

# TETRAETHYL SILICATE

0333

March 1998

CAS No: 78-10-4  
 RTECS No: VV9450000  
 UN No: 1292  
 EC No: 014-005-00-0

Tetraethoxysilane  
 Ethyl silicate  
 Tetraethyl orthosilicate  
 $(C_2H_5O)_4Si$   
 Molecular mass: 208.3

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Flammable.	NO open flames, NO sparks, and NO smoking.	Water spray, foam, alcohol-resistant foam.
<b>EXPLOSION</b>	Above 37/C explosive vapour/air mixtures may be formed.	Above 37/C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.

EXPOSURE			
<b>Inhalation</b>	Cough. Dizziness. Headache. Sore throat.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
<b>Skin</b>	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
<b>Eyes</b>	Redness. Pain.	Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
<b>Ingestion</b>	Confusion. Vomiting. (Further see Inhalation).		Rinse mouth.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Remove all ignition sources. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Note: Reacts with water to form an adhesive mass.	<b>EU classification</b> Xn Symbol R: 10-20-36/37 S: 2 <b>UN classification</b> UN Hazard Class: 3 UN Pack Group: III

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-30GF1-III NFPA Code: H2; F2; R2	Fireproof. Separated from acids, oxidants. Cool. Dry. Keep in a well-ventilated room.

### IMPORTANT DATA

**Physical State; Appearance**

COLOURLESS LIQUID, WITH CHARACTERISTIC ODOUR.

**Chemical dangers**

Reacts with acids, water and oxidants.

**Occupational exposure limits**

TLV: 10 ppm as TWA; (ACGIH 2004).

MAK: 10 ppm, 86 mg/m<sup>3</sup>; Peak limitation category: I(1); Pregnancy risk group: D; (DFG 2006).

**Routes of exposure**

The substance can be absorbed into the body by inhalation of its vapour and by ingestion.

**Inhalation risk**

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20/C.

**Effects of short-term exposure**

The substance irritates the eyes, the skin and the respiratory tract. Exposure could cause lowering of consciousness.

**Effects of long-term or repeated exposure**

The liquid defats the skin. The substance may have effects on the kidneys.

### PHYSICAL PROPERTIES

Boiling point: 168/C

Melting point: -77/C

Relative density (water = 1): 0.93

Solubility in water: slowly hydrolyzes

Vapour pressure, Pa at 20/C: 200

Relative vapour density (air = 1): 7.22

Relative density of the vapour/air-mixture at 20/C (air = 1): 1.01

Flash point: 37/C c.c.

Explosive limits, vol% in air: 1.3-23

### ENVIRONMENTAL DATA

### NOTES

Card has been partly updated in October 2005. See sections Occupational Exposure Limits, Emergency Response.

Card has been partially updated in July 2007: see Occupational Exposure Limits.

### ADDITIONAL INFORMATION

**LEGAL NOTICE**

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