

# Otto Chemie Pvt Ltd

An ISO 9001 : 2015 & GMP Certified Company  
Office : No 603, 6th Floor, Tardeo AC Market, 87, Tardeo Road,  
Tardeo, Mumbai, Maharashtra 400034, India (BHARAT)  
Tel : + 91 98200 41841 Email : [info@ottokemi.com](mailto:info@ottokemi.com) Web : [www.ottokemi.com](http://www.ottokemi.com)

## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: Product identifiers

Product Name : Tetraethyl orthosilicate, 99.999%  
Product Code : T 1413  
CAS No: 78-10-4

1.2. Relevant identified uses of the substance or mixture and uses advised against  
Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet

Company identification  
OTTO CHEMIE PVT LTD  
No 603, 6th Floor, Tardeo AC Market, 87, Tardeo Road,  
Tardeo, Mumbai, Maharashtra 400034, India (BHARAT)

1.4. Emergency telephone number

Phone no. : + 91 98200 41841 (10 : 00 am – 06 : 00 pm)

### SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 3), H226

Acute toxicity, Inhalation (Category 4), H332

Eye irritation (Category 2), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word

Warning

Hazard statement(s)

H226

Flammable liquid and vapor.

H319

Causes serious eye irritation.

H332

Harmful if inhaled.

H335

May cause respiratory irritation.

Precautionary statement(s)

P210

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233

Keep container tightly closed.

P240

Ground and bond container and receiving equipment.

P241

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P304 + P340 + P312

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard

Statements

none

Reduced Labeling (<= 125 ml)

Pictogram

Signal Word

Warning

Hazard statement(s)

none

Precautionary

statement(s)

none

Supplemental Hazard

Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at

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levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : Tetraethoxysilane  
Orthosilicic acid tetraethyl ester  
Formula : C<sub>8</sub>H<sub>20</sub>O<sub>4</sub>Si  
Molecular weight : 208,33 g/mol  
CAS-No. : 78-10-4  
EC-No. : 201-083-8

Component	Classification	Concentration
tetraethyl silicate		
CAS-No. 78-10-4 EC-No. 201-083-8	Flam. Liq. 3; Acute Tox. 4; Eye Irrit. 2; STOT SE 3;	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

silicon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

### 5.4 Further information

Under fire conditions, material may decompose to form flammable and/or explosive mixtures in air. Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures  
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.  
For personal protection see section 8.  
6.2 Environmental precautions  
Do not let product enter drains. Risk of explosion.  
6.3 Methods and materials for containment and cleaning up  
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb® ). Dispose of properly. Clean up affected area.  
6.4 Reference to other sections  
For disposal see section 13.

## SECTION 7: Handling and storage

7.1 Precautions for safe handling  
Advice on safe handling  
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Advice on protection against fire and explosion  
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.  
Hygiene measures  
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.  
For precautions see section 2.2.  
7.2 Conditions for safe storage, including any incompatibilities  
Storage conditions  
Store under nitrogen.  
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.  
Moisture sensitive.  
Storage class  
Storage class (TRGS 510): 3: Flammable liquids  
7.3 Specific end use(s)  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

8.1 Control parameters  
Ingredients with workplace control parameters  
Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, acute	dermal	Systemic effects	
Worker DNEL, longterm	dermal	Systemic effects	
Worker DNEL, acute	inhalation	Systemic effects	85 mg/m3
Worker DNEL, acute	inhalation	Local effects	85 mg/m3
Worker DNEL, longterm	inhalation	Systemic effects	85 mg/m3
Worker DNEL, longterm	inhalation	Local effects	85 mg/m3
Consumer DNEL, acute	dermal	Systemic effects	
Consumer DNEL, longterm	dermal	Systemic effects	
Consumer DNEL, acute	inhalation	Systemic effects	25 mg/m3
Consumer DNEL, acute	inhalation	Local effects	25 mg/m3
Consumer DNEL, longterm	inhalation	Systemic effects	25 mg/m3
Consumer DNEL, longterm	inhalation	Local effects	25 mg/m3

## Predicted No Effect Concentration (PNEC)

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Compartment	Value
Fresh water	0,192 mg/l
Sea water	0,0192 mg/l
Fresh water sediment	0,83 mg/kg
Sea sediment	0,083 mg/kg
Soil	0,05 mg/kg
Sewage treatment plant	4000 mg/l
Aquatic intermittent release	10 mg/l

## 8.2 Exposure controls

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,4 mm

Break through time: 480 min

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### Splash contact

Material: Chloroprene

Minimum layer thickness: 0,65 mm

Break through time: 240 min

Material tested: KCL 720 Camapren®

#### Body Protection

Flame retardant antistatic protective clothing.

#### Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

#### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |  |  |
|--|--|
| a) Physical state                          | liquid                                   |
| b) Color                                   | colorless                                |
| c) Odor                                    | No data available                        |
| d) Melting point/freezing point            | Melting point: -82,5 °C at ca. 1.013 hPa |
| e) Initial boiling point and boiling range | 168 °C - lit.                            |
| f) Flammability (solid, gas)               | No data available                        |
| g) Upper/lower                             | Upper explosion limit: 23 %(V)           |

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flammability or explosive limits	Lower explosion limit: 1,3 %(V)
h) Flash point	45 °C - closed cup - DIN 51755 Part 1
i) Autoignition	222 °C at 960,8 hPa
temperature	
j) Decomposition temperature	No data available
k) pH	No data available
l) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 0,6 mPa.s at 20 °C 1,49 g/l at 23 °C at 7 hPa - soluble log Pow: 3,18 at 40 °C - Bioaccumulation is not expected.
m) Water solubility	
n) Partition coefficient: n-octanol/water	
o) Vapor pressure	< 1 hPa at 20 °C
p) Density	0,933 g/cm <sup>3</sup> at 20 °C - lit.
Relative density	No data available
q) Relative vapor density	No data available
r) Particle characteristics	No data available
s) Explosive properties	No data available
t) Oxidizing properties	none
9.2 Other safety information	
Relative vapor density	
7,19 - (Air = 1.0)	

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

May decompose on exposure to moist air or water.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heating.

### 10.5 Incompatible materials

rubber, various plastics

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Toxicity to Animals:

Oral LD50 Rat: 1500 mg/kg; Dermal LD50 Rabbit: 2000mg/kg

Inhalation LC50 Rat: > 50mg/L.

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified None. by NTP, None. by OSHA, None. by NIOSH.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of inhalation (lung irritant).

Special Remarks on Toxicity

to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

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## SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

: FLAMMABLE LIQUIDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

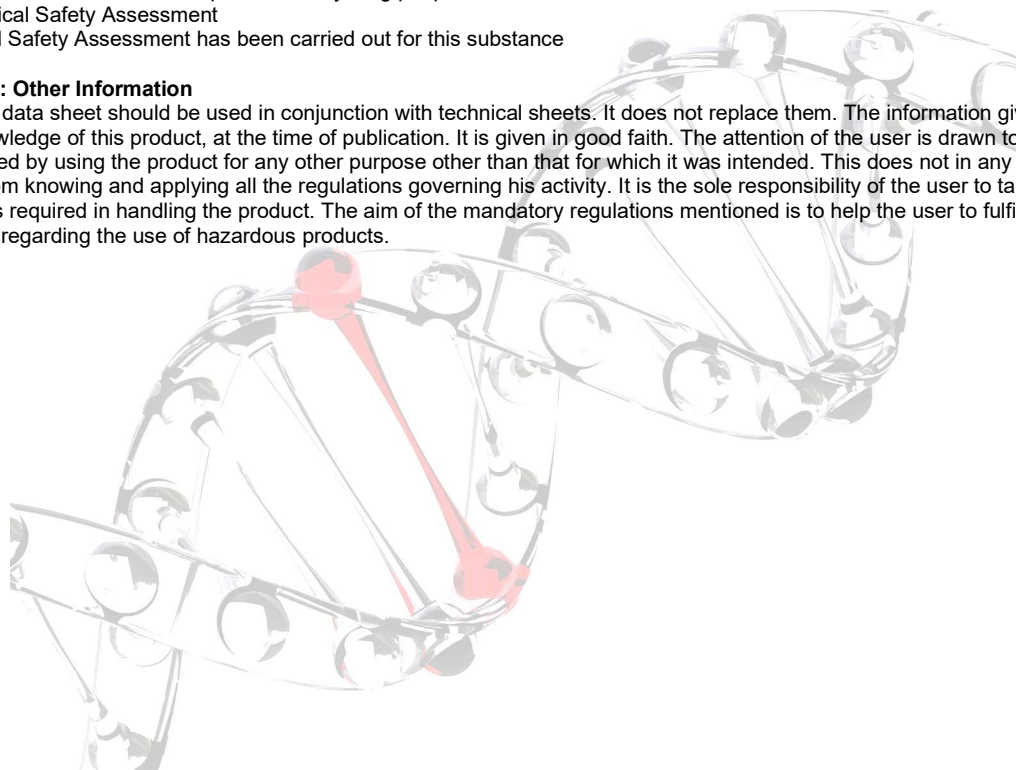
Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance

## Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.



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