

## 1 - Product and Company Information

ProductName **TETRAKIS(2-HYDROXYETHYL) ORTHOSILICATE, SOLUTION IN ETHYLENE GLYCOL**

## 2 - Hazards Identification

### SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Harmful if swallowed. Irritating to eyes, respiratory system and skin. Possible risk of impaired fertility. Possible risk of harm to the unborn child.

## 3 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I
<b>TETRAKIS(2-HYDROXYETHYL) ORTHOSILICATE,SOLUTION IN ETHYLENE GLYCOL</b>	17622-94-5	241-598-5	None

Formula	Si(OCH <sub>2</sub> CH <sub>2</sub> OH) <sub>4</sub>
Molecular Weight	272.33 AMU
Synonyms	Ethylene glycol silicate * Silicic acid, tetrakis(2-hydroxyethyl) ester (9CI * Sili tren * Tetraglycol silicate * Tetrakis(beta-hydroxyethyl) silicate * Tetrakis(2-hydroxyethyl) silicate

## 4 - First Aid Measures

### AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

## 5 - Fire Fighting Measures

### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## 6 - Accidental Release Measures

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

## 7 - Handling and Storage

### HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed. Store in a cool dry place.

## 8 - Exposure Controls / Personal Protection

### ENGINEERING CONTROLS

Mechanical exhaust required. Safety shower and eye bath.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT

Special Protective Measures: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

## 9 - Physical and Chemical Properties

pH	N/A	
BP/BP Range	200 °C	760 mmHg
MP/MP Range	N/A	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	1.196 g/cm <sup>3</sup>	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

## 10 - Stability and Reactivity

### STABILITY

Stable: Stable.

Conditions of Instability: Moisture.

Conditions to Avoid: Heat. Moisture.

Materials to Avoid: Strong acids, Strong oxidizing agents, Strong bases.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Silicon oxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

## 11 - Toxicological Information

### RTECS NUMBER: KW5800000

### SIGNS AND SYMPTOMS OF EXPOSURE

When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage. Nausea, headache, and vomiting. Exposure can cause:

### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Inhalation: May be harmful if inhaled.

Ingestion: Harmful if swallowed.

Multiple Routes: Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract.

### TARGET ORGAN INFORMATION

Liver. Cardiovascular system. Eyes. Kidneys. Central nervous system.

### CONDITIONS AGGRAVATED BY EXPOSURE

Ethylene glycol is metabolized to glycolaldehyde, glycolic acid, and oxalic acid. It has been shown that ethylene glycol is much less toxic than its metabolites. Glycolic acid is thought to be the major toxic metabolite causing acute as well as reproductive and developmental toxicity observed with ethylene glycol exposures. May cause nervous system disturbances.

### CHRONIC EXPOSURE - TERATOGEN

Result: Possible risk of congenital malformation in the fetus.

### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

## 12 - Ecological Information

### No data available.

## 13 - Disposal Considerations

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

## 14 - Transport Information

### RID/ADR

Non-hazardous for road transport.

### IMDG

Non-hazardous for sea transport.

### IATA

Non-hazardous for air transport.

## 15 - Regulatory Information

### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

Harmful.

R-Phrase: 22,36/37/38-62-63

Harmful if swallowed. Irritating to eyes, respiratory system and skin. Possible risk of impaired fertility. Possible risk of harm to the unborn child.

S-Phrase: 53-20-36/37/39-45

Avoid exposure - obtain special instructions before use. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## 16 - Other Information

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### WARRANTY:

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