

**Safety data sheet as per COMMISSION REGULATION (EU) No 453/2010
of 20 May 2010 amending Regulation (EC) No 1907/2006
Product: Tetrakis Hydroxymethyl Phosphonium Sulphate**



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

1.1 Product identifier

Trade name: Tetrakis Hydroxymethyl Phosphonium Sulphate/ THPS

CAS No.: 55566-30-8

EC No.: 259-709-0

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

Relevant identified uses: THPS is a broad spectrum bactericide and fungicide particularly effective against sulfate-reducing bacteria and general aerobic bacteria. It is used as an anti-foulant in oil recovery systems and for controlling microbial growth in industrial freshwater systems, in paper manufacture, coatings and emulsions. It is used to produce crease-resistant and flame-retardant finishes on textile fabrics.

Uses identified against: not for use other than that identified

1.2 Details of the supplier of the safety data sheet:

Manufacturer/Supplier:

Prasol Chemicals Ltd.,
Prasol House, Plot No.A-17/2/3,
T.T.C. Indl. Area, Khairne M.I.D.C.,
Navi Mumbai - 400 710.
Maharashtra, India.
Tel: +91-22-27782555
Fax: +91-22-27782430

Further information obtainable from:

Mr. Dhaval Parikh

e-mail:sales@prasolchem.com; inquiry@prasolchem.com

1.4 Information in case of emergency:

Product safety department Tel: +91-22- 27782555; Fax:+91-22- 27782430

Other Comments (e.g. language(s) of the phone service): English

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008(CLP):



GHS05

Acute Tox. 4



GHS06

Harmful if swallowed



GHS08

May cause an allergic skin reaction



GHS09

Skin Sens. 1A

H302

Causes serious eye damage

Eye Dam. 1

H317

Acute Tox. 3

H318

Toxic if inhaled

Repr. 1B

H331

May damage fertility of unborn child

Aquatic Acute 1

H400

Very toxic to aquatic life

H340 May cause genetic defects

2.1.2 Classification according to Directive 67/548/EEC or Directive 1999/45/EC:



Xn; Harmful Xi; Irritant

R20/21/22

Harmful by inhalation, in contact with skin and if swallowed

R34

Causes burns

R41

Risk of serious damage to eyes

R43

May cause sensitisation by skin contact

R61

May cause harm to unborn child

Information concerning particular hazards for human and environment: Not applicable

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP)

The substance is classified and labeled according to the CLP regulation.

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Hazard pictograms



Signal word **Danger**

Hazard-determining components of labeling: **THPS**

Hazard statements

- H302 Harmful if swallowed
- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H331 Toxic if inhaled
- H360 May damage fertility of unborn child
- H400 Very toxic to aquatic life
- H340 May cause genetic defects

Precautionary statements

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P281 Use personal protective equipment as required.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P405 Store locked up
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Other hazards

Results of PBT and vPvB assessment: Not applicable

SECTION 3: Composition/information on ingredients

Chemical characterization:

CAS No. Description
55566-30-8 Tetrakis Hydroxymethyl Phosphonium Sulphate/ THPS

Identification number(s)

EC Number : 259-709-0

Additional information:

Molecular Formula: C₈H₂₄O₁₂P₂S Molecular Weight: 406.28

SECTION 4: First aid measures

4.1 General information:

After inhalation: If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention.

After skin contact: Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin with running water. Wash skin with soap and water. In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. Keep victim warm and quiet.

After eye contact: Immediately flush eyes with running water for at least 20 minutes. If symptoms persist consult a doctor.

After swallowing: If conscious, immediately give large quantities of water and induce vomiting. Lower the head so that the vomit will not reenter the mouth and throat. If symptoms persist consult doctor.

Information for doctor: Treat symptomatically and supportively.

4.2 Most important symptoms and effects, both acute and delayed burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Central nervous system depression, narcosis.

4.3 Indication of any immediate medical attention and special treatment needed no further information

SECTION 5: Firefighting measures

5.1 Suitable extinguishing agents: CO₂, powder or water spray. Fight larger fires with water spray or alcohol

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resistant foam

5.2 Special hazards caused by the substance, its products of combustion or resulting gases: Closed containers can explode due to buildup of pressure when exposed to extreme heat.

Products of combustion include smoke, toxic fumes, oxides of carbon including carbon monoxide, phosphorous oxides, phosphine and sulfur oxides

5.3 Protective equipment:, wear self-contained breathing apparatus

Additional information Use water spray to cool unopened containers

SECTION 6: Accidental release measures

6.1 Person-related safety precautions:

Wear protective clothing.

Keep unprotected persons away. Do not touch or walk through spilled material. Can cause slippery condition

6.2 Measures for environmental protection: Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water.

6.3 Measures for cleaning/collecting: Eliminate all ignition sources. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. A vapor suppressing foam may be used to reduce vapors.

Large spills: Dike far ahead of liquid spill for later disposal.

Additional information: no further information

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment

See Section 13 for disposal information

SECTION 7: Handling and storage

7.1 Precautions for safe handling: Avoid breathing mist, if any should be formed. Minimize contact of liquid with eyes, skin and clothing. Use good personal hygiene and housekeeping. Do not handle broken packages without protective equipment. Wash away any material which may have contacted the body with copious amounts of water or soap and water.

Information about fire and explosion protection: Eliminate all ignition sources (Do not smoke, flares, sparks or flames in immediate area). Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities: Steel tanks. Avoid using containers, pipes and fittings made of zinc-clad, copper-bearing alloys or aluminum. Storage in open containers may result in formation of an ammonium polyphosphate solid on walls. Protect from physical damage. Aluminum tanks not recommended because of possible pitting. Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area.

Information about storage in one common storage facility: Store away from incompatibles.

Further information about storage conditions:

Store in closed containers, and keep away from heat, sparks, and flames. Store in cool and dry conditions.

7.3 Specific end use(s) No further relevant information available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

ACGIH 2mg/cm³ (TWA)

8.2 Exposure controls Avoid high dust concentration and provide ventilation where necessary.

Personal protective equipment:

General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled/ contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Respiratory protection: Use suitable respiratory protective device in case of insufficient ventilation.

Protection of hands: Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Material of gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer

Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Tightly sealed goggles; Face shield

Body protection: Protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: colorless to yellow liquid
Odor	: characteristic pungent odor
Odor threshold	: not determined
pH	: 3-4 (at 25°C, 1w/w%)
Melting point/Melting range	: -35°C
Boiling point/Boiling range	: 109°C
Flash point	: 96°C
Evaporation rate	: <1 (butyl acetate=1)
Flammability (solid, gas)	: no data available
Upper/lower flammability or explosive limits	: no data available
Vapour pressure at 25°C	: 1.7kPa
Vapour density	: >1(air=1)
Density at 20°C	: 1.37-1.4g/cm ³
Solubility in / Miscibility with water	: miscible
Partition coefficient (n-octanol/water) at 23°C: Log Pow	9.8(calculated)
Auto-ignition temperature	: 279°C
Decomposition temperature	: 275°C
Viscosity: Dynamic at 25°C	: 50mPas
Explosive properties	: Product is not explosive.
Oxidising properties	: no oxidising properties

9.2 Other information: no further information

SECTION 10: Stability and reactivity

10.1 Reactivity No dangerous reactions known.

10.2 Chemical stability stable under recommended conditions

10.3 Possibility of hazardous reactions Decomposition will not occur if handled and stored properly. In case of a fire, smoke, toxic fumes, oxides of carbon to include carbon monoxide, phosphorous oxides, and phosphine and sulfur oxides will be produced

10.4 Conditions to avoid: alkali, oxidizers

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.5 Incompatible materials Strong oxidizers, strong alkali

10.6 Hazardous decomposition products: phosphine, phosphorous and sulfur oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

LD 50	Oral	575mg/kg	rat	
LC50	Inhalation	0.59mg/Kg	4h	rat

Skin corrosion/irritation: irritating

Serious eye damage/irritation: serious eye damage

Respiratory or skin sensitization: allergic effect on skin.

Germ cell mutagenicity: no conclusive evidence available

Carcinogenicity: not classifiable as to their carcinogenicity to humans (Group 3)

Revision: 15-01

Issue Date: 04.08.2015

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Reproductive toxicity: toxic

STOT-single exposure: harmful to eyes, skin

STOT-repeated exposure: adverse effect on liver, spleen and bone marrow

Aspiration hazard: can cause serious adverse effects

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

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

LC50	48h	19.4mg/L	Daphnia magna/ water flea
LC50	96h	93 mg/L	Lepomis macrochirus/ bluegill sunfish
LC50	96h	119mg/L	Onchorhynchus mykiss/ rainbow trout
LC50	96h	86mg/L	Pleuronectus platessa/ juvenile plaice
LC50	96h	340mg/L	Farfantepenaeus aztecus/ brown shrimp
LC50	10d	2174mg/Kg	Corophium volutator/ mud shrimp
LD50	311mg/Kg		Anas platyrhynchos/ mallard duck

12.2 Persistence and degradability

Biodegradation: Readily biodegradable >20% in 28d

Photo degradation: no data.

12.3 Bio accumulative potential not expected to bioaccumulate. THPS rapidly degrades to trishydroxymethyl phosphine oxide which is classified as non-toxic.

12.4 Mobility in soil no data available

12.5 Results of PBT and vPvB assessment no data available

12.6 Other adverse effects no further information

SECTION 13: Disposal considerations

Waste treatment methods

Product:

Recommendation: Incineration: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

SECTION 14: Transport information

Land Transport (ADR/RID)

Marine Transport (IMDG)

Air Transport (ICAO/ IATA)

14.1 UN/ID Number: 2810

14.2 UN proper shipping name: Toxic liquid, organic n.o.s [Tetrakis (hydroxymethyl) phosphonium sulfate]

14.3 Transport hazard class: 6.1

14.4 Packaging group: III

14.5 Environmental hazards: marine pollutant

14.6 Special precautions for the user: no further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: 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 COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006

Hazard pictograms Please refer section 2

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Signal word Danger

Labeling according to EU guidelines:

Code letter and hazard designation of product: Please refer section 2

Risk phrases: Please refer section 2

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out and will be applicable at the time of REACH Registration.

Substances of very high concern (SVHC) according to REACH, Article 57 The substance is not listed as SVHC.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS:

Product safety department.

Contact:

Tel: +91-022-27782555

Fax: +91-022-27782430

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

CAS: Chemical Abstracts Service (division of the American Chemical Society)

EINECS/ EC: European Inventory of Existing Commercial Chemical Substances

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

IMDG: International Maritime Code for Dangerous Goods

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

Sources

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/ EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

ECHA: <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/cl-inventory/view-notification-summary/16124>

Dow: http://msdssearch.dow.com/PublishedLiteratureDOWCOM/dh_07e4/0901b803807e48b3.pdf?filepath=product_safety/pdfs/noreg/233-00676.pdf&fromPage=GetDoc

Rhodia: <http://fwap.org/wp-content/uploads/2014/07/THPS-MSDS.pdf>

Special Materials: http://www.flame-retardant.net/thps_tetrakis_hydroxymethyl_phosphonium_sulfate_msds.html

IARC Monographs: <http://monographs.iarc.fr/ENG/Monographs/vol71/mono71-111.pdf>

Data compared to the previous version altered:

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- Section 7: Handling and storage.
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