SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830

SEAL & BOND FLEX-SIL RED 310ml

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

1.1. Product identifier

Product name : SEAL & BOND FLEX-SIL RED 310ml
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Sealant

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Novatio*
Industrielaan 5B
B-2250 Olen
☎ +32 14 25 76 40
🖷 +32 14 22 02 66
info@novatio.be
*NOVATIO is a registered trademark of Novatech International N.V.

Manufacturer of the product

Novatech International N.V.
Industrielaan 5B
B-2250 Olen
☎ +32 14 85 97 37
🖷 +32 14 85 97 38
info@tec7.be

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Eye Dam.	category 1	H318: Causes serious eye damage.
Skin Irrit.	category 2	H315: Causes skin irritation.

2.2. Label elements

Contains: methylsilanetriyl triacetate; diacetoxydi-tert-butoxysilane.

Signal word Danger

H-statements

H318 Causes serious eye damage.
H315 Causes skin irritation.

P-statements

P280 Wear protective gloves, protective clothing and eye protection/face protection.
P264 Wash hands thoroughly after handling.
P321 Specific treatment (see information on this label).
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.

2.3. Other hazards

Contains component(s) that meet(s) the criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No. 1907/2006

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
silicon dioxide 01-2119379499-16	7631-86-9 231-545-4	10% ≤C<11.5%		(2)	Constituent
methylsilanetriyl triacetate 01-2119987097-22	4253-34-3 224-221-9	2.5%≤C<3%	Acute Tox. 4; H302 Skin Corr. 1C; H314 Eye Dam. 1; H318	(1)	Constituent
diacetoxydi-tert-butoxysilane 01-2119987098-20	13170-23-5 236-112-3	1.5%≤C<2%	Skin Corr. 1B; H314 Eye Dam. 1; H318	(1)(10)	Constituent
dodecamethylcyclohexasiloxane 01-2119517435-42	540-97-6 208-762-8	0.2% ≤C<0.3%		(3)(4)	Constituent
octamethylcyclotetrasiloxane 01-2119529238-36	556-67-2 209-136-7	C≤0.1%	Flam. Liq. 3; H226 Repr. 2; H361f Aquatic Chronic 2; H411	(1)(3)(4)(10)	Constituent

(1) For H-statements in full: see heading 16
(2) Substance with a Community workplace exposure limit
(3) PBT- and/or vPvB-substance
(4) Enumerated in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No. 1907/2006)
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents without medical advice. Take victim to a doctor if irritation persists.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist.

After ingestion:

Rinse mouth with water. Do not apply (chemical) neutralizing agents without medical advice. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

No effects known.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Irritation of the eye tissue.

After ingestion:

No effects known.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Small fire: Quick-acting ABC powder extinguisher, Class A foam extinguisher, Water (quick-acting extinguisher, reel).

Major fire: Water, Class A foam.

5.1.2 Unsuitable extinguishing media:

Small fire: Quick-acting BC powder extinguisher, Quick-acting CO2 extinguisher.

5.2. Special hazards arising from the substance or mixture

On burning: release of harmful gases/vapours e.g.: carbon monoxide - carbon dioxide. Reacts violently with water (moisture).

5.3. Advice for firefighters

5.3.1 Instructions:

No specific fire-fighting instructions required.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Safety glasses. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Safety glasses. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released product.

6.3. Methods and material for containment and cleaning up

Allow spill to solidify. Solid spill: shovel. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Keep away from naked flames/heat. Observe normal hygiene standards. Remove contaminated clothing immediately. Avoid contact of substance with water. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Keep container in a well-ventilated place. Keep only in the original container. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, (strong) bases, water/moisture.

7.2.3 Suitable packaging material:

No data available

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

Belgium

Silices amorphes : silice fondue SiO2 (poussières alvéolaires)	Time-weighted average exposure limit 8 h	0.1 mg/m³
Silices amorphes : terre de diatomées, non calcinées (fraction inhalable)	Time-weighted average exposure limit 8 h	10 mg/m³
Silices amorphes : fumées (fraction alvéolaire)	Time-weighted average exposure limit 8 h	2 mg/m³

Germany

Kieselsäuren, amorphe	Time-weighted average exposure limit 8 h (TRGS 900)	4 mg/m³

UK

Silica, amorphous inhalable dust	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	6 mg/m³
Silica, amorphous respirable dust	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	2.4 mg/m³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
Octamethylcyclotetrasiloxane (Volatile Organic compounds)	NIOSH	2549
Silica, Amorphous (Respirable)	NIOSH	7501

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 Threshold values

DNEL/DMEL - Workers

silicon dioxide

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	4 mg/m³	

methylsilanetriyl triacetate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	31 mg/m³	
	Acute local effects inhalation	31 mg/m³	

diacetoxydi-tert-butoxysilane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	150.84 mg/m³	
	Long-term systemic effects dermal	21.39 mg/kg bw/day	

dodecamethylcyclohexasiloxane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	11 mg/m³	
	Long-term local effects inhalation	1.22 mg/m³	
	Acute local effects inhalation	6.1 mg/m³	

octamethylcyclotetrasiloxane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	73 mg/m³	
	Acute systemic effects inhalation	73 mg/m³	
	Long-term local effects inhalation	73 mg/m³	
	Acute local effects inhalation	73 mg/m³	

DNEL/DMEL - General population

methylsilanetriyl triacetate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	5.1 mg/m³	
	Acute local effects inhalation	5.1 mg/m³	

diacetoxydi-tert-butoxysilane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	37.2 mg/m³	
	Long-term systemic effects dermal	10.69 mg/kg bw/day	
	Long-term systemic effects oral	10.69 mg/kg bw/day	

dodecamethylcyclohexasiloxane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	2.7 mg/m³	
	Long-term local effects inhalation	0.3 mg/m³	
	Acute local effects inhalation	1.5 mg/m³	
	Long-term systemic effects oral	1.7 mg/kg bw/day	
	Acute systemic effects oral	1.7 mg/kg bw/day	

octamethylcyclotetrasiloxane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	13 mg/m³	
	Acute systemic effects inhalation	13 mg/m³	
	Long-term local effects inhalation	13 mg/m³	
	Acute local effects inhalation	13 mg/m³	
	Long-term systemic effects oral	3.7 mg/kg bw/day	
	Acute systemic effects oral	3.7 mg/kg bw/day	

PNEC

methylsilanetriyl triacetate

Compartments	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Fresh water (intermittent releases)	10 mg/l	
STP	6.9 mg/l	
Fresh water sediment	3.4 mg/kg sediment dw	
Marine water sediment	0.34 mg/kg sediment dw	
Soil	0.145 mg/kg soil dw	

diacetoxydi-tert-butoxysilane

Compartments	Value	Remark
Fresh water	0.029 mg/l	
Marine water	0.003 mg/l	
STP	13.276 mg/l	
Fresh water sediment	0.033 mg/kg sediment dw	
Marine water sediment	0.003 mg/kg sediment dw	
Soil	0.02 mg/kg soil dw	

dodecamethylcyclohexasiloxane

Compartments	Value	Remark
STP	1 mg/l	
Fresh water sediment	13 mg/kg sediment dw	
Marine water sediment	1.3 mg/kg sediment dw	
Soil	3.77 mg/kg soil dw	
Oral	66.7 mg/kg food	

octamethylcyclotetrasiloxane

Compartments	Value	Remark
Fresh water	1.5 µg/l	
Marine water	0.15 µg/l	
STP	10 mg/l	
Fresh water sediment	3 mg/kg sediment dw	
Marine water sediment	0.3 mg/kg sediment dw	
Soil	0.54 mg/kg soil dw	
Oral	41 mg/kg food	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Do not eat, drink or smoke during work.

a) Respiratory protection:

Insufficient ventilation: wear respiratory protection.

b) Hand protection:

Protective gloves against chemicals (EN 374).

- materials (good resistance)

PVC, latex.

c) Eye protection:

Safety glasses.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Paste
Odour	Irritating/pungent odour
	Vinegar odour
Odour threshold	No data available
Colour	Red
Particle size	No data available
Explosion limits	No data available
Flammability	Not classified as flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available
Kinematic viscosity	No data available

Melting point	No data available
Boiling point	No data available
Evaporation rate	No data available
Relative vapour density	Not applicable
Vapour pressure	No data available
Solubility	Water ; insoluble
Relative density	No data available
Decomposition temperature	No data available
Auto-ignition temperature	> 400 °C
Flash point	> 150 °C
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Temperature above flashpoint: higher fire/explosion hazard.

10.2. Chemical stability

Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions

Reacts violently with water (moisture).

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

(strong) bases, water/moisture.

10.6. Hazardous decomposition products

On burning: release of harmful gases/vapours e.g.: carbon monoxide - carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement is based on the relevant ingredients

silicon dioxide

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 10000 mg/kg		Rat		
Dermal	LD50		> 5000 mg/kg		Rabbit		

methylsilanetriyl triacetate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	1600 mg/kg bw	14 day(s)	Rat (male / female)	Experimental value	
Dermal						Data waiving	
Inhalation						Data waiving	

diacetoxydi-tert-butoxysilane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	6650 mg/kg bw		Rat (male)	Experimental value	
Dermal						Data waiving	
Inhalation						Data waiving	

dodecamethylcyclohexasiloxane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 423	> 2000 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw		Rat (male / female)	Experimental value	
Inhalation						Data waiving	

octamethylcyclotetrasiloxane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 4800 mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	> 2400 mg/kg bw		Rat (male / female)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	36 mg/l air	4 h	Rat (male / female)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Classification is based on the relevant ingredients

methylsilanetriyl triacetate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	Equivalent to OECD 405		24; 48; 72 hours	Rabbit	Experimental value	
Skin	Corrosive	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	

diacetoxydi-tert-butoxysilane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage; category 1					Literature study	
Skin	Corrosive	Equivalent to OECD 404	3 minutes	24; 48; 72 hours	Rabbit	Experimental value	
Inhalation	Corrosive					Literature study	

dodecamethylcyclohexasiloxane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		24; 48; 72 hours	Rabbit	Experimental value	Single treatment with rinsing
Skin	Not irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	

octamethylcyclotetrasiloxane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	Equivalent to OECD 405		24; 48; 72 hours	Rabbit	Experimental value	Single treatment
Skin	Not irritating	Equivalent to OECD 404	24 h	72 hours	Rabbit	Experimental value	

Conclusion

Causes skin irritation.

Causes serious eye damage.

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement is based on the relevant ingredients

diacetoxydi-tert-butoxysilane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin						Data waiving	

dodecamethylcyclohexasiloxane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Dermal	Not sensitizing	OECD 406	24 h	24; 48 hours	Guinea pig (female)		

octamethylcyclotetrasiloxane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 406		24; 48 hours	Guinea pig (female)	Experimental value	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement is based on the relevant ingredients

methylsilanetriyl triacetate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral	NOAEL	OECD 422	50 mg/kg bw/day		No effect	4 weeks (daily)	Rat (male / female)	Read-across
Inhalation	NOAEL	OECD 413	0.56 mg/l		No effect	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across
Inhalation	LOAEL	OECD 413	2.2 mg/l	Kidney	Affection of the renal tissue	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across

diacetoxydi-tert-butoxysilane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	NOAEL	Subchronic toxicity test	60 mg/kg food		No effect	8 month(s)	Rat (male)	Experimental value
Oral (diet)	NOAEL	Subacute toxicity test	≥ 3600 mg/kg bw/day		No effect	4 weeks (daily)	Rat (male)	Experimental value

dodecamethylcyclohexasiloxane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 422	1000 mg/kg bw/day		No effect		Rat (female)	Experimental value
Inhalation (vapours)	NOAEC	OECD 413	1 ppm		No effect	13 weeks (6h / day, 7 days / week)	Rat (male / female)	Experimental value

octamethylcyclotetrasiloxane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	Dose level	Subacute toxicity test	2.1 %		No effect	28 day(s)	Rat (male / female)	Inconclusive, insufficient data
Dermal	NOAEL	Equivalent to OECD 410	≥ 1 ml/kg bw		No effect	3 weeks (5 days / week)	Rabbit (male / female)	Experimental value
Inhalation (vapours)	NOAEC systemic effects	EPA TSCA consent order	150 ppm	Kidney	No effect	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (vapours)	NOAEC local effects	EPA TSCA consent order	150 ppm	Respiratory tract	No effect	104 weeks (6h / day, 5 days / week)	Rat (male / female)	

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement is based on the relevant ingredients

methylsilanetriyl triacetate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 473	Chinese hamster ovary (CHO)	No effect	Experimental value	

diacetoxydi-tert-butoxysilane

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	
Negative with metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

dodecamethylcyclohexasiloxane

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	

octamethylcyclotetrasiloxane

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 473	Chinese hamster ovary (CHO)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

Conclusion

Not classified for mutagenic or genotoxic toxicity

Mutagenicity (in vivo)

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement is based on the relevant ingredients

diacetoxydi-tert-butoxysilane

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Other		Mouse (male)		

dodecamethylcyclohexasiloxane

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474		Mouse (male / female)	Bone marrow	Experimental value

octamethylcyclotetrasiloxane

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Equivalent to OECD 475	5 days (6h / day)	Rat (male / female)		Experimental value

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement is based on the relevant ingredients

octamethylcyclotetrasiloxane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation	NOAEC	Equivalent to OECD 453	150 ppm	104 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect		Experimental value

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement is based on the relevant ingredients

methylsilanetriyl triacetate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	OECD 422	1000 mg/kg bw/day	51 day(s)	Rat	No effect		Read-across
Maternal toxicity	NOAEL	Other	1000 mg/kg bw/day	51 day(s)	Rat	No effect		Read-across
Effects on fertility	NOAEL	OECD 422	≥ 1000 mg/kg bw/day	51 day(s)	Rat (male / female)	No effect		Read-across

diacetoxydi-tert-butoxysilane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL		≥ 1600 mg/kg bw/day	13 day(s)	Rabbit (female)	No effect		Experimental value
Maternal toxicity	NOAEL		≥ 1600 mg/kg bw/day	13 day(s)	Rabbit (female)	No effect		Experimental value
Effects on fertility	NOAEL		50 mg/kg bw/day		Rat (female)	No effect		Experimental value

dodecamethylcyclohexasiloxane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	1000 mg/kg bw/day	15 days (gestation, daily)	Rat (female)	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	1000 mg/kg bw/day	15 days (gestation, daily)	Rat (female)	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOAEL	OECD 422	1000 mg/kg bw/day	28 day(s) - 46 day(s)	Rat (male / female)	No effect		Experimental value

octamethylcyclotetrasiloxane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation)	NOAEL	Equivalent to OECD 414	≥ 500 ppm	13 days (6h / day)	Rabbit	No effect		Experimental value
Maternal toxicity (Inhalation)	NOAEL	Equivalent to OECD 414	300 ppm	13 days (6h / day)	Rabbit	No effect		Experimental value
Effects on fertility (Inhalation)	NOAEC	EPA OPPTS 870.3800	300 ppm	≥ 70 days (6h / day)	Rat (male / female)	No effect	Reproductive organs	Experimental value
	Dose level (P)	EPA OPPTS 870.3800	500 ppm	≥ 70 days (6h / day)	Rat (male / female)	Decrease in prolificity		Experimental value

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Chronic effects from short and long-term exposure

SEAL & BOND FLEX-SIL RED 310ml

No effects known.

SECTION 12: Ecological information

12.1. Toxicity

SEAL & BOND FLEX-SIL RED 310ml

No (test)data on the mixture available

Judgement of the mixture is based on the relevant ingredients

silicon dioxide

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		> 10000 mg/l	96 h	Brachydanio rerio			Literature
Acute toxicity crustacea	EC50		> 10000 mg/l	24 h	Daphnia magna			Literature
Toxicity algae and other aquatic plants	EC50		440 mg/l	72 h	Selenastrum capricornutum			Literature; Growth rate

methylsilanetriyl triacetate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	EU Method C.1	> 500 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	EU Method C.2	> 500 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	EU Method C.3	> 500 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP

diacetoxydi-tert-butoxysilane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	79 mg/l - 88 mg/l	96 h	Pimephales promelas	Static system	Fresh water	Similar product
Acute toxicity crustacea	EC50	OECD 202	65 mg/l	48 h	Daphnia magna	Static system	Fresh water	Similar product
Toxicity algae and other aquatic plants	ErC50	OECD 201	24.41 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Similar product; GLP

dodecamethylcyclohexasiloxane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes								Not determined, exemption according to REACH
Acute toxicity crustacea								Not determined, exemption according to REACH
Toxicity algae and other aquatic plants	ErC50	OECD 201	> 2 µg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
	NOEC	OECD 201	≥ 2 µg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
Long-term toxicity fish	NOEC	OECD 210	≥ 14 µg/l	90 day(s)	Oncorhynchus mykiss	Flow-through system	Fresh water	Experimental value; GLP
Long-term toxicity aquatic crustacea	NOEC	OECD 211	≥ 4.6 µg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP
Toxicity aquatic micro-organisms	EC50	OECD 209	> 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; GLP

octamethylcyclotetrasiloxane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	EPA OTS 797.1400	> 22 µg/l	96 h	Oncorhynchus mykiss	Flow-through system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	EPA OTS 797.1300	> 15 µg/l	48 h	Daphnia magna	Flow-through system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	EC50	EPA OTS 797.1050	> 22 µg/l	96 h	Pseudokirchneriella subcapitata		Fresh water	Experimental value; GLP
	EC10	EPA OTS 797.1050	≥ 22 µg/l	96 h	Pseudokirchneriella subcapitata		Fresh water	Experimental value; GLP
Long-term toxicity fish	NOEC	Other	≥ 4.4 µg/l	93 day(s)	Oncorhynchus mykiss	Flow-through system	Fresh water	Experimental value; GLP
Long-term toxicity aquatic crustacea	NOEC	EPA OTS 797.1330	≥ 15 µg/l	21 day(s)	Daphnia magna	Flow-through system	Fresh water	Experimental value; GLP

	Parameter	Method	Value	Duration	Species	Value determination
Toxicity other terrestrial organisms	NOEC	OECD 218	44 mg/kg sediment dw	28 day(s)	Chironomus riparius	Experimental value
	LOEC	OECD 218	131 mg/kg sediment dw	28 day(s)	Chironomus riparius	Experimental value

Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2. Persistence and degradability

methylsilanetriyl triacetate

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4	74 %; GLP	21 day(s)	Read-across

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
OECD 111: Hydrolysis as a function of pH	< 12 seconds	Primary degradation	Experimental value

diacetoxydi-tert-butoxysilane

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F: Manometric Respirometry Test	79.5 %; GLP	28 day(s)	Similar product

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
OECD 111: Hydrolysis as a function of pH	< 37.5 seconds; GLP		Similar product

dodecamethylcyclohexasiloxane

Biodegradation water

Method	Value	Duration	Value determination
OECD 310: Ready biodegradability - CO2 in sealed vessels	4.47 %; GLP	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	9 day(s)		Calculated value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
	401 day(s); pH = 7	Primary degradation	Calculated value

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
	1.38 day(s)	Primary degradation	Experimental value

octamethylcyclotetrasiloxane

Biodegradation water

Method	Value	Duration	Value determination
OECD 310: Ready biodegradability - CO2 in sealed vessels	3.7 %; GLP	29 day(s)	Experimental value

Conclusion

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

SEAL & BOND FLEX-SIL RED 310ml

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

silicon dioxide

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

methylsilanetriyl triacetate

Log Kow

Method	Remark	Value	Temperature	Value determination
		-2.4	20 °C	QSAR

diacetoxydi-tert-butoxysilane

Log Kow

Method	Remark	Value	Temperature	Value determination
KOWWIN		1.41		QSAR

dodecamethylcyclohexasiloxane

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	1160; GLP	49 day(s)	Pimephales promelas	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
		8.87	23.6 °C	Experimental value

octamethylcyclotetrasiloxane

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	EPA OTS 797.1520	14900 l/kg; GLP	28 day(s)	Pimephales promelas	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 123		6.488	25.1 °C	Experimental value

Conclusion

Contains bioaccumulative component(s)

12.4. Mobility in soil

methylsilanetriyl triacetate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	1	QSAR

diacetoxydi-tert-butoxysilane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	1.69	Calculated value

dodecamethylcyclohexasiloxane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	5.9	QSAR

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Fugacity Model Level III	1.41 %		13.8 %	72.9 %	11.8 %	Calculated value

octamethylcyclotetrasiloxane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	OECD 106	4.22	Experimental value

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
12 atm m^3/mol		21.7 °C		Experimental value

Conclusion

Contains component(s) that adsorb(s) into the soil
Contains component(s) with potential for mobility in the soil

12.5. Results of PBT and vPvB assessment

Contains component(s) that meet(s) the criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No. 1907/2006.

12.6. Other adverse effects

SEAL & BOND FLEX-SIL RED 310ml

Fluorinated greenhouse gases (Regulation (EU) No 517/2014)

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

Groundwater

Groundwater pollutant

methylsilanetriyl triacetate

Groundwater

Groundwater pollutant

diacetoxydi-tert-butoxysilane

Groundwater

Groundwater pollutant

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
08 04 09* (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants containing organic solvents or other hazardous substances). Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

Recycle/reuse. Allow waste to solidify. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment.

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR), Rail (RID), Inland waterways (ADN), Sea (IMDG/IMSBC), Air (ICAO-TI/IATA-DGR)

14.1. UN number

Transport	Not subject

14.2. UN proper shipping name

14.3. Transport hazard class(es)

Hazard identification number	
Class	
Classification code	

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	

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

Annex II of MARPOL 73/78	Not applicable, based on available data

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
< 0.2 %	

REACH Candidate list

Contains component(s) included in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No 1907/2006)

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· diacetoxydi-tert-butoxysilane · octamethylcyclotetrasiloxane	Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010. 6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled H304, intended for supply to the general public. 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.'
· octamethylcyclotetrasiloxane	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs. 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”. 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC. 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.
· octamethylcyclotetrasiloxane	Octamethylcyclotetrasiloxane (D4)	1. Shall not be placed on the market in wash-off cosmetic products in a concentration equal to or greater than 0,1 % by weight of either substance, after 31 January 2020. 2. For the purposes of this entry, “wash-off cosmetic products” means cosmetic products as defined in Article 2(1)(a) of Regulation (EC) No 1223/2009 that, under normal conditions of use, are washed off with water after application.'

National legislation Belgium

SEAL & BOND FLEX-SIL RED 310ml

No data available

National legislation The Netherlands

SEAL & BOND FLEX-SIL RED 310ml

Waterbezwaarlijkheid	Z (1); Algemene Beoordelingsmethodiek (ABM)

octamethylcyclotetrasiloxane

SZW - Lijst van voor de voortplanting giftige stoffen (vruchtbaarheid)	octamethylcyclotetrasiloxaan; 2; Suspected of damaging fertility.

National legislation France

SEAL & BOND FLEX-SIL RED 310ml

No data available

National legislation Germany

SEAL & BOND FLEX-SIL RED 310ml

WGK	1; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

silicon dioxide

TA-Luft	5.2.1
TRGS900 - Risiko der Fruchtschädigung	Kieselsäuren, amorphe; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden

methylsilanetriyl triacetate

TA-Luft	5.2.5/I

diacetoxydi-tert-butoxysilane

TA-Luft	5.2.5/I

dodecamethylcyclohexasiloxane

TA-Luft	5.2.5/I

octamethylcyclotetrasiloxane

TA-Luft	5.2.5/I

National legislation United Kingdom

SEAL & BOND FLEX-SIL RED 310ml

No data available

Other relevant data

SEAL & BOND FLEX-SIL RED 310ml

No data available

silicon dioxide

IARC - classification	3; Silica

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

Full text of any H-statements referred to under heading 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.
H361f Suspected of damaging fertility.
H411 Toxic to aquatic life with long lasting effects.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does

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