SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

ACO-210

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

1.1. Product identifier

Product name : ACO-210
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

Sealing compound

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@novatech.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
Skin Sens.	category 1	H317: May cause an allergic skin reaction.
Aquatic Chronic	category 3	H412: Harmful to aquatic life with long lasting effects.

2.2. Label elements

Contains: N-(3-(trimethoxysilyl)propyl)ethylenediamine; N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine; reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate; trimethoxyvinylsilane.

Signal word Warning

H-statements

H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

P-statements

P280 Wear protective gloves, protective clothing and eye protection/face protection.
P273 Avoid release to the environment.
P321 Specific treatment (see information on this label).
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Supplemental information

EUH211 Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

No other hazards known

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	M-factors and ATE
calcium carbonate	471-34-1 207-439-9	C<70%		(2)	Constituent	
Carbon black 01-2119384822-32	1333-86-4 215-609-9	C≤1.5 %		(2)		
N-(3-(trimethoxysilyl)propyl) ethylenediamine	1760-24-3 217-164-6	C<1%	Skin Sens. 1B; H317 Eye Dam. 1; H318 STOT SE 3; H335	(1)(10)	Constituent	
N-(2-aminoethyl)-N'-[3-(trimethoxysilyl) propyl]ethylenediamine	35141-30-1 252-390-9	C<0.1 %	Skin Sens. 1A; H317 Acute Tox. 4; H332 Eye Dam. 1; H318 Aquatic Chronic 2; H411	(1)(10)	Constituent	
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] 01-2119489379-17	13463-67-7 236-675-5	C<2%	Carc. 2; H351	(1)(2)	Constituent	
reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate 01-2119491304-40	1065336-91-5	C<1%	Repr. 2; H361f Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(10)	Constituent	M: 1 (Acute, BIG)
trimethoxyvinylsilane	2768-02-7 220-449-8	C<2%	Flam. Liq. 3; H226 Skin Sens. 1B; H317	(1)(6)(10)	Constituent	

(1) For H- and EUH-statements in full: see section 16
(2) Substance with a Community workplace exposure limit
(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data
(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:
Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

After inhalation:
Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

After skin contact:
If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.

After eye contact:
Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.

After ingestion:
Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

4.2.1 Acute symptoms

After inhalation:
No effects known.

After skin contact:
No effects known.

After eye contact:
No effects known.

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, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.

Major fire: Class B foam (not alcohol-resistant).

5.1.2 Unsuitable extinguishing media:

Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.

Major fire: Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

Upon combustion: formation of CO, CO2 and small quantities of nitrous vapours.

5.3. Advice for firefighters

5.3.1 Instructions:

Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Safety glasses (EN 166). Protective clothing (EN 14605 or EN 13034). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

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 section 8.2

6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Safety glasses (EN 166). Protective clothing (EN 14605 or EN 13034).

Suitable protective clothing

See section 8.2

6.2. Environmental precautions

Contain released product. Dam up the solid spill. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Solid spill: cover with absorbent material. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See section 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 very strict hygiene - avoid contact. Remove contaminated clothing immediately. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Storage temperature: 5 °C - 30 °C. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources.

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

Calcium (carbonate de)	Time-weighted average exposure limit 8 h	10 mg/m³
Carbone (noir de)	Time-weighted average exposure limit 8 h	3 mg/m³
Titane (dioxyde de)	Time-weighted average exposure limit 8 h	10 mg/m³

France

Calcium (carbonate de)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	10 mg/m³
Noir de carbone	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	3.5 mg/m³
Titane (dioxyde de), en Ti	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	10 mg/m³

Austria

Titandioxid (Alveolarstaub)	Tagesmittelwert (MAK)	5 mg/m³
	Kurzzeitwert 60(Miw) 2x (MAK)	10 mg/m³

UK

Calcium carbonate inhalable dust	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	10 mg/m³
Calcium carbonate respirable dust	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	4 mg/m³
Carbon black	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	3.5 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	7 mg/m³
Titanium dioxide respirable	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	4 mg/m³
Titanium dioxide total inhalable	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	10 mg/m³

USA (TLV-ACGIH)

Carbon black	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	3 mg/m³ (I)
Titanium dioxide	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	10 mg/m³

(I): Inhalable fraction

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
Calciumdicarbonate	NIOSH	7020
Carbon Black	NIOSH	5000
Carbon Black	NIOSH	5100
Carbon Black	OSHA	ID 196
TiO2	NIOSH	7302
TiO2	NIOSH	7304

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

calcium carbonate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	6.36 mg/m³	

Carbon black

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1 mg/m³	

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	260 mg/m³	
	Acute systemic effects inhalation	260 mg/m³	

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	16.45 mg/m³	

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.27 mg/m³	
	Long-term systemic effects dermal	1.8 mg/kg bw/day	

trimethoxyvinylsilane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	27.6 mg/m³	
	Long-term systemic effects dermal	3.9 mg/kg bw/day	

DNEL/DMEL - General population

calcium carbonate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	1.06 mg/m³	
	Long-term systemic effects oral	6.1 mg/kg bw/day	
	Acute systemic effects oral	6.1 mg/kg bw/day	

Carbon black

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.06 mg/m³	

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	50 mg/m³	
	Acute systemic effects inhalation	50 mg/m³	
	Long-term systemic effects oral	8 mg/kg bw/day	

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	2.9 mg/m³	
	Long-term systemic effects oral	0.83 mg/kg bw/day	

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.31 mg/m³	
	Long-term systemic effects dermal	0.9 mg/kg bw/day	
	Long-term systemic effects oral	0.18 mg/kg bw/day	

trimethoxyvinylsilane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	18.9 mg/m³	
	Long-term systemic effects dermal	7.8 mg/kg bw/day	
	Long-term systemic effects oral	0.3 mg/kg bw/day	

PNEC

calcium carbonate

Compartments	Value	Remark
STP	100 mg/l	

Carbon black

Compartments	Value	Remark
Fresh water	50 mg/l	

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Compartments	Value	Remark
Fresh water	0.062 mg/l	
Marine water	0.006 mg/l	
Fresh water (intermittent releases)	0.62 mg/l	
STP	25 mg/l	
Fresh water sediment	0.22 mg/kg sediment dw	
Marine water sediment	0.022 mg/kg sediment dw	
Soil	0.009 mg/kg soil dw	

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Compartments	Value	Remark
Fresh water	8.8 µg/l	
Fresh water (intermittent releases)	88 µg/l	
Marine water	0.88 µg/l	
Marine water (intermittent releases)	8.8 µg/l	
STP	2.5 mg/l	
Fresh water sediment	33.3 µg/kg sediment dw	
Marine water sediment	3.33 µg/kg sediment dw	
Soil	1.49 µg/kg soil dw	

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Compartments	Value	Remark
Fresh water	0.002 mg/l	
Marine water	< 0.001 mg/l	
Fresh water (intermittent releases)	0.009 mg/l	
STP	1 mg/l	
Fresh water sediment	1.05 mg/kg sediment dw	
Marine water sediment	0.11 mg/kg sediment dw	
Soil	0.21 mg/kg soil dw	

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. Measure the concentration in the air regularly. 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 very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

a) Respiratory protection:

Respiratory protection not required in normal conditions.

b) Hand protection:

Protective gloves against chemicals (EN 374).

c) Eye protection:

Safety glasses (EN 166).

d) Skin protection:

Protective clothing (EN 14605 or EN 13034).

8.2.3 Environmental exposure controls:

See sections 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	Characteristic odour
Odour threshold	No data available (test not performed)
Colour	Light grey
	Black
Particle size	Not applicable
Explosion limits	No data available (test not performed)
Flammability	Not classified as flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	25 mPa.s ; 23 °C
Kinematic viscosity	No data available (test not performed)
Melting point	No data available (test not performed)
Boiling point	No data available (test not performed)
Relative vapour density	No data available (test not performed)
Vapour pressure	No data available (test not performed)
Solubility	Water ; insoluble
Relative density	1.43 ; 20 °C
Absolute density	1430 kg/m³ ; 20 °C
Decomposition temperature	No data available (test not performed)
Auto-ignition temperature	No data available (test not performed)
Flash point	No data available (test not performed)
pH	Not applicable (non-soluble in water)

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Heating increases the fire hazard.

10.2. Chemical stability

No data available.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

Upon combustion: formation of CO, CO2 and small quantities of nitrous vapours.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

11.1.1 Test results

Acute toxicity

ACO-210

No (test)data on the mixture available

Judgement is based on the relevant ingredients

calcium carbonate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 420	> 2000 mg/kg		Rat (female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	> 3 mg/l air	4 h	Rat (male / female)	Experimental value	

Carbon black

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 10000 mg/kg		Rat (male / female)	Experimental value	
Dermal						Data waiving	
Inhalation (dust)	LC0	Equivalent to OECD 403	4.6 mg/m³ air		Rat	Experimental value	

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	EPA OPPTS 870.1100	2295 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	EPA OPPTS 870.1200	> 2000 mg/kg bw	24 h	Rabbit (male / female)	Experimental value	
Inhalation (aerosol)	LC50	EPA OPPTS 870.1300	1.49 mg/l air - 2.44 mg/l air	4 h	Rat (male / female)	Experimental value	
Inhalation						Expert judgement	Not classified

Because of the conditions of use, acute inhalation toxicity is not relevant

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Inhalation (aerosol)	LC50	EPA OPPTS 870.1300	1.49 mg/l - 2.44 mg/l	4 h	Rat (male / female)	Experimental value	

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	> 2000 mg/kg bw		Rat (male / female)	Experimental value	
Dermal						Data waiving	
Inhalation (dust)	LC50	OECD 403	> 5.09 mg/l	4 h	Rat (male)	Experimental value	

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 423	3230 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	> 3170 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation						Data waiving	

trimethoxyvinylsilane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	6899 mg/kg bw - 7012 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	3158 mg/kg bw - 3760 mg/kg bw	24 h	Rabbit (male / female)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	16.8 mg/l	4 h	Rat (male / female)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

ACO-210

No (test)data on the mixture available

Judgement is based on the relevant ingredients

calcium carbonate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		1; 24; 48; 72 hours	Rabbit	Experimental value	Single treatment
Skin	Not irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	
Not applicable (in vitro test)	Not irritating	OECD 439	15 minutes		Reconstructed human epidermis	Experimental value	

Carbon black

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		24; 48; 72 hrs; 4 days	Rabbit	Experimental value	Single treatment without rinsing
Skin	Not irritating	OECD 404	4 h	1; 24; 48; 72 hours	Rabbit	Experimental value	

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	OECD 405	21 day(s)	24; 48; 72 hours	Rabbit	Experimental value	
Skin	Slightly irritating	EPA OPPTS 870.2500	4 h	24; 48; 72 hours	Rabbit	Experimental value	
Inhalation	Irritating; STOT SE cat.3					Literature study	

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	OECD 405		24; 48; 72 hours	Rabbit	Experimental value	

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		1; 24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irritating	Equivalent to OECD 404	4 h	48 hours	Rabbit	Experimental value	

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	EPA OPP 81-4		24; 48; 72 hours	Rabbit	Experimental value	Single treatment
Skin	Not irritating	EPA OPP 81-5	24 h	24; 48; 72 hours	Rabbit	Experimental value	

trimethoxyvinylsilane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h	1; 24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irritating		24 h	24; 48; 72 hours	Rabbit	Experimental value	

Conclusion

Not classified as irritating to the respiratory system

Not classified as irritating to the skin

Not classified as irritating to the eyes

Respiratory or skin sensitisation

ACO-210

No (test)data on the mixture available

Classification is based on the relevant ingredients

calcium carbonate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 429			Mouse (female)	Experimental value	

Carbon black

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 429			Mouse (female)	Experimental value	
Inhalation	Not sensitizing				Mouse (female)	Experimental value	

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	OECD 406		24; 48 hours	Guinea pig (male / female)	Experimental value	

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	Guinea pig maximisation test	48 h	24; 48 hours	Guinea pig (male / female)	Experimental value	

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 429			Mouse (female)	Experimental value	
Inhalation (dust)	Not sensitizing				Mouse (female)	Experimental value	

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	OECD 406			Guinea pig (male / female)	Experimental value	

trimethoxyvinylsilane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	OECD 406			Guinea pig (female)	Experimental value	

Conclusion

May cause an allergic skin reaction.

Not classified as sensitizing for inhalation

Specific target organ toxicity

ACO-210

No (test)data on the mixture available

Judgement is based on the relevant ingredients

calcium carbonate

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	48 day(s)	Rat (male / female)	Experimental value
Inhalation (dust)	NOAEC local effects	OECD 413	≥ 0.212 mg/m³ air		No effect	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (dust)	NOEC	OECD 413	0.399 mg/l		No adverse systemic effects	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

Carbon black

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	Dose level	Equivalent to OECD 452	2050 mg/kg bw/day		No effect	2 year(s)	Rat (female)	Experimental value
Dermal	NOEL		20 %		No effect	12 month(s) - 18 month(s)	Mouse (male / female)	Experimental value
Inhalation (aerosol)	NOEC	Subchronic toxicity test	1 mg/m³ air	Lungs	No effect	13 weeks (6h / day, 5 days / week)	Rat (female)	Experimental value
Inhalation (aerosol)	LOEC	Subchronic toxicity test	7 mg/m³ air	Lungs	Pneumonia	13 weeks (6h / day, 5 days / week)	Rat (female)	Experimental value

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	Equivalent to OECD 422	> 500 mg/kg bw/day		No effect	28 day(s)	Rat (male / female)	Experimental value
Dermal	NOAEL	Subacute toxicity test	≥ 1545 mg/kg bw/day		No effect	11 day(s)	Rat (male / female)	Experimental value
Inhalation (aerosol)	NOAEC	OECD 413	15 mg/l	Respiratory tract	No effect	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 408	> 1000 mg/kg bw/day		No effect	90 day(s)	Rat (male / female)	Experimental value
Dermal								Data waiving

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	NOAEL	Subchronic toxicity test	36 mg/kg bw/day - 41 mg/kg bw/day		No effect		Rat (male / female)	Experimental value

trimethoxyvinylsilane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 422	62.5 mg/kg bw/day		No effect	6 weeks (daily) - 8 weeks (daily)	Rat (male / female)	Experimental value
Oral (stomach tube)	LOAEL	OECD 422	250 mg/kg bw/day	Bladder	Histopathological changes	6 weeks (daily) - 8 weeks (daily)	Rat (male / female)	Experimental value
Inhalation (vapours)	NOAEC	Subchronic toxicity test	100 ppm		No effect	14 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

ACO-210

No (test)data on the mixture available

Judgement is based on the relevant ingredients

calcium carbonate

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	Human lymphocytes	No effect	Experimental value	

Carbon black

Result	Method	Test substrate	Effect	Value determination	Remark
Positive without metabolic activation	Equivalent to OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	
Negative	Equivalent to OECD 471			Experimental value	

N-(3-(trimethoxysilyl)propyl)ethylenediamine

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

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 473	Chinese hamster ovary (CHO)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)		Experimental value	

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Result	Method	Test substrate	Effect	Value determination	Remark
Positive with metabolic activation, positive without metabolic activation	OECD 473	Chinese hamster lung fibroblasts (V79)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster lung fibroblasts (V79)		Experimental value	

trimethoxyvinylsilane

Result	Method	Test substrate	Effect	Value determination	Remark
Positive with metabolic activation, positive without metabolic activation	OECD 473	CHL/IU cells	Chromosome aberrations	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster ovary (CHO)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)		Experimental value	

Mutagenicity (in vivo)

ACO-210

No (test)data on the mixture available

Judgement is based on the relevant ingredients

Carbon black

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Inhalation (aerosol))		13 week(s)	Rat (female)		Experimental value

N-(3-(trimethoxysilyl)propyl)ethylenediamine

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

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

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

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Oral (stomach tube))	OECD 474		Mouse (male)		Experimental value

trimethoxyvinylsilane

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Inhalation (vapours))	OECD 489	2 days (1x / day)	Rat (male)		Experimental value

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

ACO-210

No (test)data on the mixture available

The classification as a carcinogen by inhalation applies only to mixtures in powder form containing 1 % or more of titanium dioxide which is in the form of or incorporated in particles with aerodynamic diameter ≤ 10 µm.

calcium carbonate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Unknown								Data waiving

Carbon black

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (dust)	NOAEC	Human observation study		≥ 1 year(s)	Human	No carcinogenic effect		Experimental value
Dermal	NOEC		20 %	12 weeks (3 times / week) - 18 weeks (3 times / week)	Mouse (male / female)			Experimental value
Oral (diet)	NOEL		104 mg/kg bw/day	2 year(s)	Rat (female)			Experimental value

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (aerosol)		Equivalent to OECD 453		105 weeks (6h / day, 5 days / week)	Rat (male)	Lung tissue affection/degeneration	Lungs	Experimental value
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	5 mg/m³ air	104 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect	Lungs	Experimental value
Oral (diet)	NOEL	Carcinogenic toxicity study	50000 ppm	103 weeks (7 days / week)	Rat (male / female)	No carcinogenic effect		Experimental value

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

ACO-210

No (test)data on the mixture available

Judgement is based on the relevant ingredients

calcium carbonate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (diet))	NOAEC	Equivalent to OECD 414	1963 mg/kg bw/day - 2188 mg/kg bw/day	62 day(s)	Rat	No effect	Foetus	Experimental value
Maternal toxicity (Oral (diet))	NOAEC	Equivalent to OECD 414	1963 mg/kg bw/day - 2188 mg/kg bw/day	62 day(s)	Rat	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOEL	OECD 422	1000 mg/kg bw/day	48 day(s)	Rat (male / female)	No effect		Experimental value

Carbon black

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (aerosol))	NOEC	Developmental toxicity study	42 mg/m³ air	11 days (gestation, daily)	Mouse	No effect		Experimental value
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 (Inhalation (aerosol))	LOAEC	Developmental toxicity study	42 mg/m³ air	11 days (gestation, daily)	Mouse	Lung tissue affection/degeneration	Lungs	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	NOEL		500 mg/kg bw/day	5 day(s)	Mouse (female)	No effect		Experimental value

N-(3-(trimethoxysilyl)propyl)ethylenediamine

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	750 mg/kg bw/day	14 day(s)	Rat	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	750 mg/kg bw/day	14 day(s)	Rat	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOAEL	Equivalent to OECD 422	≥ 500 mg/kg bw/day		Rat (male / female)	No effect		Experimental value

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	1000 mg/kg bw/day	2 weeks (7 days / week)	Rat	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	1000 mg/kg bw/day	2 weeks (7 days / week)	Rat	No effect		Experimental value
Effects on fertility (Oral (diet))	NOAEL	OECD 443	≥ 1000 mg/kg bw/day	14 day(s)	Rat (male / female)	No effect		Experimental value

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	500 mg/kg bw/day	15 days (gestation, daily)	Rat	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	150 mg/kg bw/day	15 days (gestation, daily)	Rat	No effect		Experimental value
Effects on fertility (Oral (diet))	NOAEL	OECD 443	109 mg/kg bw/day - 126 mg/kg bw/day	11 week(s) - 18 week(s)	Rat (male / female)	No effect		Experimental value

trimethoxyvinylsilane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (vapours))	NOAEL	EPA OTS 798.4350	100 ppm	10 days (gestation, 6h / day)	Rat	No effect	Skeleton	Experimental value
Maternal toxicity (Inhalation (vapours))	NOAEL	EPA OTS 798.4350	25 ppm	10 days (gestation, 6h / day)	Rat	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOAEL (P)	OECD 422	1000 mg/kg bw/day	≤ 43 day(s)	Rat (male)	No effect		Experimental value
	NOAEL (P)	OECD 422	250 mg/kg bw/day	≥ 60 day(s)	Rat (female)	No effect		Experimental value

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

ACO-210

No (test)data on the mixture available

Chronic effects from short and long-term exposure

ACO-210

Skin rash/inflammation.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

ACO-210

No (test)data on the mixture available

calcium carbonate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 100 %	96 h	Oncorhynchus mykiss	Semi-static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	> 100 %	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Nominal concentration
	NOEC	OECD 201	50 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity fish	Dose level		60 mg/l	42 day(s)	Oncorhynchus mykiss	Flow-through system	Fresh water	Experimental value; Calcium ion
Long-term toxicity aquatic crustacea								Data waiving
Toxicity aquatic micro-organisms	EC50	OECD 209	> 1000 mg/l	3 h	Activated sludge			Literature study

Carbon black

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 1000 mg/l	96 h	Danio rerio	Static system	Fresh water	Experimental value; Lethal
Acute toxicity crustacea	EC50	OECD 202	> 5600 mg/l	24 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	> 10000 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; Nominal concentration
Long-term toxicity fish								Data waiving
Toxicity aquatic micro-organisms	EC10	TTC-test	800 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; Enzyme effect

N-(3-(trimethoxysilyl)propyl)ethylenediamine

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	EU Method C.1	597 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	EU Method C.2	81 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	8.8 mg/l	72 h	Selenastrum capricornutum	Static system	Fresh water	Experimental value; GLP
	NOEC	OECD 201	3.1 mg/l	72 h	Selenastrum capricornutum	Static system	Fresh water	Experimental value; GLP
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea	NOEC		≥ 1 ppm	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	EC50	DIN 38412-8	67 mg/l	16 h	Pseudomonas putida	Static system	Fresh water	Experimental value; GLP

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	EU Method C.1	597 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	EU Method C.2	81 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	8.8 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Hydrolysis product

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		> 1000 mg/l		Pisces		Fresh water	
Acute toxicity crustacea	EC50		> 1000 mg/l		Invertebrata		Fresh water	
Toxicity algae and other aquatic plants	EC50	OECD 201	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
	NOEC	OECD 201	≥ 100 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	0.9 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	EC50	OECD 201	1.68 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; Nominal concentration
	NOEC	OECD 201	0.22 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; Nominal concentration
Long-term toxicity aquatic crustacea	NOEC	OECD 211	1 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	IC50	Equivalent to OECD 209	≥ 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; Nominal concentration

trimethoxyvinylsilane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		191 mg/l	96 h	Oncorhynchus mykiss		Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	EU Method C.2	168.7 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50		> 89 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
	NOEC		> 89 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea	NOEC	OECD 211	28.1 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	EC50	OECD 209	> 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; Respiration

Conclusion

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4	39 %; Activated sludge	28 day(s)	Experimental value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
OECD 111	0.025 h; pH = 7	Primary degradation	Experimental value

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4-A	39 %; GLP	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	0.624 h	1500000 /cm³	Calculated value

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

Biodegradation water

Method	Value	Duration	Value determination
OECD 301E	38 %	28 day(s)	Experimental value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
OECD 111	100.3 h	Primary degradation	Experimental value

trimethoxyvinylsilane

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F	51 %; Oxygen consumption	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	4.458 h	1.5E6 /cm³	Calculated value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
OECD 111	< 2.4 h; pH = 7	Primary degradation	Weight of evidence

Conclusion

Water

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

ACO-210

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

calcium carbonate

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not quantifiable			

Carbon black

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (inorganic)			

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Log Kow

Method	Remark	Value	Temperature	Value determination
		-0.3	20 °C	QSAR

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

Log Kow

Method	Remark	Value	Temperature	Value determination
		-0.8	20 °C	QSAR

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		< 31.4; Fresh weight	8 week(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 107		2.37 - 2.77	25 °C	Experimental value

trimethoxyvinylsilane

Log Kow

Method	Remark	Value	Temperature	Value determination
KOWWIN		1.1	20 °C	QSAR

Conclusion

Contains bioaccumulative component(s)

12.4. Mobility in soil

N-(3-(trimethoxysilyl)propyl)ethylenediamine

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	3.477	Calculated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Fugacity Model Level III	8.1E-5 %		1.5 %	82.7 %	15.8 %	Calculated value

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

(log) Koc

Parameter	Method	Value	Value determination
log Koc		0.26	QSAR

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	3.67	Calculated value

trimethoxyvinylsilane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	2.811	Calculated value

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
	SRC HENRYWIN v3.20			

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

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

ACO-210

Greenhouse gases

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

calcium carbonate

Water ecotoxicity pH

pH shift

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Water ecotoxicity pH

pH shift

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

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. The waste code must be assigned by the user, preferably in consultation with the (environmental) authorities concerned.

13.1.2 Disposal methods

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. Dispose of at authorized waste collection point.

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. Maritime transport in bulk according to IMO instruments

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
2.691 % - 78.618 %	

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
· N-(3-(trimethoxysilyl)propyl) ethylenediamine · N-(2-aminoethyl)-N'-[3-(trimethoxysilyl) propyl]ethylenediamine · reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate · trimethoxyvinylsilane	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.
· trimethoxyvinylsilane	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.
· trimethoxyvinylsilane	Substances falling within one or more of the following points: (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008: — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or	Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081

	2, but excluding any such substances classified due to effects only following exposure by inhalation — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation — skin sensitiser category 1, 1A or 1B — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2 — serious eye damage category 1 or eye irritant category 2 (b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council (c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex. The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.	

National legislation Belgium

ACO-210

No data available

National legislation The Netherlands

ACO-210

Waterbezwaarlijkheid	Z (1); Algemene Beoordelingsmethodiek (ABM)

National legislation France

ACO-210

No data available

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

Catégorie cancérogène	Titane (dioxyde de), en Ti; C2

National legislation Germany

ACO-210

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

calcium carbonate

TA-Luft	5.2.1

Carbon black

TA-Luft	5.2.1

N-(3-(trimethoxysilyl)propyl)ethylenediamine

TA-Luft	5.2.5

N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine

TA-Luft	5.2.5/I

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

TA-Luft	5.2.1

reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebecate and methyl (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

TA-Luft	5.2.5

trimethoxyvinylsilane

TA-Luft	5.2.5

National legislation Austria

ACO-210

No data available

National legislation United Kingdom

ACO-210

No data available

Other relevant data

ACO-210

No data available

Carbon black

IARC - classification	2B; Carbon black
TLV - Carcinogen	Carbon black; A3

titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]

IARC - classification	2B; Titanium dioxide
TLV - Carcinogen	Titanium dioxide; A4

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.
N-(3-(trimethoxysilyl)propyl)ethylenediamine

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H- and EUH-statements referred to under section 3:

H226 Flammable liquid and vapour.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer if inhaled.
H361f Suspected of damaging fertility.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH211 Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
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 not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.