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

1.1 Product identifier

Product no.: **80125**
Product name: **BISICO Flüssighärter A**
Trade number: **00810**

1.2. Relevant identified uses of the substance or mixture and uses advised against:
No further relevant information available.

Application of the substance / the mixture:
Hardener for C-Silicone

1.3. Details of the supplier of the safety data sheet:
BISICO Bielefelder Dentalsilicone GmbH & Co. KG
Johanneswerkstraße 3
D-33611 Bielefeld
Tel.: +49 521 8016800
Fax: +49 521 8016801
Email: info@Bisico.de
responsible for the Safety Data Sheet: Sebastian Zimmermann

1.4. Emergency telephone number:
BISICO Bielefelder Dentalsilicone GmbH & Co. KG
Tel.: +49 521 8016800 (08:00-16:00 PM)
Fax: +49 521 8016801
S. Zimmermann

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Class	Category	Route of exposure	H-Code
Flammable liquids	Category 3		H226
Acute toxicity	Category 4	by inhalation / dust/mist	H332
Serious eye damage / eye irritation	Category 2A		H319
Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation)		H335
Specific target organ toxicity (repeated exposure)	Category 2		H373
Hazardous to the aquatic environment	chronic, category 4		H413

2.2 Label elements
Pictogram(s)

Signal Word: Warning

H-Code	Hazard Statements
H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H413	May cause long lasting harmful effects to aquatic life.

P-Code	Precautionary Statements
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P243	Take precautionary measures against static discharge.
P260	Do not breathe vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: use water spray, extinguishing powder, foam or carbon dioxide to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to waste disposal.

Hazard ingredients (labelling):
Tetraethyl silicate
Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 26,1

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 35

2.3 Other hazards

No data available.

SECTION 3: Composition/information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Chemical characteristics:

Organotin compound + Silicic acid ester

Hazardous ingredients

Type	CAS No.	EC-No. REACH no.	Material	Content %	Classification*	Comment
INHA	78-10-4	201-083-8 01-2119496195-28	Tetraethyl silicate	>60	Xn; R10-20-36/37 Flam. Liq. 3; H226 Acute Tox. 4 by inhalation; H332 Eye Irrit. 2; H319 STOT SE 3; H335	[1]
INHA	93925-43-0	300-346-5	Silicic acid (H4SiO4), tetraethyl ester, reaction products with bis(acetyloxy)dioctylstannane	<30	Xn; R48/22-53 Aquatic Chronic 4; H413 STOT RE 2; H373	[1]
INHA	68299-15-0	269-595-4	Bis(neodecanoyloxy)dioctylstannane	<5	Xn; R48/22-53 STOT RE 2; H373 Aquatic Chronic 4; H413	[1]

Type: INHA: ingredient, VERU: impurity

[1] = Hazardous or environmentally harmful substance; [2] = substance with a Community workplace exposure limit; [3] = PBT substance; [4] = vPvB substance

*Classification codes are explained in section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:
Take persons to a safe place. Observe self-protection for first aid.

After contact with the eyes:
Rinse immediately with plenty of water for 10-15 minutes. Keep eyelids well open to rinse the whole eye surface and eyelids with water. Seek medical advice in case of continuous irritation.

After contact with the skin:
Wipe off excess material with cloth or paper. Remove contaminated or soaked clothing. Immediately rinse with plenty of soap and water. In serious cases, use emergency shower immediately. In the event of a visible skin change or other complaints, seek medical advice (show label or SDS where possible).

After inhalation:
Keep the patient calm. If unconscious place in stable sideways position. Protect against loss of body heat. Seek medical advice and clearly identify substance.

After swallowing:
If conscious, give several small portions of water to drink. Do not induce vomiting. Seek medical advice and clearly identify substance.

4.2 Most important symptoms and effects, both acute and delayed
Any relevant information can be found in other parts of this section.

4.3 Indication of any immediate medical attention and special treatment needed
After inhalation: treat as early as possible using cortisone spray.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: water mist , extinguishing powder , alcohol-resistant foam , carbon dioxide , sand .

Extinguishing media which must not be used for safety reasons:
water jet .

5.2 Special hazards arising from the substance or mixture

Risk of hazardous gasses or fumes in the event of fire. Exposure to combustion products may be a health hazard! Hazardous combustion products: carbon oxides , silicon oxides , incompletely burnt hydrocarbons , toxic and very toxic fumes .

5.3 Advice for firefighters

Special protective equipment for fire fighting:
Use respiratory protection independent of recirculated air. Keep unprotected persons away.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Secure the area. Wear personal protection equipment (see section 8). Keep unprotected persons away. Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. If material is released indicate risk of slipping. Do not walk through spilled material.

6.2 Environmental precautions

Prevent material from entering surface waters, drains or sewers and soil. Close leak if possible without risk. Contain any fluid that runs out using suitable material (e.g. earth). Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers. Inform authorities if substance leaks into surface waters, sewerage or ground.

6.3 Methods and material for containment and cleaning up

Take up mechanically and dispose of according to local/state/federal regulations. Do not flush away with water. For small amounts: Absorb with a neutral (non-acidic / non-basic) liquid binding material such as diatomaceous earth and dispose of according to government regulations. For large amounts: Liquids may be recovered using suction devices or pumps. If flammable, only air driven or properly rated electrical equipment should be used. Clean any slippery coating that remains using a detergent / soap solution or another biodegradable cleaner. Silicone fluids are slippery; spills are a safety hazard. Apply sand or other inert granular material to improve traction.

Further information:
Exhaust vapours. Eliminate all sources of ignition. Consider explosion protection. Observe notes under section 7.

6.4 Reference to other sections

Relevant information in other sections has to be considered. This applies in particular for information given on personal protective equipment (section 8) and on disposal (section 13).

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling:
Ensure adequate ventilation. Must be syphoned off in situ. Spilled substance increases risk of slipping. Avoid formation of aerosols. In case of aerosol formation special protective measures are required (exhausting by suction, respiratory protection).
Observe information in section 8. Keep away from incompatible substances in accordance with section 10.

Precautions against fire and explosion:
Flammable vapors may accumulate and form explosive mixtures with air in containers, process vessels, including partial, empty and uncleaned containers and vessels, or other enclosed spaces. Keep away from sources of ignition and do not smoke. Take precautionary measures against electrostatic charging. Cool endangered containers with water.

7.2 Conditions for safe storage, including any incompatibilities

Conditions for storage rooms and vessels: Observe local/state/federal regulations.

Advice for storage of incompatible materials: Observe local/state/federal regulations.

Further information for storage:
Store in a dry and cool place. Protect against moisture. Store container in a well ventilated place.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Maximum airborne concentrations at the workplace:

CAS No.	Material	Type	mg/m³	ppm	Dust fract.	Fibre/m³
78-10-4	Tetraethyl silicate	OEL	87,0	10,0		
64-17-5	Ethanol	OEL	1920,0	1000,0		
	Aerosol - respirable fraction		10,0			
141-78-6	Ethylacetate	OEL	1460,0	400,0		

-

The aerosol limit specified is a recommendation should aerosol be formed during processing.

Derived No-Effect Level (DNEL):

Tetraethyl silicate

Area of use:	Value:
Worker; dermal; systemic (acute)	12,1 mg/kg/day
Worker; dermal; systemic (long term)	12,1 mg/kg/day
Worker; by inhalation; systemic (acute)	85 mg/m³
Worker; by inhalation; local (acute)	85 mg/m³
Worker; by inhalation; systemic (long term)	85 mg/m³
Worker; by inhalation; local (long term)	85 mg/m³
Consumer; dermal; systemic (acute)	8,4 mg/kg/day
Consumer; dermal; systemic (long term)	8,4 mg/kg/day
Consumer; by inhalation; systemic (acute)	25 mg/m³
Consumer; by inhalation; local (acute)	25 mg/m³
Consumer; by inhalation; systemic (long term)	25 mg/m³
Consumer; by inhalation; local (long term)	25 mg/m³

Predicted No Effect Concentration (PNEC):

Tetraethyl silicate

Area of use:	Value:
freshwater	0,192 mg/l The value has been derived for the following hydrolysis product: ethanol
marine water	0,0192 mg/l The value has been derived for the following hydrolysis product: ethanol
Sediment (freshwater)	0,18 mg/kg wet weight The value has been derived for the following hydrolysis product: ethanol
Sediment (marine water)	0,018 mg/kg wet weight The value has been derived for the following hydrolysis product: ethanol
Soil	0,05 mg/kg wet weight The value has been derived for the following hydrolysis

	product: ethanol
sewage treatment plant	4000 mg/l The value has been derived for the following hydrolysis product: ethanol
Intermittent release	10 mg/l The value has been derived for the following hydrolysis product: ethanol

8.2 Exposure controls

Exposure in the work place limited and controlled

General protection and hygiene measures:
Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. Do not eat, drink or smoke when handling. Wash hands at the end of work and before eating.

Personal protection equipment:

Respiratory protection

In case of long or strong exposure: gas mask filter A .

Eye protection

tight fitting protective goggles .

Hand protection

Protective gloves made of butyl rubber , Protective gloves made of nitrile rubber . At any sign of decay or chemical permeability remove gloves immediately and replace. Gloves suitable for up to 60 minutes' use. The selection of appropriate gloves not only depends on the material, but also on other quality characteristics, and may vary depending on the manufacturer. Please observe information from your glove supplier in terms of permeability and breakthrough time.

Skin protection
protective clothing .

Exposure to the environment limited and controlled

Observe local waste water bye-laws for organo tin and tin compounds. Prevent material from entering surface waters, drains or sewers and soil. Do not introduce large amounts into purification plants.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property: Value: Method:

Appearance
Physical state / form: liquid
Colour: colourless
Odour
Odour: slight
pH-Value
pH-Value: not applicable
Melting point/freezing point
Melting point / melting range: not applicable
Initial boiling point and boiling range
Boiling point / boiling range: > 100 °C at 1013 hPa
Flash point
Flash point: 34 °C (DIN 51755)
Upper/lower flammability or explosive limits
Lower explosion limit (LEL): 1,3 Vol-%
Upper explosion limit (UEL): 23 Vol-%
Vapour pressure
Vapour pressure: 12,5 hPa at 20 °C
Solubility(ies)
Water solubility / miscibility: virtually insoluble
Vapour density
Relative gas/vapour density: No data known.
Relative Density
Relative Density: 1,02 (Water / 4 °C = 1,00)
Density: 1,02 g/cm³
Partition coefficient: n-octanol/water
Partition coefficient: n-octanol/water: No data known.
Auto-ignition temperature
Ignition temperature: 215 °C (DIN 51794)
Viscosity
Viscosity (kinematic): 1,6 mm²/s at 25 °C (DIN 51562)

9.2 Other information

Re 9.2 solubility in water: Hydrolytic decomposition occurs. Hydrolysis products reduce the flash point.

SECTION 10: Stability and reactivity

10.1 – 10.3 Reactivity; Chemical stability; Possibility of hazardous reactions

If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

Relevant information can possibly be found in other parts of this section.

10.4 Conditions to avoid

moisture

10.5 Incompatible materials

Reacts with: water , basic substances and acids . Reaction causes the formation of: alcohols .

10.6 Hazardous decomposition products

If stored and handled properly: none known . Under the effect of humidity, water and protic agents: alcohols .

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Acute toxicity estimate (ATE): ATEmix
(oral): > 2000 mg/kg

Skin corrosion/irritation

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Serious eye damage / eye irritation

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Respiratory or skin sensitization

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Germ cell mutagenicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Carcinogenicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Reproductive toxicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Specific target organ toxicity (single exposure)

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Specific target organ toxicity (repeated exposure)

Assessment:

For this endpoint no toxicological test data is available for the whole product.

Aspiration hazard

Assessment:

For this endpoint no toxicological test data is available for the whole product.

SECTION 12: Ecological information

12.1 Toxicity

Assessment:

No data known.

12.2 Persistence and degradability

Assessment:

Contact with water liberates ethanol and silicic acid.

12.3 Bioaccumulative potential

Assessment:

No data known.

12.4 Mobility in soil

Assessment:

No data known.

12.5 Results of PBT and vPvB assessment

This product contains no relevant substances considered to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

none known

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Material

Recommendation:
Material that cannot be used, reprocessed or recycled should be disposed of in accordance with Federal, State, and local regulations at an approved facility. Depending on the regulations, waste treatment methods may include, e.g., landfill or incineration.

Uncleaned packaging

Recommendation:
Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations. Uncleaned packaging should be treated with the same precautions as the material.

Waste Disposal Legislation Ref.No.(EC)

It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

SECTION 14: Transport information

14.1 – 14.4 UN number; UN proper shipping name; Transport hazard class(es); Packing group

Road ADR:
Valuation: Dangerous Goods
14.1 UN no.: 1292
14.2 Proper Shipping Name: Tetraethylsilicat, Lösung
14.3 Class: 3
14.4 Packaging Group: III

Railway RID:
Valuation: Dangerous Goods
14.1 UN no.: 1292
14.2 Proper Shipping Name: Tetraethylsilicat, Lösung
14.3 Class: 3
14.4 Packaging Group: III

Transport by sea IMDG-Code:
Valuation: Dangerous Goods
14.1 UN no.: 1292
14.2 Proper Shipping Name: Tetraethyl silicate solution
14.3 Class: 3
14.4 Packaging Group: III

Air transport ICAO-TI/IATA-DGR:
Valuation: Dangerous Goods
14.1 UN no.: 1292
14.2 Proper Shipping Name: Tetraethyl silicate solution
14.3 Class: 3
14.4 Packaging Group: III

14.5 Environmental hazards

Hazardous to the environment: no
Marine Pollutant (IMDG): no

14.6 Special precautions for user

Relevant information in other sections has to be considered.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Bulk transport in tankers is not intended.

SECTION 15: Regulatory information

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

National and local regulations must be observed.

For information on labelling please refer to section 2 of this document.

Relevant regulations:
SI 2002/1689: CHIP Regulations 2002
SI 2002/2677: COSHH Regulations 2002
SI 1999/3242: Management of Health & Safety at Work Regulations 1999
Health & Safety at Work Act 1974
SI 1993/1643: Environmental Protection Act 1993 & Subsidiary Regulations.
Other national and local measures relating to the workplace, pollution control, environmental protection and waste control.

15.2 Chemical safety assessment

A chemical safety assessment according to (EC) regulation 1907/2006 (REACH) has not been carried out for this product.

15.3 Details of international registration status

Relevant information about individual substance inventories, where available, is given below.

South Korea (Republic of Korea): ECL (Existing Chemicals List):
This product is listed in, or complies with, the substance inventory.

Japan: ENCS (Handbook of Existing and New Chemical Substances):
This product is listed in, or complies with, the substance inventory.

Australia: AICS (Australian Inventory of Chemical Substances):
This product is listed in, or complies with, the substance inventory.

European Economic Area (EEA):
REACH (Regulation (EC) No 1907/2006):
General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.

SECTION 16: Other information

The details in this document are based on the state of our knowledge at the time of revision. They do not constitute an assurance of the described product properties in terms of statutory warranty requirements.
The providing of this document to a recipient does not relieve the recipient of his or her responsibility toward compliance with all laws and stipulations applicable to the product. This applies in particular to the further sale or distribution of the product or substances or items containing the product, in other jurisdictions and with regard to the protection of third party intellectual property rights. If the described product is processed or mixed with other substances or materials, the details stated in this document cannot be conferred to the resultant new product unless this has been expressly

mentioned. If the product is repackaged, the recipient is obligated to additionally provide the required safety-related information.

Further information:

Commas appearing in numerical data denote a decimal point. Vertical lines in the left-hand margin indicate changes compared with the previous version. This version supersedes all previous versions.

Explanation of the GHS classification code:

Flam. Liq. 3; H226: Flammable liquids Category 3; Flammable liquid and vapour.

Acute Tox. 4; H332: Acute toxicity Category 4; Harmful if inhaled.
Eye Irrit. 2; H319: Serious eye damage / eye irritation Category 2A; Causes serious eye irritation.
STOT SE 3; H335: Specific target organ toxicity (single exposure) Category 3 (respiratory tract irritation); May cause respiratory irritation.
Aquatic Chronic 4; H413Hazardous to the aquatic environment chronic, category 4; May cause long lasting harmful effects to: aquatic life.
STOT RE 2; H373: Specific target organ toxicity (repeated exposure) Category 2; May cause damage to organs through prolonged or repeated exposure.
STOT RE 2; H373: Specific target organ toxicity (repeated exposure) Category 2; May cause damage to organs through prolonged or repeated exposure.
Aquatic Chronic 4; H413Hazardous to the aquatic environment chronic, category 4; May cause long lasting harmful effects to: aquatic life.

R-Phrase	Description
R10 R20 R36/37	Flammable. Harmful by inhalation. Irritating to eyes and respiratory system.
R48/22 R53	Harmful: danger of serious damage to health by prolonged exposure if swallowed. May cause long-term adverse effects in the aquatic environment.
R48/22 R53	Harmful: danger of serious damage to health by prolonged exposure if swallowed. May cause long-term adverse effects in the aquatic environment.

Classification	Rationale:
Flammable liquids, Category 3	Test data
Acute toxicity, Category 4, by inhalation / dust/mist	Calculation method
Serious eye damage / eye irritation, Category 2A	Calculation method
Specific target organ toxicity (single exposure), Category 3 (respiratory tract irritation)	Calculation method
Specific target organ toxicity (repeated exposure), Category 2	Calculation method
Hazardous to the aquatic environment, chronic, category 4	Calculation method

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