Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 08/10/2015 *Version number 2* *Revision: 08/10/2015*

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1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: VITAFOL H Hardener**

· **Article number:** A9F5/15
· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available
· **Application of the substance / product** Auxiliary for manufacture of dental prothesis

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
VITA Zahnfabrik
H. Rauter GmbH & Co. KG

Postfach 1338 Tel.: 07761/562-0
D 79704 Bad Säckingen Fax: 07761/562299
e-mail: info@vita-zahnfabrik.com
· **Emergency telephone number:** Tel.: ++49-(0)761-19240

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2 Hazards identification

· **Classification of the substance or mixture**


GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.


GHS08 health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.


GHS07

Acute Tox. 4 H332 Harmful if inhaled.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


Harmful

Harmful by inhalation. Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.


Irritant

Irritating to eyes and respiratory system.
Flammable.
· **Information concerning particular hazards for human 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.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

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· ***Label elements***
· ***GHS label elements***
The product is classified and labelled according to the Globally Harmonised System (GHS).
· ***Hazard pictograms***

GHS02 GHS07 GHS08

· ***Signal word*** *Warning*

· ***Hazard-determining components of labelling:***
tetraethyl silicate
Kieselsäure, Tetraethylester, Reaktionsprodukt mit Bis(acetyloxy)dioctylstannan
Bis(neodecanoyloxy)dioctylstannan
· ***Hazard statements***
H226 Flammable liquid and vapour.
H332 Harmful if inhaled.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
· ***Precautionary statements***

P210	*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*
P241	*Use explosion-proof electrical/ventilating/lighting/equipment.*
P303+P361+P353	*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

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3 Composition/information on ingredients

· ***Chemical characterisation: Mixtures***
· ***Description:*** *Mixture of substances listed below with nonhazardous additions.*

· ***Dangerous components:***

CAS: 78-10-4 *Reg.nr.: 0--2119496195-28-0000*	*tetraethyl silicate* *Xn R20; Xi R36/37* *R10* *Flam. Liq. 3, H226; Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335*	*60-100%*
CAS: 93925-43-0	*Kieselsäure, Tetraethylester, Reaktionsprodukt mit Bis(acetyloxy)dioctylstannan* *Xn R48/20/21/22* *R53* *STOT RE 2, H373*	*10-13%*

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CAS: 68299-15-0	Bis(neodecanoyloxy)dioctylstannan Xn R48/22 R53 STOT RE 2, H373	1-5%

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

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4 First aid measures

· **Description of 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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact** Generally the product does not irritate the skin.
· **After eye contact**
Rinse open eye for several minutes with running water. If symptoms persist, consult a doctor.
· **After swallowing** Rinse out mouth and then drink plenty of water.
· **Information for doctor**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents** CO2, sand, extinguishing powder. Do not use water.
· **For safety reasons unsuitable extinguishing agents**
Water.
Water with full jet.
· **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NOx)
· **Advice for firefighters**
· **Protective equipment:** Mount respiratory protective device.
· **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
· **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

7 Handling and storage

· ***Handling***
· ***Precautions for safe handling***
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· ***Information about fire - and explosion protection:***
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage***
· ***Requirements to be met by storerooms and receptacles:*** *No special requirements.*
· ***Information about storage in one common storage facility:*** *Not required.*
· ***Further information about storage conditions:*** *Keep receptacle tightly sealed.*
· ***Storage class*** *3*
· ***Specific end use(s)*** *No further relevant information available.*

*
8 Exposure controls/personal protection

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

· ***Control parameters***

· ***Ingredients with limit values that require monitoring at the workplace:***	
78-10-4 tetraethyl silicate	
EL	*Long-term value: 10 ppm*
EV	*Long-term value: 85 mg/m³, 10 ppm*

· ***Additional information:*** *The lists valid during the making were used as basis.*

· ***Exposure controls***
· ***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.
Avoid contact with the eyes and skin.
· ***Respiratory protection:*** *Use ventilation hood*
· ***Protection of hands:***
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Material of gloves***
e.g. Dermatril P, KCL Nr. 743
e.g. Camatril Velour, KCL Nr. 730
Nitrile rubber, NBR
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***
e.g. KCL Dermatril P 30 min

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e. g. Camatril Velour, KCL 120 min

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

· ***Eye protection:***

Tightly sealed goggles.

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9 Physical and chemical properties

· ***Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*Fluid*
Colour:	*Light red*
· ***Odour:***	*Characteristic*
· ***Odour threshold:***	*Not determined.*
· ***pH-value:***	*Not determined.*
· ***Change in condition***	
Melting point/Melting range:	*undetermined*
Boiling point/Boiling range:	*166 °C*
· ***Flash point:***	*37 °C*
· ***Flammability (solid, gaseous)***	*Not applicable.*
· ***Ignition temperature:***	
Decomposition temperature:	*Not determined.*
· ***Self-igniting:***	*Product is not selfigniting.*
· ***Danger of explosion:***	*Product is not explosive. However, formation of explosive air/vapour mixtures are possible.*
· ***Explosion limits:***	
Lower:	*1.3 Vol %*
Upper:	*23.0 Vol %*
· ***Oxidising properties***	*None*
· ***Vapour pressure at 20 °C:***	*1.7 hPa*
· ***Density:***	*Not determined*
· ***Relative density***	*Not determined.*
· ***Vapour density***	*Not determined.*
· ***Evaporation rate***	*Not determined.*
· ***Solubility in / Miscibility with***	
Water:	*Not miscible or difficult to mix*
· ***Partition coefficient (n-octanol/water):***	*Not determined.*
· ***Viscosity:***	
dynamic:	*Not determined.*
kinematic:	*Not determined.*
· ***Solvent content:***	
Organic solvents:	*0.0 %*

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· ***Other information*** *No further relevant information available.*

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10 Stability and reactivity

· ***Reactivity*** *No decomposition if used and stored according to specifications.*
· ***Chemical stability*** *No decomposition if used and stored according to specifications.*
· ***Thermal decomposition / conditions to be avoided:*** *No decomposition if used according to specifications.*
· ***Possibility of hazardous reactions*** *No dangerous reactions known*
· ***Conditions to avoid*** *No further relevant information available.*
· ***Incompatible materials:*** *No further relevant information available.*
· ***Hazardous decomposition products:*** *No dangerous decomposition products known*

11 Toxicological information

· ***Information on toxicological effects***
· ***Acute toxicity***

· ***LD/LC50 values relevant for classification:***		
78-10-4 tetraethyl silicate		
Oral	*LD50*	*6270 mg/kg (rabbit)*
Dermal	*LD50*	*5860 mg/kg (rabbit)*
Inhalative	*LC50/4 h*	*10 mg/l (rabbit)*

· ***Primary irritant effect:***
· ***Skin corrosion/irritation*** *No irritant effect.*
· ***Serious eye damage/irritation*** *Irritating effect.*
· ***Respiratory or skin sensitisation*** *No sensitising effects known.*
· ***Additional toxicological information:***
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.
Harmful
Irritant

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12 Ecological information

· ***Toxicity***
· ***Aquatic toxicity:*** *No further relevant information available.*
· ***Persistence and degradability*** *No further relevant information available.*
· ***Behaviour in environmental systems:***
· ***Bioaccumulative potential*** *No further relevant information available.*
· ***Mobility in soil*** *No further relevant information available.*
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 2 (German Regulation) (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.
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***Other adverse effects*** *No further relevant information available.*

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13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation*** *Disposal must be made according to official regulations.*

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

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14 Transport information

· ***UN-Number***	
· ***TDG, IMDG, IATA***	*UN1292*
· ***UN proper shipping name***	
· ***TDG***	*UN1292 TETRAETHYL SILICATE mixture*
· ***IMDG, IATA***	*TETRAETHYL SILICATE mixture*
· ***Transport hazard class(es)***	
· ***TDG, IMDG, IATA***	

· ***Class***	*3 Flammable liquids.*
· ***Label***	*3*
· ***Packing group***	
· ***TDG, IMDG, IATA***	*III*
· ***Environmental hazards:***	
· ***Marine pollutant:***	*No*
· ***Special precautions for user***	*Warning: Flammable liquids.*
· ***Danger code (Kemler):***	*30*
· ***EMS Number:***	*F-E,S-D*
· ***Transport in bulk according to Annex II of Marpol and the IBC Code***	*Not applicable.*
· ***Transport/Additional information:***	
· ***TDG***	
· ***Limited quantities (LQ)***	*5L*
· ***Excepted quantities (EQ)***	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*
· ***Transport category***	*3*
· ***Tunnel restriction code***	*D/E*
· ***IMDG***	
· ***Limited quantities (LQ)***	*5L*
· ***Excepted quantities (EQ)***	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*
· ***UN "Model Regulation":***	*UN 1292 TETRAETHYL SILICATE MIXTURE, 3, III*

CDN

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15 Regulatory information

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

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** *None of the ingredients is listed.*

· ***National regulations***

· ***Waterhazard class:*** *Water hazard class 2 (Self-assessment): hazardous for water.*
· ***Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· ***Abbreviations and acronyms:***
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
· **** Data compared to the previous version altered.***