



SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

SDS Number: M650 **Effective Date:** 1/22/2016 **Supersedes:** 10/06/2015
Product Name: Tetrakis (Hydroxymethyl) Phosphonium Sulfate Solution (THPS, 75%),
Product Code: SMC Spec. 650
Company Identification: Special Materials Company
 70 West 40th Street
 New York, New York 10018
Phone: (646) 366-0400
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CHEMTREC (emergency): 800-424-9300 **Outside USA:** (703) 527-3887

SECTION 2 – HAZARDS IDENTIFICATION

OSHA
EMERGENCY OVERVIEW

Acidic liquid. Contact with the eyes may cause significant irritation or burns. May be harmful if absorbed through the skin, may cause skin sensitization. May be harmful if inhaled. Harmful if swallowed.

POTENTIAL HEALTH EFFECTS

INHALATION: Irritation to upper respiratory tract. May be harmful if inhaled.
SKIN: Allergic skin reaction and sensitization may result from contact. Prolonged skin contact may cause irritation.
EYES: Causes immediate severe irritation of the eye and eyelids. If not quickly removed by thorough irrigation with water, there may be prolonged or permanent visual impairment or total loss of sight.
INGESTION: May be harmful if swallowed. May cause severe irritation to mucous membranes and respiratory tract.

CLP/GHS

Most important hazards:

This mixture is classified as hazardous in accordance with regulation (ec) no 1272/2008. Classification:

Acute toxicity - Category 3; h301
Acute toxicity - Category 3; h331
Serious eye damage/eye irritation - Category 1; h318
Skin sensitization - Category 1; h317
Reproductive toxicity - Category 2; h361d
Acute aquatic hazard - Category 1; h400
Chronic aquatic hazard - Category 1; h410

The preparation is classified as dangerous in accordance with Directive 1999/45/EC. Hazardous classification:

Xn - Harmful
R22 - Harmful if swallowed.
T - Toxic
R23 - Toxic by inhalation.
Xi - Irritant
R41 - Risk of serious damage to eyes.
R43 - May cause sensitization by skin contact.
N - Dangerous for the environment
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Xn - Harmful
 Repr.Cat.3;R63 - Possible risk of harm to the unborn child.

Label elements

Signal word: Danger!
 Hazard statements
 H301 - Toxic if swallowed.
 H331 - Toxic if inhaled.
 H318 - Causes serious eye damage.
 H317 - May cause an allergic skin reaction.
 H361d - Suspected of damaging the unborn child.
 H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P261 - Avoid breathing mist.
 P271 - Use only outdoors or in a well-ventilated area.
 P280 - Wear protective gloves and eye/face protection.
 P301+P310 - IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
 P330 - Rinse mouth.
 P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P311 - Call a POISON CENTRE or doctor/physician.
 P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
 P333+P313 - If skin irritation or rash occurs, seek medical advice/attention.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 - Immediately call a POISON CENTRE or doctor/physician.
 P501 - Dispose of contents/container in accordance with local regulation.

Hazard pictograms:



CARCINOGENICITY

NTP? No

IARC MONOGRAPHS? No

OSHA REGULATED? No

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

CAS#	HAZARDOUS COMPONENTS	% (by weight)	OSHA PEL		ACGIH TWA		SARA TITLE III	RQ LBS
			PPM	MG/M3	PPM	MG/M3		
55566-30-8	Tetrakis(hydroxymethyl)phosphonium sulfate	75 - 77	Not established		0.12	2		
7732-18-5	Water	23 - 25						



SECTION 4 – FIRST AID MEASURES

Inhalation: Remove affected person to fresh air; if breathing has not returned to normal within a few minutes after exposure, get medical attention.

Skin: Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

Eyes: Check for and remove contact lenses. Immediately, flush eyes for 15 minutes in clear running water while holding eyelids open; seek medical attention immediately.

Ingestion: Drink two glasses of water followed by milk, milk of magnesia or other non-alcoholic liquids; Do not induce vomiting; seek medical attention immediately.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point (Method used): 204° F (96° C)
Flammable Limits: LEL: Not Applicable UEL: Not Applicable
Autoignition Temperature: 534° F (279° C) **NFPA CLASS:** III B

General Hazards: Contact with eyes causes immediate severe irritation of the eye and eyelids. Product will support combustion. Products of combustion include smoke, toxic fumes, oxides of carbon to include carbon monoxide, phosphorous oxides, phosphine and sulfur oxides.

Extinguishing Media

Carbon dioxide, water fog, dry chemical, chemical foam.

Fire Fighting Procedure

Self-contained respiratory equipment; cool containers to prevent pressure buildup and possible explosion when exposed to extreme heat. Caution - material will support combustion!

Unusual Fire and Explosion Hazards:

Closed containers can explode due to buildup of pressure when exposed to extreme heat.

Hazardous Combustion Products:

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Product will support combustion. Avoid contact with eyes. Do not wash to sanitary sewer. Large spills - confine spill, soak up with approved absorbent, shovel product into approved container for disposal.



SECTION 7 – HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep container closed when not in use; protect containers from abuse; protect from extreme temperatures, open flames. This material will support combustion. Keep this and other chemicals out of reach of children.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source. Provide mechanical ventilation of confined spaces. Use corrosion-resistant, explosion-proof ventilation equipment.

PERSONAL PROTECTION:

RESPIRATORY PROTECTION (SPECIFY TYPE): None required while threshold limits are kept below maximum allowable concentrations; if TWA exceeds standard workplace limits, NIOSH approved respirator must be worn. Refer to 29 CFR 1910.134 or European Standard EN149 for complete regulations.

PROTECTIVE GLOVES: Neoprene, butyl or nitrile rubber gloves with cuffs.

EYE PROTECTION: Chemical safety goggles. Refer to 29 CFR 1910.133 or European Standard EN166.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls, apron, or other equipment should be worn to prevent skin contact, safety eyewash station nearby.

WORK / HYGIENIC PRACTICES: Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure (MM Hg): 1.7 kPa @ 25° C

Vapor Density (Air = 1) : >1

Specific Gravity (water = 1): 1.37 - 1.40 @ 25°C

Evaporation Rate (water = 1) : <1

Solubility in Water: Complete

Freezing Point: -13°C (-45°F)

pH: 3 to 5

Appearance and Odor: colorless liquid, characteristic odor

Boiling Point: 229°F (109°C)

Physical State: Liquid

Viscosity: 39.0 - 41.0 cPs @ 68 °F (20 °C)

Volatile Organic Compounds (Total VOC's): None



SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: Avoid excessively high temperatures. Unstable at high pH.

Incompatibility (Materials to Avoid): Strong oxidizers, strong alkalies, strong acids and strong reducing agents

Hazardous Decomposition or byproducts: 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, phosphine and sulfur oxides will be produced.

Hazardous Polymerization: Will not occur. **Conditions to Avoid:** None.

SECTION 11 – TOXICOLOGICAL INFORMATION

Hazardous Ingredients	CAS #	EINECS #	LD ₅₀ of Ingredient (Specify Species and Route)	LD ₅₀ of Ingredient (Specify Species)
Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	259-709-0	248 mg / kg Oral – rat	0.59 mg / L / 4H Inhalation – rat

SECTION 12 – ECOLOGICAL INFORMATION

Acute Toxicity	Rainbow Trout 96hr	EC50 - 119 mg/l
Acute Toxicity	Bluegill Fish 96hr	EC50 - 93 mg/l
Acute Toxicity	Daphnia magna 48hr	EC50 - 19.4 mg/l
Acute Toxicity	Algae 72hr	EC50 - 0.16 mg/l

Neither COD nor BOD data are available. Biodegradation measured at >20% within a 28-day period (OECD 302B).

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of in accordance with Local, State, and Federal Regulations. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations for acidic materials. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals.



SECTION 14 – TRANSPORT INFORMATION

Proper Shipping Name: Toxic liquid, organic n.o.s [Tetrakis (hydroxymethyl) phosphonium sulfate]
Marine Pollutants - DOT requirements specific to Marine Pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars or aircraft.

This substance meets the IMDG definition of a Marine Pollutant and must be labeled as such (dead fish & dead tree).

DOT Hazard Class / Pack Group: 6.1 / III **IATA Hazard Class / Pack Group:** 6.1 / III

Reference: 49 CFR 173.153, .203, .241 **IMDG Hazard Class:** 6.1 / III

UN/NA Identification Number: UN 2810 **RID/ADR Dangerous Goods Code:** 6

Label: Toxic **UN TDG Class / Pack Group:** 6.1 / III

Hazard Symbols: T **Hazard Identification Number (HIN):** 60

Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EC, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

SECTION 15 – REGULATORY INFORMATION

TSCA (Toxic Substance Control Act)

All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory).

SARA Title III (Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories.

Immediate health, delayed health

313 Reportable Ingredients:

None

CERCLA (Comprehensive Response Compensation and Liability Act)

None

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains a maximum of 0.09% formaldehyde known to the state of California to cause cancer.

Pennsylvania, the Worker and Community Right-to-Know Act of 1986

This product contains a maximum of 0.09% formaldehyde an Environmental Hazard and Special Hazardous Substance.

CPR (Canadian Controlled Products Regulations)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. WHMIS Classification: D2B, E.

IDL (Canadian Ingredient Disclosure List)

Components of this product identified by CAS number and listed on the Canadian Ingredient Disclosure List are shown in Section 3.



DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List)

Components of this product identified by CAS number are listed on the DSL.

EINECS (European Inventory of Existing Commercial Chemical Substances)

Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

SECTION 16 – OTHER INFORMATION

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience.

HMIS HAZARD RATINGS	Health	3	*= Chronic Health Hazard	2= Moderate
	Flammability	1	0= Insignificant	3= High
	Physical Hazard	0	1= Slight	4= Extreme

Personal Protective Equipment C Safety Glasses, Gloves, Apron

Revision Summary

This SDS has been revised in the following sections: 9

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The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.