

BIO/TEC 036

Material Safety Data Sheet

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name : BIO/TEC 036
Chemical Family : Phosphonium Sulfates
Supplier : SOUTHWEST ENGINEERS
39478 Highway 190 East
Slidell, LA 70461
Telephone : (985) 643-1117
Fax : (985) 641-4509
Emergency Number : (800) 424-9300 - Chemtrec
Hazard Ratings:
Health = 2 2 0 = Least
Fire = 0 0 1 = Slight
Reactivity = 0 0 2 = Moderate
Contact = D 3 = High
4 = Extreme

2. HAZARDOUS COMPONENTS

Product composition contains the following hazardous components reportable under OSHA Regulation 29 CFR 1910.1200:

	Phosphonium,	Ingredient	≈35%	WGT %	55566-30-8	CAS #
	Tetrakis(Hydroxymethyl)-Sulfate					

3. HEALTH INFORMATION

Effects of Overexposure : DANGER! Causes severe eye and skin irritation. May be harmful if swallowed.

Eyes : Expected to cause significant irritation to the eyes.

Symptoms : Redness and possible burning and tearing of the eyes.

Skin : Expected to cause significant irritation to the skin.

Symptoms : Redness and possible burning of the skin.

Ingestion : Expected to cause significant irritation to the digestive tract.

Symptoms : Possible nausea and/or vomiting.

Inhalation : Expected to cause significant irritation to the lungs, upper respiratory tract and nose.

Symptoms : Coughing, burning, tightness of chest and/or shortness of breath.

Acute Toxicity : Not expected to cause significant adverse effects if absorbed through the skin. May cause significant adverse effects if ingested. Not expected to cause significant adverse effects if mist or vapor is inhaled.

Carcinogenicity : NTP - No
IARC - No
OSHA - No

Mutagenicity : This product was tested to be negative in two laboratory test tube studies and positive in another.

Reproductive Toxin : Reproductive effects - Not classified
Teratogenic Effects - Not Classified

3. HEALTH INFORMATION (Continued)

Medical Conditions Aggravated	:	Skin, respiratory & liver diseases may be aggravated by exposure.
Target Organ Statement	:	May cause gastrointestinal tract, liver and respiratory tract effects based on animal data.
Sensitization	:	This material may cause sensitization of the skin.

4. FIRST AID MEASURES

Emergency First Aid Procedures		
Eye Contact	:	Immediately flush eyes with plenty of water for two or three minutes. Remove any contact lenses and continue flushing for 15 minutes. Get medical attention.
Skin Contact	:	Remove contaminated clothing including shoes and immediately wash affected area with plenty of soap and water. Seek immediate medical attention. Wash contaminated clothing and shoes before reuse.
Inhalation	:	Remove from further exposure. Keep warm and at rest. If cough or other symptoms develop, seek medical attention.
Ingestion	:	Wash out mouth with water, keep at rest. Seek immediate medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

5. FIRE AND EXPLOSION

Flash Point (and Method)	:	Not available
General Hazard	:	Evacuate personnel downwind of fire to avoid inhalation of irritating and/or harmful fumes and smoke.
Recommended Extinguishing Media	:	Wet sand, chemical-type foam, dry chemical and/or water spray.
Special Fire Fighting Procedures	:	For small containers or organic substances, it should be considered if there will be less damage by allowing the material to burn to exhaustion rather than fighting the fire and risk causing environmental contamination and other problems.
Unusual Fire/Explosion Hazards	:	Hazardous combustion products are oxides of carbon, phosphorus and sulfur
Fire Fighting Equipment	:	Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (Bunker Gear) and self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of a SCBA may not be required.

6. SPILL OR LEAKAGE PROCEDURES

Procedures if Material is Spilled or Released	:	Small Spill: Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material. Wearing the appropriate personal protective equipment designated in Section 8, move the leaking container to a containment area or rotate the container so that the opening is above the liquid level. Absorb on diatomaceous earth or equivalent
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6. SPILL OR LEAKAGE PROCEDURES (Continued)

Environmental Precautions

inert material. Shovel up and dispose of at an appropriate waste disposal facility according to current applicable laws and regulations, and product characteristics at time of disposal.

Large Spill: Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material. Wearing the appropriate personal protective equipment designated in Section 8, close or cap valves and/or block or plug hole in leaking container and transfer to another container. Contain material as described above and call the local fire or police department for immediate emergency assistance.

Water Spill: Use appropriate containment to avoid runoff or release to sewer or waterways.

Land Spill: Use appropriate containment to avoid runoff or release to ground.

General Procedures

Remove containers of strong oxidizers and strong bases from release area.

Release Notes

If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER tollfree number, 800-424-8802.

In case of accident or road spill, notify Chemtrec in USA at 800-424-9300.

Comments

See Section 13 for disposal information and Section 15 for regulatory requirements. Large and small spills may have a broad definition depending on the user's handling system. Therefore, the spill category must be defined at the point of release by technically qualified personnel.

7. HANDLING & STORAGE

Precautions to be Taken in Handling and Storage

Use appropriate personal protective equipment as specified in Section 8. Handle in a well-ventilated area. Handle and use in a manner consistent with good industrial/manufacturing techniques and practices.

Store in unopened containers under cool and dry conditions. Do not store with, or close to, oxidizers. Do not store with, or close to, strong bases.

8. SPECIAL PROTECTION INFORMATION

Exposure Guidelines

Phosphonium,tetrakis(Hydroxymethyl)-,sulfate
OSHA Hazardous Components (29 CFR 1910.1200)

	EXPOSURE LIMITS					
	OSHA PEL		ACGIH TLV		Supplier OEL	
	ppm	mg/m3	ppm	mg/m3	ppm	mg/m3
TWA	NL ⁽¹⁾	NL	NL	NL	NL	NL
STEL	NL	NL	NL	NL	NL	NL

(1) NL = Not Listed

Engineering Controls

Adequate ventilation is normally required when handling or using this material. If vapors, or mists, are generated, provide local exhaust ventilation to control airborne levels below the exposure limit.

8. SPECIAL PROTECTION INFORMATION (Continued)

Personal Protective Equipment		
Eyes & Face	:	Wear safety glasses with side shields or goggles when handling this material.
Skin	:	To prevent any contact, wear impervious protective clothing such as neoprene or butyl rubber gloves, apron, boots or whole bodysuit, as appropriate.
Respiratory	:	Always wear NIOSH approved respiratory protective equipment when vapor or mists may exceed applicable concentration limits.
Work/Hygienic Practices	:	Facilities storing or using this material should be equipped with an eyewash facility and a safety shower. Good personal hygiene practices should always be followed.
Comments	:	OSHA-PEL's are taken from the 1989 exposure listing.

9. PHYSICAL DATA

Boiling Point (760 mm Hg)	:	Not Available
Melting Point	:	Not Available
pH	:	3.24
Vapor Pressure at 20°C (mm of Hg)	:	Not Available
Vapor Density (Air = 1)	:	Not Available
Water Solubility	:	Miscible
Appearance and Odor	:	Clear, colorless liquid with a pungent odor
Density	:	1.164 g/cc at 20°C (68°F)
Specific Gravity	:	1.164 @ 15°C/4°C
Viscosity	:	21.2 Centistokes at 25°C (77°F)
Molecular Weight	:	403.6 g/gmol

10. STABILITY & REACTIVITY DATA

Stability	:	Stable (under normal ambient conditions of temperature and pressure)
Conditions to Avoid	:	Heat, temperatures above 160°C
Incompatibility with Other Materials	:	Strong Oxidizers, Strong bases
Hazardous Decomposition Products	:	Phosphine, oxides of phosphorus, sulfur
Hazardous Polymerization	:	Will not occur

11. TOXICOLOGICAL INFORMATION

Toxicity – Acute	:	Dermal LD ₅₀ : Rabbit >2000 mg/kg Oral LD ₅₀ : Rat 575 mg/kg Inhalation LC ₅₀ : Rate >22 mg/l for one hour (calculated)
Eye Effects	:	This material is expected to cause significant irritation to the eyes.
Skin Effects	:	This material is expected to cause significant irritation to the skin.
Sensitization	:	This material is a Grade 1 – Weak Skin Sensitizer
Target Organs	:	Eyes, Skin, Gastrointestinal tract, Respiratory system, Liver
Carcinogenicity	:	Listed by: IARC – No NTP – No OSHA – No

11. TOXICOLOGICAL INFORMATION (Continued)

Mutagenicity	:	Negative in the Ames Test Clastogenic in an invitro assay for chromosomal aberrations in Chinese Hamster Ovary cells. Negative in cultured rat hepatocytes unscheduled DNA synthesis.
Reproductive Effects	:	This material is not a reproductive toxin, at low dose levels of 6 or 18 mg/kg/day for rabbits and 15 or 30 mg/kg/day for rats. At a high dose level of 60 mg/kg/day, both species showed maternal toxicity.
Teratogenic Effects	:	This material is not a teratogen, at low dose levels of 6 or 18 mg/kg/day for rabbits and 15 or 30 mg/kg/day for rats. At a high dose level of 60 mg/kg/day, both species showed fetal toxicity.

12. ECOLOGICAL INFORMATION

Environmental Data	:	Not expected to cause significant adverse environmental impact if material reaches waterways.
Ecotoxicological Information	:	96 hr LC ₅₀ : Trout 119 mg/L Bluegill 93 mg/L Daphnia magna 19.4 mg/L
Distribution	:	Not Available
Chemical Fate Information	:	The material is readily biodegradable.
General Comments	:	THPS has been shown to degrade rapidly once diluted to sub ppm concentrations forming trishydroxymethyl phosphine oxide which is classified as non-toxic.

13. DISPOSAL CONSIDERATIONS

Disposal Method	:	Dispose of waste at an appropriate waste disposal facility according to current applicable laws and regulations.
Large Spills	:	Contain material and call local authorities for emergency assistance. In consultation with the appropriate authorities, determine the disposal method or contact Southwest Engineers.
Product Disposal	:	Dispose of at a supervised incineration facility or an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal.
Empty Containers	:	Rinse drums with a suitable solvent and steam to remove vapors before disposal or reuse in accordance with applicable regulations.
General Comments	:	Refer to Section 6, Accidental Release Measures for additional information.

14. TRANSPORT INFORMATION

D.O.T. (Department of Transportation)		
Proper Shipping Name	:	Not restricted by D.O.T.
Technical Name	:	Tetrakis(hydroxymethyl) Phosphonium Sulphate Solution
Label	:	Use Product Identifier, "Trade Name," with technical name below.
Canada Transport of Dangerous Goods		
Proper Shipping Name	:	Not restricted

14. TRANSPORT INFORMATION (Continued)

Label	:	Use Product Identifier, "Trade Name," with technical name below.
Air (ICAO/IATA)		
Proper Shipping Name	:	Not restricted
Label	:	Use Product Identifier, "Trade Name," with technical name below.
Vessel (IMO/IMDG)		
Proper Shipping Name	:	Not restricted
Label	:	Use Product Identifier, "Trade Name," with technical name below.
European Transportation		
ADR/RID Hazard Classification	:	Not regulated
U.S. Customs Harmonization #	:	2931.00.90.30

15. REGULATORY INFORMATION

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (Rqs) in 40 CFR 302.4.

Components present in this product at a level which could require reporting under the statute are:

RQ Not applicable

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (Rqs) in 40 CFR 355

311 and 312 Hazard Categories:

Fire: No	Pressure Generating: No	Reactivity: No	Acute: Yes
Chronic: No			

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS's that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

RQ Not applicable

Toxic Substances Control Act (TSCA) STATUS: All the ingredients of this product are on the TSCA inventory.

National Response Center: U.S. Coast Guard National Center telephone # 1-800-424-8802

16. OTHER INFORMATION

The information herein is presented in good faith and believed to be correct as of the date hereof. However, Southwest Engineers makes no representation as to the completeness and accuracy thereof. Users must make their own determination as to the suitability of the product for their purposes prior to use.

No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature with respect to the product or to the information herein is made. Southwest Engineers shall in no event be responsible for any damages of whatsoever nature directly or indirectly resulting from the publication or use or reliance upon information contained herein.

FOR FURTHER INFORMATION CONTACT:

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