

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### VITAFOL H Hardener

Revision date: 18.09.2019

Product code: 059

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

VITAFOL H Hardener

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### Use of the substance/mixture

Use as laboratory reagent

### 1.3. Details of the supplier of the safety data sheet

Company name: VITA Zahnfabrik H.Rauter GmbH &amp; Co.KG

Post-office box: 1338  
79704 Bad Säckingen

Telephone: +49(0)7761-562-0

Telefax: +49(0)7761-562-299

e-mail: info@vita-zahnfabrik.com

Internet: www.vita-zahnfabrik.com

### 1.4. Emergency telephone

+49-(0)761-19240

#### number:

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No. 1272/2008

Hazard categories:

Flammable liquid: Flam. Liq. 3

Acute toxicity: Acute Tox. 4

Serious eye damage/eye irritation: Eye Irrit. 2

Reproductive toxicity: Repr. 2

Specific target organ toxicity - single exposure: STOT SE 3

Specific target organ toxicity - repeated exposure: STOT RE 1

Hazard Statements:

Flammable liquid and vapour.

Harmful if inhaled.

Causes serious eye irritation.

Suspected of damaging the unborn child.

May cause respiratory irritation.

Causes damage to organs through prolonged or repeated exposure.

### 2.2. Label elements

#### Regulation (EC) No. 1272/2008

#### Hazard components for labelling

ethyl silicate, tetraethyl silicate

tetraethyl silicate; ethyl silicate

Silicic acid (H<sub>4</sub>SiO<sub>4</sub>), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane

Signal word: Danger

#### Pictograms:



#### Hazard statements

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

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H335 May cause respiratory irritation.  
 H361d Suspected of damaging the unborn child.  
 H372 Causes damage to organs through prolonged or repeated exposure.

#### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P337+P313 If eye irritation persists: Get medical advice/attention.

#### 2.3. Other hazards

No information available.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
78-10-4	ethyl silicate, tetraethyl silicate			60 - < 65 %
	201-083-8	014-005-00-0	01-2119496195-28	
	Flam. Liq. 3, Acute Tox. 4, Eye Irrit. 2, STOT SE 3; H226 H332 H319 H335			
78-10-4	tetraethyl silicate; ethyl silicate			20 - < 25 %
	201-083-8	014-005-00-0		
	Flam. Liq. 3, Acute Tox. 4, Eye Irrit. 2, STOT SE 3; H226 H332 H319 H335			
93925-43-0	Silicic acid (H <sub>4</sub> SiO <sub>4</sub> ), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane			10 - < 15 %
	300-346-5			
	Flam. Liq. 3, Repr. 2, Acute Tox. 4, Eye Irrit. 2, STOT RE 1, Aquatic Chronic 4; H226 H361d H302 H319 H372 H413			
68299-15-0	Bis(neodecanoyloxy)dioctylstannane			1 - < 5 %
	269-595-4			
	STOT RE 2, Aquatic Chronic 4; H373 H413			

Full text of H and EUH statements: see section 16.

### SECTION 4: First aid measures

#### 4.1. 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.

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

No information available.

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

Treat symptomatically.

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### **Suitable extinguishing media**

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

#### **Unsuitable extinguishing media**

Water.

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

Flammable. Vapours can form explosive mixtures with air.

### 5.3. Advice for firefighters

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

#### **Additional information**

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

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

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

### 6.2. Environmental precautions

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

### 6.3. Methods and material for containment and cleaning up

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

### 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### **Advice on safe handling**

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

#### **Advice on protection against fire and explosion**

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

### 7.2. 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 exhaust 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.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

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#### Occupational exposure limit values

CAS No	Name of agent	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
78-10-4	Tetraethyl orthosilicate	5	44		TWA (8 h)	

#### 8.2. Exposure controls



##### Appropriate engineering controls

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

##### Protective and hygiene measures

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.

##### 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 Dermatril P NBR (Nitrile rubber) Breakthrough time (maximum wearing 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.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	light red
Odour:	characteristic
pH-Value:	not determined
<b>Changes in the physical state</b>	
Melting point:	not determined
Initial boiling point and boiling range:	166 °C
Flash point:	37 °C
<b>Flammability</b>	
Solid:	not applicable
Gas:	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined
<b>Auto-ignition temperature</b>	
Solid:	not applicable

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Gas:	not applicable
Decomposition temperature:	not determined
<b>Oxidizing properties</b>	
Not oxidising.	
Vapour pressure: (at 50 °C)	<=1100 hPa
Density:	not determined
Water solubility:	No
<b>Solubility in other solvents</b>	
not determined	
Partition coefficient:	not determined
Vapour density:	not determined
Evaporation rate:	not determined

#### **9.2. Other information**

Solid content:	0,0 %
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### **SECTION 10: Stability and reactivity**

#### **10.1. Reactivity**

Flammable.

#### **10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

#### **10.3. Possibility of hazardous reactions**

No known hazardous reactions.

#### **10.4. Conditions to avoid**

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

#### **10.5. Incompatible materials**

No information available.

#### **10.6. Hazardous decomposition products**

No known hazardous decomposition products.

### **SECTION 11: Toxicological information**

#### **11.1. 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

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
78-10-4	ethyl silicate, tetraethyl silicate				
	dermal	LD50 mg/kg	5860		
	inhalation vapour	ATE	11 mg/l		
	inhalation aerosol	ATE	1,5 mg/l		
78-10-4	tetraethyl silicate; ethyl silicate				
	oral	LD50 mg/kg	6270	Rat	GESTIS
	dermal	LD50 mg/kg	5880	Rabbit	GESTIS
	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 mg/kg	500		

#### Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

#### Sensitising effects

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

#### Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child. (Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

#### STOT-single exposure

May cause respiratory irritation. (ethyl silicate, tetraethyl silicate; tetraethyl silicate; ethyl silicate)

#### STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure. (Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)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].

## SECTION 12: Ecological information

### 12.1. Toxicity

The product is not: Ecotoxic.

### 12.2. Persistence and degradability

The product has not been tested.

### 12.3. Bioaccumulative potential

The product has not been tested.

### 12.4. Mobility in soil

The product has not been tested.

### 12.5. Results of PBT and vPvB assessment

The product has not been tested.

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#### 12.6. 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.

### SECTION 13: Disposal considerations

#### 13.1. 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.

### SECTION 14: Transport information

#### **Land transport (ADR/RID)**

<b><u>14.1. UN number:</u></b>	UN 1292
<b><u>14.2. UN proper shipping name:</u></b>	TETRAETHYL SILICATE
<b><u>14.3. Transport hazard class(es):</u></b>	3
<b><u>14.4. Packing group:</u></b>	III
Hazard label:	3



Classification code:	F1
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	30
Tunnel restriction code:	D/E

#### **Inland waterways transport (ADN)**

<b><u>14.1. UN number:</u></b>	UN 1292
<b><u>14.2. UN proper shipping name:</u></b>	TETRAETHYL SILICATE
<b><u>14.3. Transport hazard class(es):</u></b>	3
<b><u>14.4. Packing group:</u></b>	III
Hazard label:	3



Classification code:	F1
Limited quantity:	5 L
Excepted quantity:	E1

#### **Marine transport (IMDG)**

<b><u>14.1. UN number:</u></b>	UN 1292
<b><u>14.2. UN proper shipping name:</u></b>	TETRAETHYL SILICATE
<b><u>14.3. Transport hazard class(es):</u></b>	3
<b><u>14.4. Packing group:</u></b>	III

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Hazard label: 3



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

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

**14.1. UN number:** UN 1292  
**14.2. UN proper shipping name:** TETRAETHYL SILICATE  
**14.3. Transport hazard class(es):** 3  
**14.4. 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

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

#### 14.6. Special precautions for user

Warning: Combustible liquid.

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

### SECTION 15: Regulatory information

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

##### EU regulatory information

Restrictions on use (REACH, annex XVII):  
 Entry 3: tetraethyl silicate; ethyl silicate

##### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 2 - obviously hazardous to water

#### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information



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#### 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  
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%

#### Classification for mixtures and used evaluation method according to regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Flam. Liq. 3; H226	On basis of test data
Acute Tox. 4; H332	Calculation method
Eye Irrit. 2; H319	Calculation method
Repr. 2; H361d	Calculation method
STOT SE 3; H335	Calculation method
STOT RE 1; H372	Calculation method

#### Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H413	May cause long lasting harmful effects to aquatic life.

#### Further Information

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.

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