------------------------------------|
| H410 | Very toxic to aquatic life with long lasting effects. |
| Precautionary statement(s) | |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |
| Supplemental Hazard Statements | none |

2.3 Other hazards

Stench.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | | |
|------------------|---|-----------------------------------------------------------------------------------------------------------------------------|
| Formula | : | C ₁₇ H ₂₈ O ₈ S ₄ C ₁₇ H ₂₈ O ₈ S ₄ |
| Molecular Weight | : | 488,66 g/mol |
| CAS-No. | : | 7575-23-7 |
| EC-No. | : | 231-472-8 |

Hazardous ingredients according to Regulation (EC) No 1272/2008

| Component | Classification | Concentration |
|-------------------------------------------------------|----------------|----------------------------------------------------------------------------------------|
| Pentaerythritol tetrakis(3-mercaptopropionate) | | |
| CAS-No. | 7575-23-7 | Acute Tox. 4; Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 1; H302, H317, H410 |
| EC-No. | 231-472-8 | |
| | | <= 100 % |

Hazardous ingredients according to Directive 1999/45/EC

| Component | Classification | Concentration |
|-------------------------------------------------------|----------------|---------------------------|
| Pentaerythritol tetrakis(3-mercaptopropionate) | | |
| CAS-No. | 7575-23-7 | Xn, N, R22 - R43 - R50/53 |
| EC-No. | 231-472-8 | |
| | | <= 100 % |

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

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

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

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. Consult a physician.

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, Sulphur oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. 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

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. 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. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under nitrogen.

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|-------------------------------------------------|---------------------------------------------------|
| a) Appearance | Form: clear, viscous liquid Colour: colourless |
| b) Odour | Stench. |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | ca. < -40,1 °C - OECD Test Guideline 102 |
| f) Initial boiling point and boiling range | 275 °C at 1 hPa - lit. |
| g) Flash point | > 110 °C - closed cup |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| 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 1,28 g/cm³ at 25 °C
- n) Water solubility ca.0,00369 g/l at ca.20 °C - OECD Test Guideline 105
- o) Partition coefficient: n-octanol/water log Pow: 3,03 at 30 °C
- p) Auto-ignition temperature no data available
- 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

no data available

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

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 Oral - rat - female - 1.000 - 2.000 mg/kg
(OECD Test Guideline 423)

Inhalation: no data available

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

no data available

Germ cell mutagenicity

Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

no data available

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

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

Additional Information

RTECS: Not available

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

SECTION 12: Ecological information

12.1 Toxicity

| | |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Toxicity to fish | semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0,42 mg/l - 96 h (OECD Test Guideline 203) |
| | semi-static test NOEC - Oncorhynchus mykiss (rainbow trout) - 0,32 mg/l - 96 h (OECD Test Guideline 203) |
| Toxicity to daphnia and other aquatic invertebrates | Remarks: no data available |
| Toxicity to algae | static test EC50 - Desmodesmus subspicatus (green algae) - > 0,12 mg/l - 72 h (OECD Test Guideline 201) |
| | static test NOEC - Desmodesmus subspicatus (green algae) - 0,12 mg/l (OECD Test Guideline 201) |

12.2 Persistence and degradability

| | |
|------------------|---------------------------------------------------------------------------------------------------------|
| Biodegradability | aerobic - Exposure time 48 h Result: 26 % - Not readily biodegradable. (OECD Test Guideline 301B) |
|------------------|---------------------------------------------------------------------------------------------------------|

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

Very toxic to aquatic life with long lasting 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: 3082

IMDG: 3082

IATA: 3334

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Pentaerythritol tetrakis(3-mercaptopropionate))

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Pentaerythritol tetrakis(3-mercaptopropionate))

IATA: Aviation regulated liquid, n.o.s. (Pentaerythritol tetrakis(3-mercaptopropionate))

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: no

14.6 Special precautions for user**Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

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**Full text of H-Statements referred to under sections 2 and 3.**

| | |
|-----------------|-------------------------------------------------------|
| Acute Tox. | Acute toxicity |
| Aquatic Acute | Acute aquatic toxicity |
| Aquatic Chronic | Chronic aquatic toxicity |
| H302 | Harmful if swallowed. |
| H317 | May cause an allergic skin reaction. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Full text of R-phrases referred to under sections 2 and 3

| | |
|-----|-------------------------------|
| N | Dangerous for the environment |
| Xn | Harmful |
| R22 | Harmful if swallowed. |

R43 May cause sensitisation by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Further information

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