

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/30/2005

Reviewed on 05/25/2005

1 Identification of substance:

· **Product details:**

· **Trade name:** Xantopren function hardener 1

· **Application of the substance / the preparation** Activator for dental impression material

· **Manufacturer/Supplier:**

Heraeus Kulzer GmbH
Grüner Weg 11, D-63450 Hanau

Tel.: 0800 4372522

· **Information department:**

Dr. Barbara Bräu
Tel.: +49 2133 51-8521 / Fax: +49 2133 51-5016
e-mail: barbara.braeu@heraeus.com

· **Emergency information:** Call +49 30 19240 (24 hours).

2 Composition/Data on components:

· **Chemical characterization**

· **Description:** Activator for use with condensation curing silicone-based impression materials

· **Dangerous components:**

78-10-4	tetraethyl orthosilicate	Xn; R 10-20-36/37	25-50%
77-58-7	dibutyltin dilaurate	Xn; R 20/21/22-36/38-52/53	25-50%

· **Additional information** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

· **Hazard description:**



Xn Harmful

· **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 10 Flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Classification system**

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

· **NFPA ratings for USA (scale 0-4)**



Health = 0

Fire = 3

Reactivity = 0

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· **HMIS-Ratings (Scale 0-4)**

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1	Health = 1
3	Fire = 3
REACTIVITY 0	Reactivity = 0

4 First aid measures

- **General information**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing** Immediately call a doctor.

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents**
Water.
Water with full jet.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
- **Protective equipment:** Mount respiratory protective device.

6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
Inform respective authorities in case of seepage into water course or sewage system.
- **Measures for cleaning/collecting:**
Absorb with liquid binding material (diatomite, universal binders, for small amounts tissues).
Dispose contaminated material as waste according to item 13.
Do not flush with water or aqueous cleansing agents
- **Additional information:** No dangerous substances are released.

7 Handling and storage

- **Handling**
 - **Information for safe handling:**
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
 - **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Storage**
 - **Requirements to be met by storerooms and receptacles:** No special requirements.

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- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

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8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

78-10-4 tetraethyl orthosilicate

PEL ()	850 mg/m ³ , 100 ppm
REL ()	85 mg/m ³ , 10 ppm
TLV ()	85 mg/m ³ , 10 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Personal protective equipment**

- **General protective and hygienic measures**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

- **Breathing equipment:**

Not necessary with efficient local exhaust. If exposition to vapours is possible, use breathing protective mask (filter A).

- **Protection of hands:**

Solvent resistant gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Butyl rubber, BR
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
Natural rubber, NR
Chloroprene rubber, CR

- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

PVC or PE gloves

- **Eye protection:** Protective goggles are recommended.

- **Body protection:** Light weight protective clothing

9 Physical and chemical properties:

- **General Information**

- **Form:** Fluid

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· Color:	Light red
· Odor:	Aromatic
· Change in condition	
· Melting point/Melting range:	undetermined
· Boiling point/Boiling range:	>160°C (>320°F)
· Flash point:	36°C (97°F)
· Ignition temperature:	234°C
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
· Lower:	1.3 Vol %
· Upper:	23.0 Vol %
· Vapor pressure at 20°C (68°F):	1.7 hPa (1 mm Hg)
· Density at 20°C (68°F):	1.000 g/cm ³
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix
· Solvent content:	
· Organic solvents:	0.0 %

10 Stability and reactivity

- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** none

11 Toxicological information

- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
Oral	LD50	3202 mg/kg (rat)

78-10-4 tetraethyl orthosilicate		
Oral	LD50	6270 mg/kg (rat)
Dermal	LD50	5878 mg/kg (can)
77-58-7 dibutyltin dilaurate		
Oral	LD50	175 mg/kg (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

Harmful
Irritant

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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12 Ecological information:

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water.
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

13 Disposal considerations

· **Product:**

· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **DOT regulations:**



- **Hazard class:** 3
- **Identification number:** UN1292
- **Packing group:** III
- **Proper shipping name (technical name):** TETRAETHYL SILICATE, solution
- **Label:** 3

· **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 3 (F1) Flammable liquids
- **Danger code (Kemler):** 30
- **UN-Number:** 1292
- **Packaging group:** III
- **Label:** 3
- **Description of goods:** 1292 TETRAETHYL SILICATE, solution

· **Maritime transport IMDG:**



- **IMDG Class:** 3
- **UN Number:** 1292
- **Label:** 3
- **Packaging group:** III
- **EMS Number:** F-E, S-D
- **Marine pollutant:** No

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· Propper shipping name:	TETRAETHYL SILICATE, solution
· Air transport ICAO-TI and IATA-DGR:	
	
· ICAO/IATA Class:	3
· UN/ID Number:	1292
· Label	3
· Packaging group:	III
· Propper shipping name:	TETRAETHYL SILICATE, solution

15 Regulations

· SARA Section 355 (extremely hazardous substances)	None of the ingredients is listed.
· SARA Section 313 (specific toxic chemical listings)	None of the ingredients is listed.
· TSCA (Toxic Substances Control Act)	All ingredients are listed.
· Prop 65 - Chemicals known to cause cancer	None of the ingredients is listed.
· Prop 65 - Chemicals known to cause reproductive toxicity	None of the ingredients is listed.
· Cancerogeny categories	
· EPA (Environmental Protection Agency)	None of the ingredients is listed.
· IARC (International Agency for Research on Cancer)	None of the ingredients is listed.
· NTP (National Toxicology Program)	None of the ingredients is listed.
· TLV (Threshold Limit Value established by ACGIH)	77-58-7 dibutyltin dilaurate A4
· NIOSH-Ca (National Institute for Occupational Safety and Health)	None of the ingredients is listed.
· OSHA-Ca (Occupational Safety & Health Administration)	None of the ingredients is listed.
· Markings according to EU guidelines:	The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials
· Code letter and hazard designation of product:	Xn Harmful
· Hazard-determining components of labelling:	tetraethyl orthosilicate dibutyltin dilaurate

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· **Risk phrases:**

- 10 Flammable.
- 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Safety phrases:**

- 9 Keep container in a well-ventilated place.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- 43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
- 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

· **National regulations**

- **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

16 Other information:

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

- 10 Flammable.
- 20 Harmful by inhalation.
- 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- 36/37 Irritating to eyes and respiratory system.
- 36/38 Irritating to eyes and skin.
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Department issuing MSDS:** Safety department

· **Contact:** Dr. Tuchscherer Tel.: +49 6081 959-287

· * **Data compared to the previous version altered.**

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