












Safety Data Sheet

U.S. 24 hour Emergency Response No. **+1-800-424-9300**



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION											
THPS 75%		IRO SPECIALTY CHEM. USA, INC. 13702 Village Mill Drive. Suite 202. Midlothian, VA 23114-8801 804-245-2256									
Tetrakis (Hydroxymethyl) Phosphonium Sulfate 75%		IRO USA phone: 804-245-2256									
PRODUCT USE: Non EPA Registered Process Chemistry											
Personal Protection Equipment	GHS Pictograph	DOT Symbol(s)	HMIS (See last page for guide to HMIS)								
 Vapor Respirator  Protective Apron	 Gloves  Splash Goggles	 IMO/IMD G/DOT: UN 2810 Toxic liquid, Organic. n.o.s. THPS, Class: 8 PG:II	<table border="1"> <tr><td>HEALTH</td><td>3</td></tr> <tr><td>FLAMMABILITY</td><td>1</td></tr> <tr><td>PHYSICAL HAZARD</td><td>1</td></tr> <tr><td>PERSONAL PROTECTION</td><td>J</td></tr> </table>	HEALTH	3	FLAMMABILITY	1	PHYSICAL HAZARD	1	PERSONAL PROTECTION	J
HEALTH	3										
FLAMMABILITY	1										
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PERSONAL PROTECTION	J										

SECTION 2: HAZARDS IDENTIFICATION		
EMERGENCY OVERVIEW		
GHS CLASSIFICATION Signal Word Warning: DANGER, CORROSIVE    	Hazard Statements H301: Toxic if swallowed H317: May cause an allergic skin reaction H318: Causes serious eye damage H331: Toxic if inhaled H360: May damage fertility or the unborn child H400: Very toxic to aquatic life	Precautionary Statements P102: Keep out of reach of children P202: Do not handle until all safety precautions have been read and understood. P233: Keep container tightly closed. P262: Do not get in eyes, on skin or on clothing P264: Wash thoroughly after handling. P273: Avoid release to environment P281: Use personal protective equipment as required
RESPONSE: See section 4: FIRST AID MEASURES. Also, see below: <ul style="list-style-type: none"> P202: Do not handle until all safety precautions have been read and understood. P270: Do not eat, drink or smoke when using this product. P 280: Wear gloves, eye protection and face protection (as needed to prevent skin and eye contact. Wash hands or liquid-contacted skin thoroughly after handling.) P301+ 312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P310: Immediately call a POISON CENTER or doctor/physician P338: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses. 		
STORAGE: Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed. Use only approved containers.		
DISPOSAL: Dispose of contents/containers to approved disposal site in accordance with local, regional, and/or international regulations.		



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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS		
COMPONENT	CAS No.	WEIGHT %
Tetrakis (Hydroxymethyl) Phosphonium Sulfate	55566-30-8	75% min
Water	7732-18-5	25% max

SECTION 4: FIRST-AID MEASURES

Inhalation: If inhaled, remove to fresh air. Keep warm and at rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Skin contact: In case of contact, immediately flush skin with plenty of water. Seek medical attention.

Eye contact: Remove contact lenses. Rinse immediately with plenty of water, also under the eye lids, for at least 15 minutes. Get immediate medical attention.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Indication of any immediate medical attention and special treatment needed: IF NOT BREATHING, call 911 or and ambulance, then give artificial respiration.

Note to Physician: Show this safety data sheet to the doctor in attendance. Probable mucosal damage may contra-indicate the use of gastric lavage. Maintain adequate ventilation and oxygenation of the patient. No specific antidote. treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIRE-FIGHTING MEASURES

Flammability of the Product: Not available

Auto-Ignition Temperature: 534.0 F (278.9 C)

Flash Points: > 205.0 F (96.1 C) Method Used: Setaflash Closed Cup (Rapid Setaflash)

Flammable Limits: Not applicable.

Fire Hazards in Presence of Various Substances/Products of Combustion: Product will support combustion. Products of combustion include smoke, toxic fumes, oxides of carbon to include carbon monoxide, phosphorous oxides, phosphine and sulfur oxides. If fumes are present wear an OSHA/NIOSH approved full-face respirator with self-contained breathing apparatus (SCBA).

SECTION 6: ACCIDENTAL RELEASE MEASURES

Small Spill: Absorb spill with inert material (e.g. vermiculite, sand or earth) and put the spill in a waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements. Product will support combustion.

Large Spill: Use appropriate containment to avoid runoff release to sewer or waterways. Contain spill and soak up as much material as possible with an absorbent. Put collected material into suitable containers for disposal. Close or cap valves and /or block or plug hole in leaking container and transfer to another container. Remove containers of incompatible material from the release area.

Environmental Precautions: This product is toxic to fish and aquatic organisms. Do not discharge into effluent containing this product into lakes, streams, ponds or estuaries, oceans or other waters unless in accordance with the requirements of a NPDES permit and the permitting authority has been notified in writing prior to discharging. Do not discharge effluent containing this product to sewer sytems without previously notifying the local sewage treatment plant authority. For guidance call your State Water Board Authority or Regional Office of the EPA.



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SECTION 7: HANDLING AND STORAGE

Precautions: Use appropriate personal protective equipment. Handle in a well-ventilated area. Handle in a manner consistent with good industrial/manufacturing techniques and practices. Wash hands thoroughly with soap and water after use. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.

Storage: DO NOT use a container made of carbon steel for storage. Keep cool. Store away from incompatible substances. Keep out of reach of children. Keep tightly closed. Store away from acids. Store away from strong bases. Store in cool/well-ventilated place. Keep container tightly closed.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION EQUIPMENT (PPE)

Environmental Exposure Controls: Ventilation should be provided to control worker exposures and prevent health risks and as necessary to reduce, prevent and control dust, mist, vapor or aerosol generation. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protection: Splash goggles and face shield. Lab coat. Be sure to use an approved/certified respirator or equivalent (as below). Gloves.

Respiratory Equipment (Specify Type): Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance:	Clear, colorless to pale yellow liquid
Odor:	Slight Formaldehyde odor.
pH	~ 4.5
Relative Density:	1.35-1.42 (Water = 1)
Iron:	≤20 ppm
Auto-ignition Pt:	534.0 °F (278.9 °C)

NOTE: the physical data above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Irritating or toxic gasses or fumes may release during a fire. Strong acids, Strong bases, Strong oxidizing agents. Strong oxidizing agents.

Stability: The product is stable under normal ambient conditions. Avoid excessive heat.

Incompatibility with various substances: Reactive with strong oxidizing materials and strong alkali

Special Remarks on Reactivity: Will not occur unless exposure to excessive heat, strong oxidizing materials and strong alkali. Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine. Toxic gases/vapors/fume of: Carbon monoxide (CO). Carbon dioxide (CO₂) hydrogen gas. Formaldehyde.



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SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appears in this section when such data is available.

CAS # Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
55566-30-8 Tetrakis(Hydroxymethyl)phosphonium Sulfate	n.a.	n.a.	n.a.	n.a.

Routes of Entry: Eye contact. Inhalation. Ingestion.

Mutagenicity: Mutation test: Morphological transformation. Mouse, 5000. PPM, Cell Type: Embryo.

Result: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Mydriasis (pupillary dilation).

Behavioral: Convulsions or effect on seizure threshold.

Gastrointestinal: Nausea or vomiting.

- *Journal of Toxicology and Environmental Health., Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005, Vol/p/yr: 6,259, 1980*

Mutagenicity: Mutation test: Mutation in mammalian somatic cells. Mouse, 6.000 MG/L, Cell Type: lymphocyte.

Result: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Mydriasis (pupillary dilation).

Behavioral: Muscle contraction or spasticity.

Gastrointestinal: Changes in structure or function of salivary glands.

- *National Toxicology Program Technical Report Series., Vol/p/yr: NTP-TR-296, 1987*

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

General: Toxic to aquatic life.

Ecotoxicity: May cause long-term adverse effects in the aquatic environment. All work practices must be aimed at eliminating environmental contamination.

LC50, Bluegill (*Lepomis macrochirus*): 97.00 PPM, 96 H, Mortality.

Result: Morphological changes.

- *Pesticide Ecotoxicity Database (Formerly: EEDB), Office of Pesticide Programs, 2000*

LC50, Rainbow Trout (*Oncorhynchus mykiss*): 94.00 PPM, 96 H, Mortality.

Result: Morphological changes.

- *Pesticide Ecotoxicity Database (Formerly: EEDB), Office of Pesticide Programs, 2000*

Effective conc. to 50% of test organisms: Water Flea (*Daphnia magna*), 15.00 PPM, 48 H, Intoxication.

Result: Morphological changes.

- *Pesticide Ecotoxicity Database (Formerly: EEDB), Office of Pesticide Programs, 2000*



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SECTION 13: DISPOSAL

Environmental precautions: CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Waste Disposal: Review federal, state and local government requirements prior to disposal. Product would be considered a RCRA Characteristic Hazardous Waste as it meets the definition /characteristic of corrosivity (designated as D002).

SECTION 14: TRANSPORT INFORMATION

GHS Classification:

- Acute Toxicity: Inhalation, Category 3 - Danger! Toxic if inhaled
- Acute Toxicity: Oral, Category 4 - Warning! Harmful if swallowed
- Serious Eye Damage/Eye Irritation, Category 1 - Danger! Causes serious eye damage
- Toxic to Reproduction, Category 1B - Danger! May damage fertility or the unborn child
- Aquatic Toxicity (Acute), Category 1 - Warning! Very toxic to aquatic life

US DOT:

Also: Classification for SEA transport (IMO-IMDG):

Also: Classification for AIR transport (IATA/ICAO):

UN No.: UN 2810

Proper Shipping Name: Toxic liquids, organic, n.o.s. (Tetrakis(hydroxymethyl)phosphonium sulfate)

Hazard Class: 6.1

Packing Group : III

Emergency Response Guide: 153



Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations.

SECTION 15: REGULATORY INFORMATION

The following statutes, regulations and standards have the related prescribes on chemicals in terms of safe use, storage, transportation, loading and unloading, classification and symbol S, etc.

- Provisions on the Environmental Administration of New Chemical Substances.
- The Regulation on Chemicals Safe Use at Working Site
- Law on Prevention and Control of Environmental Pollution Caused by Solid Waste.
- Occupational Exposure Limits for Hazardous Agent in The workshop Chemical Hazardous Agents (GBZ 2.1).

China. Inventory of Existing Chemical Substances in China (IECSC):

All intentional components are listed on the inventory, are exempt, or are supplier certified

U.S. Federal and State Regulations: TSCA 8(b) inventory: Tetrakis (Hydroxymethyl) Phosphonium Sulfate

WHMIS (Canada): Not controlled under WHMIS (Canada).

OSHA Hazard Communication System (HCS) Classification: "Acute Toxicity". Toxic if swallowed



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SECTION 16: OTHER INFORMATION

Further information: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Information Source and References: This SDS is prepared by IRO Specialty Chem. USA, Inc. from information supplied by internal references within our company

Shandong IRO Water Treatment Co. Ltd., Shandong Province, China: Urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given.

Regulatory requirements: These are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer, specific SDSs; we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version. Contact us at: <http://www.xcigroup.com/>

Date of production of SDS: 12/13/2017:

Author: C Frayne

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM				
HAZARD INDEX		PERSONAL PROTECTION INDEX		
4 = SEVERE HAZARD	An asterisk(*) or other designation corresponds to additional information on a data sheet or separate chronic effects notification	A		
3 = SERIOUS HAZARD		B		
2 = MODERATE HAZARD		C		
1 = SLIGHT HAZARD		D		
0 = MINIMAL HAZARD	Additional Information	E		
PERSONAL PROTECTION EQUIPMENT		F		
A Safety Goggles	n Splash Goggles	o Face Shield & Eye Protection	p Gloves	G
q Boots	r Synthetic Apron	s Full Suit	t Heat Resistant	H
u Vapor Absorber	w Cool & Vapor Absorbent	y Full Face Respirator	z Nylon Head or Mask	I
				J
				K
				X Consult your supervisor or S, O.P. for "SPECIAL" handling directions