

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Trade name: **CAF 4**
Part number: **214-233**

Revision date: 16.02.2022
Date of print: 16.02.2022
Version: 10.0

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

1.1 Product Identifier

Product name: Sealing material CAF 4

1.2 Relevant identified uses of the substance or mixture and uses advised against relevant identified uses (Product categories [PC])

Identified uses: Used for making joints, sealing and gluing.

Uses advised against: none known.

1.3 Details of the supplier of the safety data sheet

Supplier: INFICON AG
Street: Alte Landstrasse 6
Postal code/city: LI-9496 Balzers
Phone: 00423 / 388 3111
E-Mail: reach.liechtenstein@inficon.com

1.4 Emergency Telephone Number (worldwide)

Tox Info Suisse +41 44 251 51 51 (24 hours)

2 Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classification according to Regulation (EC) No. 1272/2008 as amended:

Health Hazards:

Serious eye irritation	Category 2	H319: Causes serious eye irritation.
Specific Target Organ Toxicity -	Category 1	H372: Causes damage to organs through
Repeated Exposure		prolonged or repeated exposure.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

2.2 Label elements

Hazard pictogram



Signal Word:

Warning

Hazard statements:

H319: Causes serious eye irritation.

Precautionary Statements:

Prevention:

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

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.

UFI:

DS30-X0FF-N00A-8HGM

2.3 Other hazards

Physical Hazards:

No specific recommendations

Health Hazards:

Inhalation:

Quartz/cristobalite : When encapsulated in a polymer, is not expected to pose a health hazard when processed under normal conditions of use. Although classified according to EC criteria, this product is exempt from labelling according to article 23 and Annex 1 (section 1.3.4.1) of regulation (CE) n°1272/2008.

Eye contact:

Causes serious eye irritation.

Skin contact:

No specific symptoms noted.

Ingestion:

No specific symptoms noted.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Other Health Effects:

No other information noted.

Environmental Hazards:

No hazard identified as the maximum bioavailable concentration of Octamethylcyclotetrasiloxane (D4) is lower than the classification cut-off value (see Section 12 of this SDS).

Results of PBT and vPvB assessment:

This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

Endocrine Disruption - Health:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Endocrine Disruption - Environment:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other hazards:

No other information noted.

Substance(s) formed under the conditions of use:

Chemical name	Concentration*	CAS-No.	EC No.	Classification
Acetic acid...%	<2%	64-19-7	200-580-7	Flam. Liq. 3 H226; Skin Corr. 1A H314;
Butan-1-ol	<0.002%	71-36-3	200-751-6	Flam. Liq. 3 H226; Acute Tox. 4 H302; STOT SE 3 H335; Eye Dam. 1 H318; Skin Irrit. 2 H315; STOT SE 3 H336;

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The full text for all H-statements is displayed in section 16.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

3 Composition/information on ingredients

3.1 Mixtures

General information:

Mixture of Polyorganosiloxanes, fillers, additives

Hazardous Component(s):

Chemical name	Concentration*	Type:	CAS-No.	EC No.	REACH Registration No.	Notes
Quartz (SiO ₂)	20 - <50%	Component	14808-60-7	238-878-4	Exempt	#
Methylsilanetriyl triacetate	1 - <3%	Component	4253-34-3	224-221-9	01-2119987097-22-XXXX	
Triacetoxymethylsilane	1 - <3%	Component	17689-77-9	241-677-4	01-2119881778-15-XXXX	
Dodecamethylcyclotetrasiloxane	0,1 - <1%	Impurities	540-97-6	208-762-8	Not relevant.	## vPvB
Decamethylcyclotetrasiloxane	0,1 - <1%	Impurities	541-02-6	208-764-9	Not relevant.	## vPvB
Octamethylcyclotetrasiloxane; [D4]	0,079 - <0,1%	Impurities	556-67-2	209-136-7	Not relevant.	## PBT, vPvB

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#: This substance has workplace exposure limit(s).

##: This substance is listed as SVHC.

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

ED: Endocrine Disruptor

Classification:

Chemical name	Classification	Specific concentration limits / ATE / M-Factor:
Quartz (SiO ₂)	STOT RE 1 H372;	
Methylsilanetriyl triacetate	Acute Tox. 4 H302; Skin Corr. 1B H314;	
Triacetoxymethylsilane	Acute Tox. 4 H302; Skin Corr. 1B H314;	
Dodecamethylcyclotetrasiloxane	None known.	
Decamethylcyclotetrasiloxane	None known.	
Octamethylcyclotetrasiloxane; [D4]	Flam. Liq. 3 H226; Repr. 2 H361f; Aquatic Chronic 1 H410;	Aquatic Toxicity (Chronic): 10

The full text for all H-statements is displayed in section 16.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

4 First aid measures

General information

Move into fresh air and keep at rest. Take off contaminated clothing and wash it before reuse. Get medical attention immediately.

4.1 Description of first aid measures:

Inhalation:

Under normal conditions of intended use, this material is not expected to be an inhalation hazard. In case of inhalation: Move person into fresh air and keep at rest. Get medical attention if symptoms occur.

Skin contact:

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin with soap and water. Get medical attention immediately. Contaminated clothing to be placed in closed container until disposal or decontamination. Wash contaminated clothing before reuse.

Eye contact:

In the event of contact with the eyes, rinse thoroughly with clean water for at least 15 minutes. Remove any contact lenses after the initial 1-2 minutes of flushing and after advice from the attending physician. Continue flushing for several additional minutes. Open eyes wide apart. Get medical attention immediately, preferably an ophthalmologist.

Ingestion:

Do not induce vomiting. Rinse mouth thoroughly with water. Do not give victim anything to drink if he is unconscious. Get medical attention immediately.

Immediately call a POISON CENTER/doctor.

Personal Protection for First-aid Responders:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). Refer to sections 5 and 8 for information on emergency procedures and protective equipment.

4.2 Most important symptoms and effects, both acute and delayed

Any important symptoms and effects are described in Section 11 (Toxicological information) of this SDS. Due to the irritant properties of this product, ingestion may lead to burning or ulcers in the mouth, stomach and gastrointestinal tract, followed by stenosis. Most important symptoms/effects: Respiratory discomfort, Burning, Itching.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to the physician:

No specific recommendations. Show this Safety Data Sheet to the attending physician.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire. For further information, refer to section 10: "Stability and Reactivity".

5.2 Special hazards arising from the substance or mixture

Product will burn under fire conditions. Thermal decomposition or combustion may liberate carbon oxides, silicon oxides and other toxic gases or vapors.

5.3 Advice for firefighters

Special fire fighting procedures:

Use standard firefighting procedures and consider the hazards of other involved materials. Remove undamaged containers from fire area if it is safe to do so. Evacuate to a safe location and contact the emergency services. Water spray should be used to cool containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ventilate the area. Do not breathe vapor. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

6.2 Environmental precautions

Do not discharge into drains, water courses or onto the ground. Collect spillage.

6.3 Methods and material for containment and cleaning up

Absorb with sand or other inert absorbent. Collect in containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. To clean the floor and all objects contaminated by this material, use an appropriate solvent (see § 9). Flush area with plenty of water. Incinerate in suitable combustion chamber.

6.4 Reference to other sections:

Caution: Contaminated surfaces may be slippery. For waste disposal, see section 13 of the SDS.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

7 Handling and storage

7.1 Precautions for safe handling

Precautions:

Avoid inhalation of vapors/aerosols/dusts and contact with skin and eyes. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. If ventilation is insufficient, suitable respiratory protection must be provided. See Section 8 of the SDS for Personal Protective Equipment. Provide eyewash station and safety shower and ensure that their location are labelled conspicuously. Limit the quantities of product in the work area to those which are necessary for the work in hand. Handle in accordance with good industrial hygiene and safety practices. Handle and open container with care. Protect from contamination. Do not mix with incompatible materials. For further information, refer to section 10: "Stability and Reactivity". Take care to prevent spills, waste and minimize release to the environment. In case of spills, beware of slippery floors and surfaces.

Hygiene measures:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

7.2 Conditions for safe storage, including any incompatibilities:

Store in accordance with local/regional/national regulations. Avoid discharge into drains, water courses or onto the ground. Provide impermeable soil. Store in a dry place. Store in a well-ventilated place. Keep container tightly closed. Keep in properly labelled containers. Keep above the chemical's freezing point. Protect against physical damage and/or friction. Store away from incompatible materials. For further information, refer to section 10: "Stability and Reactivity".

Packaging frequently used at our sites:

Steel drums coated with epoxy-resin.

7.3 Specific end use(s):

No specific recommendations. See the technical data sheet on this product for further information.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

8 Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits:

Quartz/cristobalite: When encapsulated in a polymer, is not expected to pose a health hazard when processed under normal conditions of use.

octamethylcyclotetrasiloxane; [D4]

Type	Exposure Limit Values	Source	Date	Remarks
TWA	10 ppm 120mg/m ³	WEEL		

Additional exposure limits under the conditions of use:

acetic acid ... %

Type	Exposure Limit Values	Source	Date	Remarks
TWA	10 ppm 25 mg/m ³	EU ELV	12/2009	Indicative
STEL	20 ppm 50 mg/m ³	EU ELV	02/2017	Indicative
TWA	10 ppm 25 mg/m ³	SUVA	01/2018	
STEL	20 ppm 50 mg/m ³	SUVA	01/2018	

butan-1-ol

Type	Exposure Limit Values	Source	Date	Remarks
STEL	100 ppm 310 mg/m ³	SUVA	01/2018	
TWA	200 ppm 310 mg/m ³	SUVA	01/2018	

Monitoring methods:

Ensure workers' exposure monitoring in accordance with national and European regulations in force, in particular Directives 98/24/EC and 2004/37/EC.

8.2 Exposure controls

Appropriate engineering controls

Use engineering controls to reduce air contamination to permissible exposure level. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Engineering controls are always preferable to personal protective equipment. Control measures to consider: Provide adequate ventilation. In case of inadequate ventilation: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Individual protection measures, such as personal protective equipment:

Avoid inhalation of vapors/aerosols/dusts and contact with skin and eyes. Personal protective equipment should be chosen according to applicable standards, adapted to the conditions of use of the product and in discussion with the supplier of the personal protective equipment.

Eye/face protection:

Safety goggles.
Use face shield in case of splash risk.

Hand Protection:

This recommendation is valid only for the product named in this safety data sheet supplied by us, and only for the indicated intended use purposes. In case this product will be mixed with other substances, you need to contact a supplier of CE approved protective gloves in order to determine the appropriate gloves.

Prolonged or repeated contact:

Material: Nitrile.
Glove thickness: 1,25 mm
Guideline: EN374-3

Short contact:

Material: Nitrile / Neoprene
Glove thickness: 0,198 mm
Guideline: EN374-3

Skin and Body Protection:

Wear appropriate clothing to prevent any possibility of skin contact. Isolate contaminated clothing and wash before reuse. In case of splashes: Wear apron or special protective clothing.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use the following CE approved air-purifying respirator: Breathing apparatus with combined filter type ABEK. Wear respiratory protection with combination filter (dust and gas filter) during operations leading to the formation of dust/aerosols.

Environmental Controls:

See sections 7 and 13 of the Safety Data Sheet.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	
Physical State:	Liquid
Form:	Viscous Paste.
Colour:	Off-white
Odor:	Vinegar.
pH:	By definition, pH measurement consists in the determination of hydrogen ions concentration in solution, generally aqueous. Silicones products are hydrophobic and therefore, not soluble in water. By consequence, it is not possible to measure the pH value.
Melting Point / freezing point:	No data available.
Boiling Point:	No data available.
Flash Point:	150 °C / 302 °F
Flammability:	No data available.
Flammability Limit - Upper (%):	No data available.
Flammability Limit - Lower (%):	No data available.
Vapor pressure:	No data available.
Relative vapor density:	No data available.
Evaporation Rate:	No data available.
Density:	Approximate 1,13 kg/dm ³ (20 °C)
Solubility(ies):	
Solubility in Water:	Practically Insoluble
Solubility (other):	Acetone.: Insoluble Ethanol.: Insoluble Petrol.: Dispersible White-spirit.: Dispersible Aromatic hydrocarbons.: Dispersible Chlorinated solvents.: Dispersible
Partition coefficient (n-octanol/water):	No data available.
Self-Ignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Kinematic viscosity:	180 000 - 310 000 mm ² /s
Particle characteristics:	Not applicable.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

9.2 Other information:

Dynamic viscosity:

Approximate 200 000 mPa.s (25 °C)

Oxidizing properties:

According to the data on the components
Not considered as oxidizing.
(Evaluation by structure-activity relationship).

10 Stability and reactivity

10.1 Reactivity

Vulcanises at room temperature on contact with moisture in the air.

10.2 Chemical Stability

Stable at room temperature provided it is not on contact with air.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

No other information noted

10.5 Incompatible materials

Strong oxidizing agents. Water.

10.6 Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.
Amorphous silica. During use or in contact with water, may generate hazardous substances.

11 Toxicological information

11.1 Information on likely routes of exposure

Inhalation:

No data available.

Ingestion:

No data available.

Skin Contact:

No data available.

Eye contact:

No data available.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

11.2 Information on hazard classes as defined in Regulation (EC) No 1272/2008:

Acute Toxicity:

Oral:

Not classified for acute toxicity based on available data.

Dermal:

Not classified for acute toxicity based on available data.

Inhalation:

Composition/information on ingredients

Repeated Dose Toxicity:

Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

NOAEL: 50 mg/kg ; (Rat ; Female, Male ; Gavage (Oral)) ; Method: OECD 422 ; Results obtained on a similar product.

NOAEL: 0,56 mg/l ; LOAEL: 2,2 mg/l ; (Rat ; Female, Male ; Inhalation - vapour) ; Method: OECD 413 ; Results obtained on a similar product.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

NOAEL: 1 000 mg/kg ; (Rat ; Female, Male ; Oral) ; Method: OECD 422 ; Subacute exposure.

NOAEL: 0,0182 mg/l ; (Rat ; Female, Male ; Inhalation - vapour) ; Method: OECD 413 ; Subchronic exposure.

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

NOAEL: 1 000 mg/kg ; (Rat ; Female, Male ; Oral) ; Method: OECD 408 ; Subchronic exposure.

NOAEL: 2,42 mg/l ; (Rat ; Female, Male ; Inhalation - vapour) ; Method: OECD 453 ; Chronic exposure.

NOAEL: 1 600 mg/kg ; (Rat ; Female, Male ; Dermal) ; Method: OECD 410 ; Subacute exposure.

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

NOAEL: 1,82 mg/l ; (Rat ; Female, Male ; Inhalation - vapour) ; Method: Similar to OECD 453 ; Chronic exposure.

NOAEL: 960 mg/kg ; (Rabbit ; Female, Male ; Dermal) ; Method: Similar to OECD 410 ; Subacute exposure.

Skin Corrosion/Irritation:

Not irritating

Not irritating; Test results obtained on a similar product.

Serious Eye Damage/Eye

Causes serious eye irritation.

Irritant (Rabbit); Method: OECD 405 ; Results obtained on a similar product.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Respiratory or Skin Sensitization:

Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

Skin sensitization: Not a skin sensitizer. (Guinea Pig) ; Method: OECD 406

TRIACETOXYETHYLSILANE (17689-77-9):

Skin sensitization: Not a skin sensitizer. (Guinea Pig) ; Method: OECD 406

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

Skin sensitization: Not a skin sensitizer. (Guinea Pig) ; Method: OECD 406

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

Skin sensitization: Not a skin sensitizer. (Mouse) ; Method: OECD 429

OCTAMETHYLCYCLOTETRAHILOXANE; [D4] (556-67-2):

Skin sensitization: Not a skin sensitizer. (Guinea Pig) ; Method: OECD 406

Germ Cell Mutagenicity:

In vitro: Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

Bacteria: No mutagenic effect. (Salmonella typhimurium and Escherichia coli; with and without metabolic activation); Method: OECD 471

In vitro gene mutations test on mammalian cells: No mutagenic effect. (Mouse lymphoma cells; with and without metabolic activation); Method: OECD 476; Results obtained on a similar product.

Chromosomal aberration: No clastogenic effect. (Chinese hamster ovary cells; with and without metabolic activation); Method: OECD 473

TRIACETOXYETHYLSILANE (17689-77-9):

Bacterial reverse mutation test: No mutagenic effect. (Salmonella typhimurium and Escherichia coli; with and without metabolic activation); Method: OECD 471

Chromosomal aberration: No clastogenic effect. (Chinese hamster ovary cells; with and without metabolic activation); Method: OECD 473; Results obtained on a similar product.

In vitro gene mutations test on mammalian cells: No mutagenic effect. (Mouse lymphoma cells; with and without metabolic activation); Method: OECD 476; Results obtained on a similar product.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

Bacterial reverse mutation test: No mutagenic effect. (Salmonella typhimurium and Escherichia coli; with and without metabolic activation); Method: OECD 471

In vitro gene mutations test on mammalian cells: No mutagenic effect. (Mouse lymphoma cells; with and without metabolic activation); Method: OECD 476

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

Bacterial reverse mutation test: No mutagenic components identified. (Salmonella typhimurium and Escherichia coli; with and without metabolic activation) ; Method: OECD 471

In vitro gene mutations test on mammalian cells: No mutagenic components identified. (Mouse lymphoma cells; with and without metabolic activation) ; Method: OECD 476

Chromosomal aberration: No clastogenic effect. (Chinese hamster lung cells; with and without metabolic activation); Method: OECD 473

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

Bacterial reverse mutation test: No mutagenic effect. (Salmonella typhimurium; with and without metabolic activation); Method: OECD 471

In vitro gene mutations test on mammalian cells: No mutagenic effect. (Mouse lymphoma cells; with and without metabolic activation); Method: Similar to OECD 476

In vitro mammalian chromosomal aberration test: No clastogenic effect. (Chinese hamster ovary cells; with and without metabolic activation); Method: Similar to OECD 473

In vivo: Based on our knowledge of the composition information:

TRIACETOXYETHYLSILANE (17689-77-9):

DNA damage and/or repair test: negative (Mouse) ; Method: According to a standardised method. ; Results obtained on a similar product.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

Mammalian erythrocyte micronucleus test: No mutagenic effect. (Mouse ; Intraperitoneal) ; Method: OECD 474

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

Mammalian erythrocyte micronucleus test: negative (Rat ; Female, Male ; Inhalation) ; Method: OECD 474
Unscheduled DNA Synthesis (UDS) Test with mammalian liver cells in vivo: negative (Rat ; Female, Male ; Inhalation) ; Method: OECD 486

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

Mammalian bone marrow chromosomal aberration test: negative (Rat ; Female, Male ; Inhalation) ; Method: Similar to OECD 475

Rodent dominant Lethal test: negative (Rat ; Female, Male ; Gavage (Oral)) ; Method: Similar to OECD 478

Carcinogenicity:

Based on our knowledge of the composition information:

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

Not classified

NOAEC: $\geq 2,42$ mg/l (Rat; Female, Male; Inhalation - vapor); Method: Similar to OECD 453; Chronic exposure. No carcinogenic effects relevant to humans.

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

Not classified

No effects expected. NOAEC: $\geq 8,492$ mg/l (Rat; Female, Male; Inhalation - vapor); Method: Similar to OECD 453; Chronic exposure.

Reproductive toxicity:

Fertility: Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

Not classified

NOAEL (parent): $\geq 1\,000$ mg/kg ; NOAEL (F1): None. ; NOAEL (F2): None. (Rat ; Female, Male ; Gavage (Oral)) ; Method: OECD 422 ; The product is not considered to affect the reproductive system. Results obtained on a similar product.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

TRIACETOXYETHYLSILANE (17689-77-9):

Not classified

Fertility study 1 generation: NOAEL (parent): $\geq 2\,500$ mg/kg ; NOAEL (F1): None. ; NOAEL (F2): None. (Rat ; female ; Feed (Oral)) ; The product is not considered to affect fertility. Results obtained on a similar product.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

Not classified

Reproduction/developmental toxicity screening test: NOAEL (parent): $\geq 1\,000$ mg/kg ; NOAEL (F1): $1\,000$ mg/kg ; NOAEL (F2): None. (Rat ; Female, Male ; Gavage (Oral)) ; Method: OECD 422 ; The product is not considered to affect fertility.

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

Not classified

Fertility study 2 generations: NOAEL (parent): $> 2,496$ mg/l ; NOAEL (F1): $2,496$ mg/l ; NOAEL (F2): None. (Rat ; Female, Male ; Inhalation - vapor) ; Method: OECD 416

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

Suspected of damaging fertility.

Fertility study 2 generations: NOAEL (parent): $3,64$ mg/l ; NOAEL (F1): $3,64$ mg/l ; NOAEL (F2): None. (Rat ; Female, Male ; Inhalation) ; Method: Similar to OECD 416 ; Effects on fertility

Teratogenicity: Based on our knowledge of the composition information:

TRIACETOXYETHYLSILANE (17689-77-9):

Not classified

NOAEL (terato): $\geq 1\,600$ mg/kg ; NOAEL (mater): $\geq 1\,600$ mg/kg (Rat ; Gavage (Oral)) ; The product is not considered to be toxic for development. Results obtained on a similar product.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

Not classified

NOAEL (terato): $\geq 1\,000$ mg/kg ; NOAEL (mater): $\geq 1\,000$ mg/kg (Rabbit ; Gavage (Oral)) ; Method: OECD 414

NOAEL (terato): $\geq 1\,000$ mg/kg ; NOAEL (mater): $\geq 1\,000$ mg/kg (Rat ; Gavage (Oral)) ; Method: OECD 414

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

NOAEL (terato): $\geq 8,492$ mg/l ; NOAEL (mater): $3,64$ mg/l (Rat ; Inhalation - vapor) ; Method: Similar to OECD 414 ; The product is not considered to be toxic for development.

NOAEL (terato): $\geq 6,066$ mg/l ; NOAEL (mater): $3,64$ mg/l (Rabbit ; Inhalation - vapor) ; Method: Similar to OECD 414 ; The product is not considered to be toxic for development.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Specific Target Organ Toxicity - Single Exposure:

Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

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

TRIACETOXYETHYLSILANE (17689-77-9):

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

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

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

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

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

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

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

Specific Target Organ Toxicity - Repeated Exposure:

Based on our knowledge of the composition information: Causes damage to organs through prolonged or repeated exposure.

QUARTZ (SiO₂) (14808-60-7):

Causes damage to organs through prolonged or repeated exposure if inhaled.

METHYLSILANETRIYL TRIACETATE (4253-34-3):

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

TRIACETOXYETHYLSILANE (17689-77-9):

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

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

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

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

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

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

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

Aspiration Hazard:

Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

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

TRIACETOXYETHYLSILANE (17689-77-9):

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

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):
Based on available data, the classification criteria are not met.

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):
Based on available data, the classification criteria are not met.

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):
Based on available data, the classification criteria are not met.

11.3 Information on other hazards:

Endocrine disrupting properties:

No data available.

12 Ecological information

General information:

The maximum concentration of Octamethylcyclotetrasiloxane (D4) in the aquatic environment is estimated to be below the established no-effect threshold (<0.0079 mg/l) for aquatic organisms (based on partition coefficient, tested on similar products).

12.1 Toxicity

Acute toxicity:

Fish: Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):
LC 50 (96 h) : > 100 mg/l ; Results obtained on a similar product.

TRIACETOXYETHYLSILANE (17689-77-9):
LC 50 (Zebra danio (Danio rerio); 96 h ; semi-static) : 251 mg/l ; Method: OECD 203

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):
LC 50 (Oncorhynchus mykiss; 96 h ; Flow through) : > 0,016 mg/l ; Method: OECD 204 ; No toxicity at the limit of solubility

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):
LC 50 (Oncorhynchus mykiss; 96 h ; Flow through) : > 0,016 mg/l ; Method: OECD 204
NOEC (Oncorhynchus mykiss; 96 h ; Flow through) : >= 0,016 mg/l ; Method: OECD 204

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):
LC 50 (Oncorhynchus mykiss; 96 h ; Flow through) : > 0,022 mg/l ; Method: According to a standardised method.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Aquatic Invertebrates: Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

LC 50 (48 h) : > 100 mg/l ; Results obtained on a similar product.

TRIACETOXYETHYLSILANE (17689-77-9):

EC 50 (Water flea (Daphnia magna); 24 h) : 6 000 mg/l ; Method: Expert judgement

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

EC 50 (Water flea (Daphnia magna); 48 h ; Flow through) : > 0,0029 mg/l ; Method: OECD 202 ; No toxicity at the limit of solubility

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

EC 50 (Water flea (Daphnia magna); 48 h ; Flow through) : > 0,0029 mg/l ; Method: OECD 202

NOEC (Water flea (Daphnia magna); 48 h ; Flow through) : >= 0,0029 mg/l ; Method: OECD 202

OCTAMETHYLCYCLOTETRAHILOXANE; [D4] (556-67-2):

EC 50 (Water flea (Daphnia magna); 48 h ; Flow through) : > 0,015 mg/l ; Method: According to a standardised method.

Aquatic plants: Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

EC 50 (96 h) : 660 mg/l ; Results obtained on a similar product.

TRIACETOXYETHYLSILANE (17689-77-9):

Toxicity Threshold Value (Green algae (Scenedesmus quadricauda); 8 d) : 4 000 mg/l ; Method: Expert judgement ; Results obtained on a similar product.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

NOEC (growth rate) (Algae (Pseudokirchneriella subcapitata); 72 h ; Static) : >= 0,002 mg/l ; Method: OECD 201 ; No toxicity at the limit of solubility

ErC50 (Algae (Pseudokirchneriella subcapitata); 72 h ; Static) : > 0,002 mg/l ; Method: OECD 201 ; No toxicity at the limit of solubility

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

EC 50 (Algae (Pseudokirchneriella subcapitata); 96 h ; Static) : > 0,012 mg/l ; Method: OECD 201

NOEC (Algae (Pseudokirchneriella subcapitata); 96 h ; Static) : >= 0,012 mg/l ; Method: OECD 201

OCTAMETHYLCYCLOTETRAHILOXANE; [D4] (556-67-2):

ErC50 (Algae (Pseudokirchneriella subcapitata); 96 h) : > 0,022 mg/l ; Method: According to a standardised method.

ErC10 (Algae (Pseudokirchneriella subcapitata); 96 h) : >= 0,022 mg/l ; Method: According to a standardised method.

Toxicity to microorganisms: Based on our knowledge of the composition information:

OCTAMETHYLCYCLOTETRAHILOXANE; [D4] (556-67-2):

EC 50 (3 h) : > 10 000 mg/l

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Chronic Toxicity:

Fish: Based on our knowledge of the composition information:

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

NOEC (Oncorhynchus mykiss; 90 d ; Flow through) : $\geq 0,014$ mg/l ; Method: OECD 210 ; No toxicity at the limit of solubility

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

NOEC (Oncorhynchus mykiss; 90 d ; Flow through) : $\geq 0,014$ mg/l ; Method: OECD 210

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

NOEC (Oncorhynchus mykiss; 93 d ; Flow through) : $\geq 0,0044$ mg/l ; Method: According to a standardised method.

Aquatic Invertebrates: Based on our knowledge of the composition information:

TRIACETOXYETHYLSILANE (17689-77-9):

NOEC (Water flea (Daphnia magna); 21 d ; semi-static) : ≥ 100 mg/l ; Method: OECD 211 ; Results obtained on a similar product.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

NOEC (Water flea (Daphnia magna); 21 d ; semi-static) : $\geq 0,0046$ mg/l ; Method: OECD 211 ; No toxicity at the limit of solubility

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

NOEC (Water flea (Daphnia magna); 21 d ; semi-static) : $\geq 0,015$ mg/l ; Method: OECD 211

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

NOEC (Water flea (Daphnia magna); 21 d) : $0,0079$ mg/l ; Method: EPA OTS 797.1330 (Daphnid Chronic Toxicity Test) ; CLH report / RAC Opinion

NOEC (Water flea (Daphnia magna); 21 d ; Flow through) : $\geq 0,015$ mg/l ; Method: According to a standardised method.

12.2 Persistence and Degradability:

Biodegradation: Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

74 % (activated sludge, domestic, non-adapted ; 21 d ; Dissolved organic carbon (DOC)) ; Method: According to a standardised method. ; Readily biodegradable. Results obtained on a similar product.

TRIACETOXYETHYLSILANE (17689-77-9):

74 % (activated sludge, domestic, non-adapted ; 21 d ; Dissolved organic carbon (DOC)) ; Method: According to a standardised method. ; Readily biodegradable.

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

4,5 % (activated sludge, domestic, non-adapted ; 28 d) ; Method: OECD 310 ; The product is not readily biodegradable.

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

0,14 % (28 d) ; The product is not readily biodegradable.

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

3,7 % (activated sludge and sewage, soil ; 28 d) ; Method: OECD 310 ; The product is not considered to be readily biodegradable.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

BOD/COD Ratio:

No data available.

12.3 Bioaccumulative potential:

Bioconcentration Factor (BCF): Based on our knowledge of the composition information:

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

Bioconcentration Factor (BCF): 2 860 (Fathead Minnow ; 49 d) ; Method: OECD 305 ; Has the potential to bioaccumulate.

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

Bioconcentration Factor (BCF): 16 200 (Pimephales promelas) ; Method: OECD 305 ; The product is not bioaccumulating.

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

Bioconcentration Factor (BCF): 14 900 (Fathead Minnow) ; Method: OECD 305 ; Not bioaccumulable based on the depuration rate constant

Partition coefficient (n-octanol/water): Based on our knowledge of the composition information:

METHYLSILANETRIYL TRIACETATE (4253-34-3):

Log Kow: -2,4 ; Method: estimated

TRIACETOXYETHYLSILANE (17689-77-9):

Log Kow: 0,74 ; Method: estimated

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):

Log Kow: 8,87 (23 °C)

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):

Log Kow: 5,20

Log Kow: 8,02 (25,3 °C) ; Method: OECD 123

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):

Log Kow: 6,49 (25 °C) ; Method: OECD 123

12.4 Mobility in soil:

No data available.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

12.5 Results of PBT and vPvB assessment:

Based on our knowledge of the composition information:

DODECAMETHYLCYCLOHEXASILOXANE (540-97-6):
Meets vPvB criteria (REACH (1907/2006) Ax XIII)

DECAMETHYLCYCLOPENTASILOXANE (541-02-6):
Meets vPvB criteria (REACH (1907/2006) Ax XIII)

OCTAMETHYLCYCLOTETRAISILOXANE; [D4] (556-67-2):
Meets PBT (persistent/bioaccumulative/toxic) criteria. (REACH (1907/2006) Ax XIII)
Meets vPvB criteria (REACH (1907/2006) Ax XIII)

12.6 Endocrine disrupting properties:

No data available.

12.7 Other adverse effects:

No data available.

13 Disposal considerations

13.1 Waste treatment methods

The user's attention is drawn to the possible existence of local regulations regarding disposal.

Disposal methods:

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Incinerate.

Contaminated Packaging:

Contaminated packages should be as empty as possible. Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Recycle following cleaning or dispose of at an authorised site.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

14 Transport information

This material is not subject to transport regulations.

ADR

Not regulated.

ADN

Not regulated.

RID

Not regulated.

IMDG / IMO

Not regulated.

IATA

Not regulated.

15 Regulatory Information

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

EU Regulations:

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances:

None present or none present in regulated quantities.

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances:

None present or none present in regulated quantities.

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended:

None present or none present in regulated quantities.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended:

None present or none present in regulated quantities.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended:

None present or none present in regulated quantities.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended:

None present or none present in regulated quantities.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended:

Non present or none present in regulated quantities.

EU. Directive 2010/75/EU on Industrial Emissions (IPPC), Annex II, L 334/17:

Chemical name	CAS-No.
Octamethylcyclotetrasiloxane; [D4]	556-67-2

EU. REACH Annex XIV, Substances Subject to Authorization:

None present or none present in regulated quantities.

EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC):

Chemical name	CAS-No.	Concentration	Additional Information:
Dodecamethylcyclohexasiloxane	540-97-6	0,1 - 1,0%	very Persistent and very Bioaccumulative (vPvB)
Decamethylcyclopentasiloxane	541-02-6	0,1 - 1,0%	very Persistent and very Bioaccumulative (vPvB)
octamethylcyclotetrasiloxane; [D4]	556-67-2	0,079 - 0,1%	Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB)

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:

Chemical name	CAS-No.	Entry No:	Concentration:
Decamethylcyclopentasiloxane	541-02-6	70	0,1 - 1,0%
octamethylcyclotetrasiloxane; [D4]	556-67-2	70	0,079 - 0,1%

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
octamethylcyclotetrasiloxane; [D4]	556-67-2	0,079 - 0,1%

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants:

None present or none present in regulated quantities.

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I:

Not applicable.

15.2 Chemical safety assessment:

No Chemical Safety Assessment has been carried out.

Inventory Status:

Australia Industrial Chem. Act (AIC):	On or in compliance with the inventory.
Canada DSL Inventory List:	On or in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory.
EINECS, ELINCS or NLP:	On or in compliance with the inventory.

16 Other informations

Revision Information:

SECTION 3: Modification: Composition/information on ingredients

SECTION 15: Modification: Regulatory information

Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II

16.1 Abbreviations and acronyms:

CLP: Regulation No. 1272/2008.
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.
NOAEL - No Observable Adverse Effect Level
LOAEL - Lowest Observable Adverse Effect Level
ED: Endocrine Disruptor
SVHC: Listed on the Candidate List of substances of very high concern (SVHC)

16.2 Important literature references and data sources

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) No 1272/2008 as amended.	Classification procedure
Serious eye irritation ; Category 2 ; H319	On basis of test data
Specific Target Organ Toxicity - Repeated Exposure ; Category 1 ; H372	On basis of test data

16.3 Wording of the H-statements in section 2 and 3:

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

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