

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**VITAFOL H Hardener**

Revision date:

Product code: 059

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**1. Identification****Product identifier**

VITAFOL H Hardener

**Recommended use of the chemical and restrictions on use****Use of the substance/mixture**

Use as laboratory reagent

**Details of the supplier of the safety data sheet**

Company name:	VITA Zahnfabrik H.Rauter GmbH & Co.KG	
Street:	Spitalgasse 3	
Place:	D-79713 Bad Säckingen	
Post-office box:	1338	
	D-79704 Bad Säckingen	
Telephone:	+49(0)7761-562-0	Telefax: +49(0)7761-562-299
e-mail:	info@vita-zahnfabrik.com	
Contact person:	regulatory affairs	
e-mail:	info@vita-zahnfabrik.com	
Internet:	www.vita-zahnfabrik.com	
Responsible Department:	Regulatory Affairs	
<b>Emergency phone number:</b>	+49-(0)761-19240	

**2. Hazard(s) identification****Classification of the chemical****29 CFR Part 1910.1200**

Flammable liquids: Flam. Liq. 3  
 Acute toxicity: Acute Tox. 4 (inhalation)  
 Serious eye damage/eye irritation: Eye Irrit. 2A  
 Specific target organ toxicity single exposure: STOT SE 3 (respiratory tract irritation)  
 Specific target organ toxicity repeated or prolonged exposure: STOT RE 2

**Label elements****29 CFR Part 1910.1200****Signal word:** Warning**Pictograms:****Hazard statements**

Flammable liquid and vapor  
 Causes serious eye irritation  
 Harmful if inhaled  
 May cause respiratory irritation  
 May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 Do not breathe dust/fume/gas/mist/vapors/spray.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
 Continue rinsing.

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If eye irritation persists: Get medical advice/attention.

Store in a well-ventilated place. Keep cool.

**Hazards not otherwise classified**

No information available.

**3. Composition/information on ingredients****Mixtures****Hazardous components**

CAS No	Components	Quantity
78-10-4	ethyl silicate, tetraethyl silicate	84 %
93925-43-0	Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane	12 %
68299-15-0	Bis(neodecanoyloxy)dioctylstannane	2 %

**4. First-aid measures****Description of first aid measures****After inhalation**

Provide fresh air. Medical treatment necessary.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

**After ingestion**

Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Medical treatment necessary.

**Most important symptoms and effects, both acute and delayed**

No information available.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**5. Fire-fighting measures****Extinguishing media****Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder.

**Unsuitable extinguishing media**

Water.

**Specific hazards arising from the chemical**

Flammable. Vapors may form explosive mixtures with air.

**Special protective equipment and precautions for fire-fighters**

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Use water spray/stream to protect personnel and to cool endangered containers. Suppress gases/vapors/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

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**General advice**

Remove all sources of ignition. Do not breathe gas/fume/vapor/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**Environmental precautions**

Do not allow uncontrolled discharge of product into the environment. Danger of explosion

**Methods and material for containment and cleaning up****Other information**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

**Reference to other sections**

Safe handling: see section 7

Personal protection equipment (PPE): see section 8

Disposal: see section 13

**7. Handling and storage****Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fume/vapor/spray.

**Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapors may form explosive mixtures with air.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Hints on joint storage**

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

**8. Exposure controls/personal protection****Control parameters****Exposure limits**

CAS No.	Substance	ppm	mg/m <sup>3</sup>	f/cc	Category	Origin
78-10-4	Ethyl silicate	100	850		TWA (8 h)	PEL
		10	85		TWA (8 h)	REL

**Exposure controls**

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**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fume/vapor/spray.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Suitable eye protection: goggles.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Recommended glove articles KCK Dermatrill P NBR (Nitrile rubber) Breakthrough time: 30 min

**Skin protection**

Wear suitable protective clothing.

**Respiratory protection**

Technical ventilation of workplace Provide adequate ventilation as well as local exhaustion at critical locations.

**9. Physical and chemical properties****Information on basic physical and chemical properties**

Physical state:	Liquid
Color:	light red
Odor:	characteristic

**Changes in the physical state**

Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	166 °C
Flash point:	37 °C

**Flammability**

Solid/liquid:	not applicable
Gas:	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined

**Self-ignition temperature**

Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined

pH-Value:	not determined
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Water solubility:	No
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**Solubility in other solvents**

not determined

Partition coefficient n-octanol/water:	not determined
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Vapor pressure: (at 50 °C)	<=1100 hPa
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Density:	not determined
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Relative vapour density:	not determined
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**Other information****Information with regard to physical hazard classes**Oxidizing properties  
Not oxidising.**Other safety characteristics**Solid content: 0,0 %  
Evaporation rate: not determined**Further Information****10. Stability and reactivity****Reactivity**

Flammable.

**Chemical stability**

The product is stable under storage at normal ambient temperatures.

**Possibility of hazardous reactions**

No known hazardous reactions.

**Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapors may form explosive mixtures with air.

**Incompatible materials**

No information available.

**Hazardous decomposition products**

No known hazardous decomposition products.

**11. Toxicological information****Information on toxicological effects****Acute toxicity**

Harmful if inhaled

**ATEmix calculated**

ATE (inhalation vapour) 13,10 mg/l; ATE (inhalation aerosol) 1,786 mg/l

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
78-10-4	ethyl silicate, tetraethyl silicate				
	dermal	LD50 5860 mg/kg			
	inhalation vapour	ATE 11 mg/l			
	inhalation aerosol	ATE 1.5 mg/l			
93925-43-0	Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane				
	oral	ATE 500 mg/kg			

**Irritation and corrosivity**Causes serious eye irritation  
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

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**Sensitizing effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**Specific target organ toxicity (STOT) - single exposure**

May cause respiratory irritation (ethyl silicate, tetraethyl silicate)

**Specific target organ toxicity (STOT) - repeated exposure**

May cause damage to organs through prolonged or repeated exposure (Bis(neodecanoyloxy)dioctylstannane)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Additional information on tests**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**12. Ecological information****Ecotoxicity**

The product is not: Ecotoxic.

**Persistence and degradability**

The product has not been tested.

**Bioaccumulative potential**

The product has not been tested.

**Mobility in soil**

The product has not been tested.

**Other adverse effects**

No information available.

**Further information**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

**13. Disposal considerations****Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

**Contaminated packaging**

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

**14. Transport information****Marine transport (IMDG)****UN number or ID number:**

UN 1292

**UN proper shipping name:**

TETRAETHYL SILICATE

**Transport hazard class(es):**

3

**Packing group:**

III

**Hazard label:**

3

**Special Provisions:**

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Limited quantity: 5 L  
 Excepted quantity: E1  
 EmS: F-E, S-D

**Air transport (ICAO-TI/IATA-DGR)**

**UN number or ID number:** UN 1292  
**UN proper shipping name:** TETRAETHYL SILICATE  
**Transport hazard class(es):** 3  
**Packing group:** III  
 Hazard label: 3



Limited quantity Passenger: 10 L  
 Passenger LQ: Y344  
 Excepted quantity: E1  
 IATA-packing instructions - Passenger: 355  
 IATA-max. quantity - Passenger: 60 L  
 IATA-packing instructions - Cargo: 366  
 IATA-max. quantity - Cargo: 220 L

**Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**Special precautions for user**

Warning: Combustible liquid.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

**15. Regulatory information****U.S. Regulations****National regulatory information**

SARA Section 311/312 Hazards:

ethyl silicate, tetraethyl silicate (78-10-4): Fire hazard, Immediate (acute) health hazard  
 Silicic acid (H<sub>4</sub>SiO<sub>4</sub>), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane (93925-43-0): Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard  
 Bis(neodecanoyloxy)dioctylstannane (68299-15-0): Delayed (chronic) health hazard

**State Regulations****Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)**

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**16. Other information**

Revision date:  
 Revision No: 3

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association

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GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

**Other data**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*