VITA Zahnfabrik H.Rauter GmbH & Co.KG

Safety Data Sheet

according to 29 CFR 1910.1200(g)

VITA Zahnfabrik H.Rauter GmbH & Co.KG

Revision date: 18.09.2019

VITAFOL H Hardener

Product code: 059

Page 1 of 8

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
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

Emergency phone number: +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.
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

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Components</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-10-4</td>
<td>ethyl silicate, tetraethyl silicate</td>
<td>60 %</td>
</tr>
<tr>
<td>78-10-4</td>
<td>tetraethyl silicate; ethyl silicate</td>
<td>24 %</td>
</tr>
<tr>
<td>93925-43-0</td>
<td>silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetoxy)dioctylstannane</td>
<td>12 %</td>
</tr>
<tr>
<td>68299-15-0</td>
<td>Bis(neodecanoyloxy)dioctylstannane</td>
<td>2 %</td>
</tr>
</tbody>
</table>

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 (CO2), 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. Supress gases/vapours/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

Remove all sources of ignition. Do not breathe gas/fume/vapour/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  
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.

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/vapour/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.

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

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>f/cc</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-10-4</td>
<td>Ethyl silicate</td>
<td>100</td>
<td>850</td>
<td>TWA (8 h)</td>
<td>PEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>85</td>
<td>TWA (8 h)</td>
<td>REL</td>
<td></td>
</tr>
</tbody>
</table>

Exposure controls

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

### 9. Physical and chemical properties

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>light red</td>
</tr>
<tr>
<td>Odor:</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

| pH-Value:        | not determined  |

**Changes in the physical state**

| Melting point/freezing point: | not determined |
| Initial boiling point and boiling range: | 166 °C |
| Flash point:                 | 37 °C          |

**Flammability**

| Solid:           | not applicable |
| Gas:             | not applicable |

| Lower explosion limits: | not determined |
| Upper explosion limits: | not determined |

**Auto-ignition temperature**

| Solid:           | not applicable |
| Gas:             | not applicable |

| Decomposition temperature: | not determined |

**Oxidizing properties**

- Not oxidising.

| Vapor pressure: | <=1100 hPa |
| (at 50 °C)      |            |

| Density:        | not determined |

| Water solubility: | No |

**Solubility in other solvents**

- not determined

| Partition coefficient: | not determined |
| Vapor density:          | not determined |
| Evaporation rate:       | not determined |

**Other information**

| Solid content: | 0,0 % |

### 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

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Components</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-10-4</td>
<td>ethyl silicate, tetraethyl silicate</td>
<td>dermal</td>
<td>LD50 mg/kg</td>
<td>5860</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation vapour</td>
<td>ATE</td>
<td>11 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation aerosol</td>
<td>ATE</td>
<td>1,5 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>78-10-4</td>
<td>tetraethyl silicate; ethyl silicate</td>
<td>oral</td>
<td>LD50 mg/kg</td>
<td>6270</td>
<td>Rat</td>
<td>GESTIS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50 mg/kg</td>
<td>5880</td>
<td>Rabbit</td>
<td>GESTIS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation vapour</td>
<td>ATE</td>
<td>11 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation aerosol</td>
<td>ATE</td>
<td>1,5 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>93925-43-0</td>
<td>Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetoxy)dioctylstannane</td>
<td>oral</td>
<td>ATE mg/kg</td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Irritation and corrosivity**

Causes serious eye irritation

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

**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; tetraethyl silicate; ethyl 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: UN 1292
UN proper shipping name: TETRAETHYL SILICATE
Transport hazard class(es): 3
Packing group: III
Hazard label: 3

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

Air transport (ICAO-TI/IATA-DGR)

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

**VITAFOL H Hardener**

---

**Revision date:** 18.09.2019  
**Product code:** 059  
**Page:** 7 of 8

---

### Limited quantity
- **Passenger:** 10 L  
- **Passenger LQ:** Y344

### Excepted quantity
- **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  
    - tetraethyl silicate; ethyl silicate (78-10-4): Fire hazard, Immediate (acute) health hazard  
    - Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)diocytlstannane (93925-43-0): Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard  
    - Bis(neodecanoyloxy)diocytlstannane (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:** 18.09.2019  
- **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  
- **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.

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