

1. IDENTIFICATION OF THE SUBSTRATE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name/designation: Alumasc Roofing Sealant.

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

Relevant identified uses: Adhesive.

1.3 Supplier details

Alumasc Building Products Ltd
White House Works, Bold Road, Sutton, St Helens, Merseyside, United Kingdom, WA9 4JG
Tel: +44 (0)1744 648400
e-mail: technical@alumascroofing.com

1.4 Emergency telephone number

Association / Organisation: National Poisons Information Service
Emergency telephone numbers: 0344 892 0111 (Healthcare professionals only)
Other emergency telephone numbers: Alumasc Building Products: +44 17 4464 8400
(Mon-Thurs – 08.30-17.00 Fri – 08.30-16.00)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Classified as Dangerous Goods for transport purposes.

Classification according to Regulation (EC) No. 1272/2008 [CLP][1]:

H317 - Sensitisation (Skin) Category 1.

Legend:

1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567.

2.2 Label elements

Hazard pictures:



Signal word:

Warning

Hazard statements:

H317 May cause an allergic skin reaction.

Precautionary statements prevention:

P261 Avoid breathing mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements response:

P302+P352 IF ON SKIN: Wash with plenty of water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Precautionary statements storage:

Not Applicable

Precautionary statements disposal:

P501: Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

2.3 Other hazards

CG 20-568 ethoxylated
di-CG 20-568 ethoxylated
tetraethyl silicate

Listed in the Europe Regulation (EU) 2018/1881 Specific Requirements for Endocrine Disruptors.
Listed in the Europe Regulation (EU) 2018/1881 Specific Requirements for Endocrine Disruptors.
Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply).

3. COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

3.1 Substances

See 'Composition on ingredients' in Section 3.2.

3.2 Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	% [weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1.2768-02-7 2.220-449-8 3.Not Available 4.Not Available	0.1-3	trimethoxyvinylsilane	Flammable Liquids Category 2, Acute Toxicity (Oral, Dermal and Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H225, H302+H312+H332, H315, H318, H371, H335, H411 [1]	Not Available	Not Available
1.13822-56-5 2.237-511-5 3.Not Available 4.Not Available	<1	3-aminopropyltrimethoxysilane	Substances and Mixtures which in Contact with Water Emit Flammable Gases Category 2, Acute Toxicity (Oral, Dermal and Inhalation) Category 4, Skin Corrosion/Irritation Category 1B, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H261, H302+H312+H332, H314, H318, H370, H411 [1]	Not Available	Not Available
1.1760-24-3 2.217-164-6 3.Not Available 4.Not Available	<1	N-[3-(trimethoxysilyl)propyl]ethylenediamine	Substances and Mixtures which in Contact with Water Emit Flammable Gases Category 2, Skin Corrosion/Irritation Category 1B, Serious Eye Damage/Eye Irritation Category 1, Sensitisation (Skin) Category 1, Sensitisation (Respiratory) Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 3; H261, H314, H318, H317, H334, H412 [1]	Not Available	Not Available
1.125643-61-0 2.406-040-9 3.607-530-00-7 4.Not Available	<1	C7-9 branched alkyl-3,5-di-tert-butyl- 4-hydroxyhydrocinnamate	Hazardous to the Aquatic Environment Long-Term Hazard Category 4; H413 [2]	Not Available	Not Available
1.104810-48-2 2.400-830-7 3.Not Available 4.Not Available	<1	CG 20-568 ethoxylated [e]	Sensitisation (Skin) Category 1; H317 [1]	Not Available	Not Available
1.104810-47-1 2.Not Available 3.Not Available 4.Not Available	<1	di-CG 20-568 ethoxylated [e]	Sensitisation (Skin) Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H317, H411 [1]	Not Available	Not Available

1.41556-26-7 2.255-437-1 3.Not Available 4.Not Available	<1	bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate	Sensitisation (Skin) Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H317, H410 [1]	Not Available	Not Available
1.82919-37-7 2.280-060-4 3.Not Available 4.Not Available	<1	methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Sensitisation (Skin) Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H317, H410 [1]	Not Available	Not Available
1.870-08-6 2.212-791-1 3.Not Available 4.Not Available	<1	di-n-octyltin oxide	Acute Toxicity (Oral, Dermal and Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Reproductive Toxicity Category 1B, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 3; H302+H312+H332, H315, H319, H360F, H335, H412 [1]	Not Available	Not Available
1.78-10-4 2.201-083-8 3.014-005-00-0 4.Not Available	<1	tetraethyl silicate *	Flammable Liquids Category 3, Acute Toxicity (Inhalation) Category 4, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H226, H332, H319, H335 [2]	Not Available	Not Available
Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

4. FIRST AID MEASURES

4.1 Description of first aid measures

- Eye contact:** If product comes in contact with eyes:
Wash out immediately with water.
If irritation continues, seek medical attention.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
- Skin contact:** If skin contact occurs:
Immediately remove all contaminated clothing, including footwear.
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.
- Inhalation:** If fumes or combustion products are inhaled remove from contaminated area.
Other measures are usually unnecessary.
- Ingestion:** Immediately give a glass of water.
First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11.

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

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Foam.
Dry chemical powder.
BCF (where regulations permit).

5.2 Special hazards arising from the substance or mixture

Fire incompatibility:

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

5.3 Advice for fire-fighters

Firefighting:

- When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles.
- When heated to extreme temperatures, (>1700°C) amorphous silica can fuse.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.

Fire/explosion hazard:

- When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles.
- When heated to extreme temperatures, (>1700°C) amorphous silica can fuse.

Combustible. Will burn if ignited.

Combustion products include:

- carbon monoxide (CO)
- carbon dioxide (CO₂)
- silicon dioxide (SiO₂)

other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

May emit corrosive fumes.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

See Section 8.

6.2 Environmental precautions

See Section 12.

6.3 Methods and material for containment and cleaning up

Minor spills:

- Environmental hazard - contain spillage.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety goggles.

Major spills:

Environmental hazard - contain spillage.

Minor hazard.

- Clear area of personnel.
- Alert Fire Brigade and tell them location and nature of hazard.

6.4 Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling:

Avoid all personal contact, including inhalation.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.

Fire & explosion protection:

See Section 5.

Other information:

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.

7.2 Conditions for safe storage, including any incompatibilities

Suitable container:

- Metal can or drum.
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility:

The substance may be or contains a "metalloid".

The following elements are considered to be metalloids; boron, silicon, germanium, arsenic, antimony, tellurium and (possibly) polonium. The electronegativities and ionisation energies of the metalloids are between those of the metals and nonmetals, so the metalloids exhibit characteristics of both classes. The reactivity of the metalloids depends on the element with which they are reacting. For example, boron acts as a nonmetal when reacting with sodium yet as a metal when reacting with fluorine.

- Contact with water liberates highly flammable gases

Silicas:

- react with hydrofluoric acid to produce silicon tetrafluoride gas.
- react with xenon hexafluoride to produce explosive xenon trioxide.
- reacts exothermically with oxygen difluoride, and explosively with chlorine trifluoride (these halogenated materials are not commonplace industrial materials) and other fluorine-containing compounds.
- may react with fluorine, chlorates.
- are incompatible with strong oxidisers, manganese trioxide, chlorine trioxide, strong alkalis, metal oxides, concentrated orthophosphoric acid, vinyl acetate.
- may react vigorously when heated with alkali carbonates.
- Avoid reaction with oxidising agents.

						
+	X	+	O	+	+	+

X - Must not be stored together.

O - May be stored together with specific preventions.

+ - May be stored together.

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

7.3 Specific end uses(s)

See Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNELs Compartment
trimethoxyvinylsilane	Dermal 3.9 mg/kg bw/day (Systemic, Chronic) Inhalation 27.6 mg/m ³ (Systemic, Chronic) Inhalation 260 mg/m ³ (Systemic, Acute) Dermal 7.8 mg/kg bw/day (Systemic, Chronic) * Inhalation 6.7 mg/m ³ (Systemic, Chronic) * Oral 0.3 mg/kg bw/day (Systemic, Chronic) * Inhalation 50 mg/m ³ (Systemic, Acute) *	0.4 mg/L (Water (Fresh)) 0.04 mg/L (Water - Intermittent release) 2.4 mg/L (Water (Marine)) 1.5 mg/kg sediment dw (Sediment (Fresh Water)) 0.15 mg/kg sediment dw (Sediment (Marine)) 0.06 mg/kg soil dw (Soil) 6.6 mg/L (STP)
3-aminopropyltrimethoxysilane	Dermal 1 mg/kg bw/day (Systemic, Chronic) Inhalation 7.1 mg/m ³ (Systemic, Chronic) Inhalation 260 mg/m ³ (Systemic, Acute) Dermal 0.5 mg/kg bw/day (Systemic, Chronic) * Inhalation 1.7 mg/m ³ (Systemic, Chronic) * Oral 8 mg/kg bw/day (Systemic, Chronic) * Inhalation 50 mg/m ³ (Systemic, Acute) *	0.5 mg/L (Water (Fresh)) 0.05 mg/L (Water - Intermittent release) 2.05 mg/L (Water (Marine)) 1.8 mg/kg sediment dw (Sediment (Fresh Water)) 0.18 mg/kg sediment dw (Sediment (Marine)) 0.069 mg/kg soil dw (Soil) 0.81 mg/L (STP) 11.1 mg/kg food (Oral)
N-[3-(trimethoxysilyl)propyl]ethylenediamine	Inhalation 260 mg/m ³ (Systemic, Chronic) Inhalation 0.6 mg/m ³ (Local, Chronic) Inhalation 260 mg/m ³ (Systemic, Acute) Inhalation 5.36 mg/m ³ (Local, Acute) Inhalation 50 mg/m ³ (Systemic, Chronic) * Oral 8 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.1 mg/m ³ (Local, Chronic) * Inhalation 50 mg/m ³ (Systemic, Acute) * Inhalation 4 mg/m ³ (Local, Acute) *	0.062 mg/L (Water (Fresh)) 0.006 mg/L (Water - Intermittent release) 0.62 mg/L (Water (Marine)) 0.22 mg/kg sediment dw (Sediment (Fresh Water)) 0.022 mg/kg sediment dw (Sediment (Marine)) 0.009 mg/kg soil dw (Soil) 25 mg/L (STP)
C7-9 branched alkyl-3,5-di-tert-butyl- 4-hydroxyhydrocinnamate	Dermal 0.22 mg/kg bw/day (Systemic, Chronic) Inhalation 2.33 mg/m ³ (Systemic, Chronic) Dermal 0.006 mg/cm ² (Local, Chronic) Dermal 20 mg/kg bw/day (Systemic, Acute) Inhalation 1 750 mg/m ³ (Systemic, Acute) Dermal 1 mg/cm ² (Local, Acute) Dermal 0.33 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.74 mg/m ³ (Systemic, Chronic) * Oral 0.16 mg/kg bw/day (Systemic, Chronic) * Dermal 50 mg/kg bw/day (Systemic, Acute) * Inhalation 875 mg/m ³ (Systemic, Acute) * Oral 50 mg/kg bw/day (Systemic, Acute) * Dermal 8.33 mg/cm ² (Local, Acute) *	0.004 mg/L (Water (Fresh)) 0 mg/L (Water - Intermittent release) 0.018 mg/L (Water (Marine)) 0.37 mg/kg sediment dw (Sediment (Fresh Water)) 0.037 mg/kg sediment dw (Sediment (Marine)) 0.05 mg/kg soil dw (Soil) 1 mg/L (STP) 0.033 mg/kg food (Oral)
CG 20-568 ethoxylated	Dermal 0.25 mg/kg bw/day (Systemic, Chronic) Inhalation 0.35 mg/m ³ (Systemic, Chronic) Dermal 0.025 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.085 mg/m ³ (Systemic, Chronic) * Oral 0.025 mg/kg bw/day (Systemic, Chronic) *	Not Available
di-n-octyltin oxide	Inhalation 0.03 mg/m ³ (Systemic, Chronic) Inhalation 0.06 mg/m ³ (Systemic, Acute) Inhalation 0.06 mg/m ³ (Local, Acute) Oral 0.001 mg/kg bw/day (Systemic, Chronic) *	Not Available
tetraethyl silicate	Dermal 56 mg/kg bw/day (Systemic, Chronic) Dermal 56 mg/kg bw/day (Systemic, Acute) Dermal 3 mg/kg bw/day (Systemic, Chronic) * Inhalation 14 mg/m ³ (Systemic, Chronic) * Inhalation 14 mg/m ³ (Local, Chronic) * Dermal 3 mg/kg bw/day (Systemic, Acute) * Inhalation 14 mg/m ³ (Systemic, Acute) * Inhalation 14 mg/m ³ (Local, Acute) *	0.19 mg/L (Water (Fresh)) 0.019 mg/L (Water - Intermittent release) 10 mg/L (Water (Marine)) 0.83 mg/kg sediment dw (Sediment (Fresh Water)) 0.083 mg/kg sediment dw (Sediment (Marine)) 0.05 mg/kg soil dw (Soil) 4000 mg/L (STP)

* Values for general population.

Occupational Exposure Limits (OEL):

Ingredient data:

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs)	di-n-octyltin oxide	Tin compounds, organic, except Cyhexatin (ISO), (as Sn)	0.1 mg/m ³	0.2 mg/m ³	Not Available	Sk
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	tetraethyl silicate	Tetraethyl orthosilicate	5 ppm / 44 mg/m ³	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	tetraethyl silicate	Tetraethyl orthosilicate	5 ppm / 44 mg/m ³	Not Available	Not Available	Not Available

Emergency limits:

Ingredient	TEEL-1	TEEL-2	TEEL-3
trimethoxyvinylsilane	9.5 ppm	100 ppm	120 ppm
3-aminopropyltrimethoxysilane	30 mg/m ³	330 mg/m ³	2,000 mg/m ³
N-[3-(trimethoxysilyl)propyl]ethylenediamine	23 mg/m ³	250 mg/m ³	1,500 mg/m ³
tetraethyl silicate	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
trimethoxyvinylsilane	Not Available	Not Available
3-aminopropyltrimethoxysilane	Not Available	Not Available
N-[3-(trimethoxysilyl)propyl]ethylenediamine	Not Available	Not Available
C7-9 branched alkyl-3,5-di-tert-butyl- 4-hydroxyhydrocinnamate	Not Available	Not Available
CG 20-568 ethoxylated	Not Available	Not Available
di-CG 20-568 ethoxylated	Not Available	Not Available
bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate	Not Available	Not Available
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Not Available	Not Available
di-n-octyltin oxide	25 mg/m ³	Not Available
tetraethyl silicate	700 ppm	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
trimethoxyvinylsilane	E	≤ 0.1 ppm
N-[3-(trimethoxysilyl)propyl]ethylenediamine	D	> 0.1 to ≤ 1 ppm
CG 20-568 ethoxylated	D	> 0.1 to ≤ 1 ppm
di-CG 20-568 ethoxylated	D	> 0.1 to ≤ 1 ppm
bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate	D	> 0.1 to ≤ 1 ppm
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	D	> 0.1 to ≤ 1 ppm
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.	

8.2 Exposure controls

8.2.1. Appropriate engineering Controls:	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
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8.2.2. Personal protection:	    
Eye and face protection:	Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
Skin protection:	See Hand Protection below.
Hands/feet protection:	Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
Body protection:	See Other Protection below.
Other protection:	Protective overalls, closely fitted at neck and wrist. Eye-wash unit. IN CONFINED SPACES: Non-sparking protective boots Static-free clothing.

Respiratory protection:

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

8.2.3. Environmental exposure controls:

See Section 12.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

Appearance:	Black	Relative density (Water = 1):	1.45-1.50
Physical state:	Non Slump Paste	Partition coefficient n-octanol/water:	Not applicable
Odour:	Not applicable	Auto-ignition temperature (°C):	Not applicable
Odour threshold:	Not available	Decomposition temperature:	Not applicable
pH (as supplied):	Not available	Viscosity (cSt):	Not applicable
Melting point/freezing point (°C):	Not applicable	Molecular weight (g/mol):	Not applicable
Initial boiling point and boiling range (°C):	Not applicable	Taste:	Not applicable
Flash point (°C):	Not applicable	Explosive properties:	Not applicable
Evaporation rate:	Not applicable	Oxidising properties:	Not applicable
Flammability:	Not available	Surface Tension (dyn/cm or mN/m):	Not applicable
Upper Explosive Limit (%):	Not available	Volatile Component (%vol):	Not applicable
Lower Explosive Limit (%):	Not available	Gas group:	Not applicable
Vapour pressure (kPa):	Not available	pH as a solution (1%):	Not applicable
Solubility in water:	Immiscible	VOC g/L:	35
Vapour density (Air = 1):	Not available	Nanoform Particle Characteristics:	Not applicable
Nanoform Solubility	Not available		
Particle Size	Not available		

9.2 Other information

Not applicable.

10. STABILITY AND REACTIVITY

10.1 Reactivity

See Section 7.2.

10.2 Chemical stability

Unstable in the presence of incompatible materials.
Product is considered stable.
Hazardous polymerisation will not occur.

10.3 Possibility of hazardous reactions

See Section 7.2.

10.4 Conditions to avoid

See Section 7.2.

10.5 Incompatible materials

See Section 7.2.

10.6 Hazardous decomposition products

See Section 5.3

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Inhaled:	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion:	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin contact:	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye:	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic:	Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Amorphous silicas generally are less hazardous than crystalline silicas, but the former can be converted to the latter on heating and subsequent cooling. Inhalation of dusts containing crystalline silicas may lead to silicosis, a disabling lung disease that may take years to develop. Soluble silicates do not exhibit sensitizing potential. Testing in bacterial and animal experiments have not shown any evidence of them causing mutations or birth defects. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Alumasc Roofing Sealant:

Toxicity	Irritation
Not available	Not available

trimethoxyvinylsilane:

Toxicity	Irritation
Dermal (rabbit) LD50: 3423 mg/kg[2]	Eye (rabbit): 500 mg/24h - mild
Inhalation(Rat) LC50: 2773 ppm4h[2]	Eye (rabbit): 500 mg/24h mild
Oral (Rat) LD50: >300<2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Skin (rabbit): 500 mg/24h - mild
	Skin (rabbit): 500 mg/24h mild
	Skin: no adverse effect observed (not irritating)[1]

3-aminopropyltrimethoxysilane:

Toxicity	Irritation
Dermal (rabbit) LD50: 15800 mg/kg[2]	Not Available
Inhalation(Rat) LC50: 64000 ppm4h[2]	
Oral (Rat) LD50: 5628 mg/kg[2]	

N-[3-(trimethoxysilyl)propyl]ethylenediamine:

Toxicity	Irritation
Dermal (rabbit) LD50: >2000 mg/kg[1]	Eye (rabbit): 15 mg SEVERE
Inhalation(Rat) LC50: >1.49<2.44 mg/l4h[1]	Eye: adverse effect observed (irreversible damage)[1]
Oral (Rat) LD50: 1897 mg/kg[1]	Skin (rabbit): 500 mg mild
	Skin: no adverse effect observed (not irritating)[1]

C7-9 branched alkyl-3,5-di-tert-butyl- 4-hydroxyhydrocinnamate:

Toxicity	Irritation
dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit: non-irritating *
Oral (Rat) LD50: >200 mg/kg[2]	Skin (rat): non-irritating *

CG 20-568 ethoxylated:

Toxicity	Irritation
dermal (rat) LD50: >2000 mg/kg[2]	Skin (guinea pig): Strong sensit.
Oral (Rat) LD50: >5000 mg/kg[2]	Skin (rabbit): non-irritant

di-CG 20-568 ethoxylated:

Toxicity	Irritation
Not Available	Not Available

bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate:

Toxicity	Irritation
Oral (Rat) LD50: 3100 mg/kg[2]	Not Available

methyl 1,2,2,6,6-pentamethyl-4-piperidylsebacate:

Toxicity	Irritation
Not Available	Not Available

di-n-octyltin oxide:

Toxicity	Irritation
dermal (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
Oral (Rat) LD50: 2500 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]

tetraethyl silicate:

Toxicity	Irritation
Dermal (rabbit) LD50: 5878 mg/kg ^[2]	Eye (human): 3000 ppm
Inhalation(Rat) LC50; >5.03 mg/l4h ^[1]	Eye (rabbit): 100 mg mild
Oral (Rat) LD50; >2000 mg/kg ^[1]	Eye (rabbit): 500 mg/24h - mild
	Skin (rabbit): 500mg/24h moderate

Legend:

1. Value obtained from Europe ECHA Registered Substances – Acute toxicity; 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS – Register of Toxic Effect of chemical Substances.

TRIMETHOXYVINYLSILANE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Manufacturers Data:
3-AMINOPROPYLTRIMETHOXYSILANE	*Dow Corning MSDS Toray Z-6610 Silane
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE	For N-[3-(trimethoxysilyl)propyl]-ethylenediamine (AEAPTMS) and its analogues: Animal testing shows that AEAPTMS is moderately irritating to (and can sensitise) the skin and severely irritating to the eyes. It also causes salivation and labored breathing. There is no evidence that AEAPTMS causes genetic damage or reproductive or developmental toxicity to date.
C7-9 BRANCHED ALKYL-3,5-DI-TERT-BUTYL-4-HYDROXYHYDROCINNAMATE	Non-sensitising to guinea pig skin * Everspring Chemical MSDS Data shows that acute toxicity following oral and topical use of hindered phenols is low. They are not proven to cause mutations. However, long term use may affect the liver, thyroid, kidney and lymph nodes.
CG 20-568 ETHOXYLATED	Inhalation (rat) LC50: > 5.8 mg/l Aerosol Eye (rabbit): non-irritant Ames Test: Non Mutagenic
DI-CG 20-568 ETHOXYLATED	No clinical signs were observed at 10 mg/kg/day for F and at 10 and 50 mg/kg/day for M. Drooling was observed in M and F at 200 and 1000 mg/kg. Alopecia was observed in F at 50 and 1000 mg/kg.
TETRAETHYL SILICATE	Liver, kidney and lung damage may result from overexposure by inhalation or swallowing. Animal testing showed that exposure to 400 parts per million for 30 days can be lethal.
Hybridbond & N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE	Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergies are of the delayed type with onset up to four hours following exposure.
Hybridbond & N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE & CG 20-568 ETHOXYLATED & DI-CG 20-568 ETHOXYLATED & BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL)SEBACATE & METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.
Hybridbond & TETRAETHYL SILICATE	For silica amorphous: Derived No Adverse Effects Level (NOAEL) in the range of 1000 mg/kg/d. In humans, synthetic amorphous silica (SAS) is essentially non-toxic by mouth, skin or eyes, and by inhalation. Epidemiology studies show little evidence of adverse health effects due to SAS. Repeated exposure (without personal protection) may cause mechanical irritation of the eye and drying/cracking of the skin. When experimental animals inhale synthetic amorphous silica (SAS) dust, it dissolves in the lung fluid and is rapidly eliminated.
TRIMETHOXYVINYLSILANE & 3-AMINOPROPYLTRIMETHOXYSILANE & N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS

E & DI-N-OCTYL TIN OXIDE & TETRAETHYL SILICATE	include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.
TRIMETHOXYVINYL SILANE & 3-AMINOPROPYLTRIMETHOXY SILANE	Low molecular weight alkoxysilane can cause irreversible lung damage when inhaled at low dose. It is not an obvious skin irritant. However, studies suggest with repeated occupational exposure, methoxysilane may cause damage to the eye and skin as well as cancer.
TRIMETHOXYVINYL SILANE & N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE & TETRAETHYL SILICATE	The material may cause skin irritation after prolonged or repeated exposure and may produce redness on contact skin, swelling, the production of vesicles, scaling and thickening of the skin.
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE & TETRAETHYL SILICATE	The material may produce severe irritation in the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
CG 20-568 ETHOXYLATED & DI-CG 20-568 ETHOXYLATED	Increase in absolute liver weight observed. No effect on microsomal protein content was noted, while a dose-dependent decrease in cytosolic protein content was observed. Decreased microsomal hydrolase activity and glutathione S-transferase activity were observed at 50 and 100 mg/kg. Dam livers showed "moderate to striking peroxisome proliferation at all investigated periods of gestation." Peroxisomes were identified as "slightly increased" or "increased." No mitochondrial changes and a slight decrease in glycogen content on GD 21 were noted. Absolute liver weight was increased. Additionally, peroxisomal fatty acid β-oxidation, lauric acid 11- and 12-hydroxylase, and catalase activities were increased at all time points. For benzotriazoles. There are several indications that the effects of phenolic benzotriazoles described in the literature might be caused by endocrine disruption, e.g. reduced concentrations of testosterone, higher concentrations of CYP 450, or higher activity of ethoxyresorufin-O-deethylase (EROD-activity). As in these cases there are also indications for toxic effects on the liver reported, the effects might actually be only secondary effects. With the present knowledge it is not possible to attribute them unambiguously as endocrine adverse effects of an equivalent level of concern. Several benzotriazole UV stabilisers showed significant human aryl hydrocarbon receptor (AhR) ligand activity. The AhR has roles in regulating immunity, stem cell maintenance, and cellular differentiation. A study indicated that certain benzotriazole UV stabilisers have the potential to accumulate and exert potent physiological effects in humans, analogous to polycyclic aromatic hydrocarbons and dioxins, which are known stable and toxic ligands. Polyethers (such as ethoxylated surfactants and polyethylene glycols) are highly susceptible to being oxidized in the air. They then form complex mixtures of oxidation products. Animal testing reveals that whole the pure, non-oxidised surfactant is non-sensitizing, many of the oxidation products are sensitizers. The oxidation products also cause irritation.
CG 20-568 ETHOXYLATED & DI-CG 20-568 ETHOXYLATED & METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDYL SEBACATE	No significant acute toxicological data identified in literature search.

Acute Toxicity	×	Carcinogenicity	×
Skin Irritation/Corrosion	×	Reproductivity	×
Serious Eye Damage/Irritation	×	STOT - Single Exposure	×
Respiratory or Skin Sensitisation	✓	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	×

Legend:

- ×** - Data either not available or does not fill the criteria for classification.
✓ - Data available to make classification.

11.2.1 Endocrine Disruption Properties

Many chemicals may mimic or interfere with the body's hormones, known as the endocrine system. Endocrine disruptors are chemicals that can interfere with endocrine (or hormonal) systems.

Endocrine disruptors interfere with the synthesis, secretion, transport, binding, action, or elimination of natural hormones in the body. Any system in the body controlled by hormones can be derailed by hormone disruptors. Specifically, endocrine disruptors may be associated with the development of learning disabilities, deformations of the body various cancers and sexual development problems.

Endocrine disrupting chemicals cause adverse effects in animals. But limited scientific information exists on potential health problems in humans. Because people are typically exposed to multiple endocrine disruptors at the same time, assessing public health effects is difficult.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Hybridbond:

End point	Test duration (Hr)	Species	Value	Source
Not available	Not available	Not available	Not available	Not available

trimethoxyvinylsilane:

End point	Test duration (Hr)	Species	Value	Source
LC50	96h	Fish	>92.2mg/l	2
EC50	72h	Algae or other aquatic plants	>89mg/l	2
EC50	48h	Crustacea	>100mg/l	2
NOEC(ECx)	48h	Crustacea	1mg/l	2

3-aminopropyltrimethoxysilane:

End point	Test duration (Hr)	Species	Value	Source
NOEC(ECx)	72h	Algae or other aquatic plants	1.3mg/l	2
LC50	96h	Fish	>100mg/l	2
EC50	72h	Algae or other aquatic plants	603mg/l	2
EC50	48h	Crustacea	>100mg/l	2

N-[3-(trimethoxysilyl)propyl]ethylenediamine:

End point	Test duration (Hr)	Species	Value	Source
NOEC(ECx)	72h	Algae or other aquatic plants	1.6mg/l	2
EC50	72h	Algae or other aquatic plants	5.5mg/l	2
LC50	96h	Fish	597mg/l	2
EC50	48h	Crustacea	81mg/l	2
EC50	96h	Algae or other aquatic plants	11mg/l	2

C7-9 branched alkyl-3,5-di-tert-butyl- 4-hydroxyhydrocinnamate:

End point	Test duration (Hr)	Species	Value	Source
EC50(ECx)	72h	Algae or other aquatic plants	<0.001mg/l	2
LC50	96h	Fish	>0.001mg/l	2
EC50	72h	Algae or other aquatic plants	<0.001mg/l	2
EC50	48h	Crustacea	>0.008mg/l	2

CG 20-568 ethoxylated:

End point	Test duration (Hr)	Species	Value	Source
Not available	Not available	Not available	Not available	Not available

di-CG 20-568 ethoxylated:

End point	Test duration (Hr)	Species	Value	Source
Not available	Not available	Not available	Not available	Not available

bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate:

End point	Test duration (Hr)	Species	Value	Source
EC0(ECx)	24h	Crustacea	<10mg/l	1
LC50	96h	Fish	0.34mg/l	1

methyl 1,2,2,6,6-pentamethyl-4-piperidylsebacate:

End point	Test duration (Hr)	Species	Value	Source
Not available	Not available	Not available	Not available	Not available

di-n-octyltin oxide:

End point	Test duration (Hr)	Species	Value	Source
EC50(ECx)	24h	Crustacea	>0.001mg/l	2
LC50	96h	Fish	>0.09mg/l	2
EC50	72h	Algae or other aquatic plants	>0.002mg/l	2
EC50	48h	Crustacea	>0.21mg/l	2

tetraethyl silicate:

End point	Test duration (Hr)	Species	Value	Source
NOEC(ECx)	72h	Algae or other aquatic plants	>=22mg/l	2
LC50	96h	Fish	>245mg/l	2
EC50	72h	Algae or other aquatic plants	>22mg/l	2
EC50	48h	Crustacea	>75mg/l	2

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data.

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.

Toxic to aquatic organisms.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites. Toxic to flora.

Toxic to soil organisms.

For Amorphous Silica: Amorphous silica is chemically and biologically inert. It is not biodegradable.

Aquatic Fate: Due to its insolubility in water, there is a separation at every filtration and sedimentation process. For Silica: Environmental Fate: Most documentation on the fate of silica in the environment concerns dissolved silica, in the aquatic environment, regardless of origin, (man-made or natural), or structure, (crystalline or amorphous).

Terrestrial Fate: Silicon makes up 25.7% of the Earth's crust, by weight, and is the second most abundant element, being exceeded only by oxygen. Silicon is not found free in nature but occurs chiefly as the oxide and as silicates. DO NOT discharge into sewer or waterways.

12.2 Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
trimethoxyvinylsilane	HIGH	HIGH
3-aminopropyltrimethoxysilane	HIGH	HIGH
N-[3-(trimethoxysilyl)propyl]ethylenediamine	HIGH	HIGH
di-n-octyltin oxide	HIGH	HIGH
tetraethyl silicate	HIGH	HIGH

12.3 Bioaccumulation potential

Ingredient	Bioaccumulation
trimethoxyvinylsilane	LOW (LogKOW = -0.3169)
3-aminopropyltrimethoxysilane	LOW (LogKOW = -1.1604)
N-[3-(trimethoxysilyl)propyl]ethylenediamine	LOW (LogKOW = -1.6744)
di-n-octyltin oxide	LOW (LogKOW = 9.259)
tetraethyl silicate	LOW (LogKOW = 0.0362)

12.4 Mobility in soil

Ingredient	Mobility
trimethoxyvinylsilane	LOW (KOC = 757.6)
3-aminopropyltrimethoxysilane	LOW (KOC = 1936)
N-[3-(trimethoxysilyl)propyl]ethylenediamine	LOW (KOC = 6856)
di-n-octyltin oxide	LOW (KOC = 202700)
tetraethyl silicate	LOW (KOC = 8766)

12.5 Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not available	Not available	Not available
PBT	✗	✗	✗
vPvB	✗	✗	✗

PBT Criteria fulfilled?	No
vPvB	No

12.6 Endocrine Disruption Properties

The evidence linking adverse effects to endocrine disruptors is more compelling in the environment than it is in humans. Endocrine disruptors profoundly alter reproductive physiology of ecosystems and ultimately impact entire populations. Some endocrine-disrupting chemicals are slow to break down in the environment. That characteristic makes them potentially hazardous over long periods of time. Some well-established adverse effects of endocrine disruptors in various wildlife species include; eggshell thinning, displayed of characteristics of the opposite sex and impaired reproductive development. Other adverse changes in wildlife species that have been suggested but not proven include; reproductive abnormalities, immune dysfunction and skeletal deformities.

12.7. Other adverse effects

Not available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / packaging disposal:	Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Recycle wherever possible or consult manufacturer for recycling options. Consult State Land Waste Authority for disposal. Bury or incinerate residue at an approved site.
Waste treatment options:	Not available.
Sewage disposal options:	Not available.

14. TRANSPORT INFORMATION

Labels required:

Marine Pollutant: No.

Hazchem: Not applicable.

Land transport (ADR):

14.1 UN number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es)	Class: Not applicable Subrisk: Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazard	Not applicable

14.6 Special precautions for user	Hazard identification (Kemler):	Not applicable
	Classification code:	Not applicable
	Hazard label:	Not applicable
	Special provisions:	Not applicable
	Limited quantity:	Not applicable
	Tunnel restriction code:	Not applicable

Air transport (ICAO-IATA/DGR):

14.1 UN number	Not applicable	
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	ICAO/IATA class:	Not applicable
	ICAO/IATA subrisk:	Not applicable
	ERG code:	Not applicable
14.4 Packing group	Not applicable	
14.5 Environmental hazard	Not applicable	
14.6 Special precautions for user	Special provisions:	Not applicable
	Cargo only packing instruction:	Not applicable
	Cargo only maximum qty/pack:	Not applicable
	Passenger and cargo packing instruction:	Not applicable
	Passenger and cargo maximum qty/pack:	Not applicable
	Passenger and cargo limited qty packing instructions:	Not applicable
	Passenger and cargo limited maximum qty/pack:	Not applicable

Sea transport (IMDG-Code/GGVSee):

14.1 UN number	Not applicable	
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	IMDG class:	Not applicable
	IMDG subrisk:	Not applicable
14.4 Packing group	Not applicable	
14.5 Environmental hazard	Not applicable	
14.6 Special precautions for user	EMS number:	Not applicable
	Special provisions:	Not applicable
	Limited quantities:	Not applicable

Inland waterways transport (ADN):

14.1 UN number	Not applicable	
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	Class:	Not applicable
	Subrisk:	Not applicable
14.4 Packing group	Not applicable	
14.5 Environmental hazard	Not applicable	
14.6 Special precautions for user	Classification code:	Not applicable
	Special provisions:	Not applicable
	Limited quantity:	Not applicable
	Equipment required:	Not applicable
	Fire cones numbers:	Not applicable

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

Not applicable.

14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product Name	Group
trimethoxyvinylsilane	Not Available
3-aminopropyltrimethoxysilane	Not Available
N-[3-(trimethoxysilyl)propyl]ethylenediamine	Not Available
C7-9 branched alkyl-3,5-di-tert-butyl- 4-hydroxyhydrocinnamate	Not Available
CG 20-568 ethoxylated	Not Available
di-CG 20-568 ethoxylated	Not Available
bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate	Not Available
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Not Available
di-n-octyltin oxide	Not Available
tetraethyl silicate	Not Available

14.9. Transport in bulk in accordance with the ICG Code

Product Name	Ship Type
trimethoxyvinylsilane	Not Available
3-aminopropyltrimethoxysilane	Not Available
N-[3-(trimethoxysilyl)propyl]ethylenediamine	Not Available
C7-9 branched alkyl-3,5-di-tert-butyl- 4-hydroxyhydrocinnamate	Not Available
CG 20-568 ethoxylated	Not Available
di-CG 20-568 ethoxylated	Not Available
bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate	Not Available
methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Not Available
di-n-octyltin oxide	Not Available
tetraethyl silicate	Not Available

15. REGULATORY INFORMATION

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

trimethoxyvinylsilane is found on the following regulatory lists:

EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

3-aminopropyltrimethoxysilane is found on the following regulatory lists:

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

N-[3-(trimethoxysilyl)propyl]ethylenediamine is found on the following regulatory lists:

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate is found on the following regulatory lists:

Europe EC Inventory
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

CG 20-568 ethoxylated is found on the following regulatory lists:

Not applicable

di-CG 20-568 ethoxylated is found on the following regulatory lists:

Not applicable

bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate is found on the following regulatory lists:

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate is found on the following regulatory lists:

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

di-n-octyltin oxide is found on the following regulatory lists:

Chemical Footprint Project - Chemicals of High Concern List
EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

tetraethyl silicate is found on the following regulatory lists:

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

ECHA summary:

Ingredient	CAS number	Index No	ECHA Dossier
trimethoxyvinylsilane	2768-02-7	Not available	Not available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Eye Dam. 1	GHS05; Dgr	H318
2	Acute Tox. 4; Eye Dam. 1; Skin Irrit. 2; STOT SE 3; Flam. Liq. 2; STOT SE 3; STOT RE 2; Aquatic Acute 1; STOT SE 3; STOT RE 2	GHS02; Dgr; GHS05; GHS03; GHS08; GHS09	H332; H318; H315; H335; H225; H373; H400; H351; H317
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
3-aminopropyltrimethoxysilane	13822-56-5	Not available	Not available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Corr. 1B; Eye Irrit. 2	GHS05; Dgr	H314; H319
2	Eye Dam. 1; Flam. Liq. 3; STOT SE 3; STOT SE 3; Aquatic Chronic 4	GHS05; Dgr; GHS02; GHS08	H318; H314; H226; H360; H335; H413
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
N-[3-(trimethoxysilyl)propyl]ethylenediamine	1760-24-3	Not available	Not available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Not Classified	Not Available	Not Available
2	Eye Dam. 1; Acute Tox. 4; STOT RE 2; STOT SE 3; Acute Tox. 4; STOT RE 2; Aquatic Chronic 2; STOT SE 3; STOT RE 2; STOT RE 2; Eye Irrit. 2	GHS08; GHS05; Dgr; GHS09	H317; H318; H332; H373; H335; H302; H314; H411
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
C7-9 branched alkyl-3,5-di- tert-butyl-4-hydroxyhydrocinnamate	125643-61-0	607-530-00-7	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Aquatic Chronic 4		H413
2	Aquatic Chronic 4		H413
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

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Ingredient	CAS number	Index No	ECHA Dossier
CG 20-568 ethoxylated	104810-48-2	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Sens. 1; Aquatic Chronic 2	GHS09; GHS07; Wng	H317; H411
2	Repr. 2; Aquatic Acute 1; Aquatic Chronic 1; STOT RE 1	GHS09; GHS08; Dgr	H317; H361; H400; H410; H372
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
di-CG 20-568 ethoxylated	104810-47-1	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Sens. 1; Aquatic Chronic 2	GHS09; GHS07; Wng	H317; H411
2	Aquatic Chronic 2; Repr. 2	GHS09; Wng; GHS08	H317; H411; H361
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
bis(1,2,2,6,6-pentamethyl- 4-piperidyl)sebacate	41556-26-7	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 1	GHS09; GHS07; Wng	H317; H400; H410
2	Aquatic Acute 1; Aquatic Chronic 1; Eye Dam. 1; Skin Irrit. 2	GHS09; GHS05; Dgr; GHS02	H317; H400; H410; H318; H315
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
methyl 1,2,2,6,6-pentamethyl- 4-piperidyl sebacate	82919-37-7	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 1	GHS09; GHS07; Wng	H317; H410
2	Aquatic Acute 1; Aquatic Chronic 1	GHS09; GHS07; Wng; GHS02	H317; H410; H400
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
di-n-octyltin oxide	870-08-6	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Repr. 2; STOT RE 1; Aquatic Chronic 1	GHS09; GHS08; Dgr	H361; H372; H410
2	STOT SE 2; Repr. 2; STOT RE 1; Aquatic Chronic 1; Repr. 2; STOT RE 1; Repr. 2; STOT RE 1; STOT RE 1; STOT SE 2; Repr. 2; STOT RE 1; Repr. 2; STOT SE 2	GHS08; GHS09; Dgr	H371; H361; H372; H410; H361d; H312; H315; H319; H332; H335
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
tetraethyl silicate	78-10-4	014-005-00-0	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1			
2			
1	Not Classified	Not Available	Not Available
2	Flam. Liq. 3	GHS02; Wng	H226
1	Flam. Liq. 3; Eye Irrit. 2; Acute Tox. 4; STOT SE 3	GHS02; GHS07; Wng	H226; H319; H332; H335
2	Flam. Liq. 3; Eye Irrit. 2; Acute Tox. 4; STOT SE 3; STOT SE 3; STOT SE 3; Skin Irrit. 2; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 3; STOT SE 1; STOT RE 2; STOT SE 3; STOT SE 3; Acute Tox. 4	GHS08; Dgr; GHS01	H226; H319; H332; H335; H373; H370; H315; H302
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

National Inventory Status

National Inventory	Status
Europe - EINEC / ELINCS / NLP	No (C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; CG 20-568 ethoxylated; di-CG 20-568 ethoxylated)
Legend:	Yes = All CAS declared ingredients are on the inventory. No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets).

16. OTHER INFORMATION

Full text risk and hazard codes:

H225: Highly flammable liquid and vapour.
H226: Flammable liquid and vapour.
H261: In contact with water releases flammable gases.
H302: Harmful if swallowed.
H302+H312+H332: Harmful if swallowed, in contact with skin or if inhaled.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335: May cause respiratory irritation.
H351: Suspected of causing cancer.
H360: May damage fertility or the unborn child.
H360F: May damage fertility.
H36: Suspected of damaging fertility or the unborn child.
H361d: Suspected of damaging the unborn child.
H370: Causes damage to organs.
H371: May cause damage to organs.
H372: Causes damage to organs through prolonged or repeated exposure.
H373: May cause damage to organs through prolonged or repeated exposure.
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.
H413: May cause long lasting harmful effects to aquatic life.

SDS Version summary:

Version	Date of Update	Section Updated
1.0	09/05/2024	Template Change

Other information:

Classification of the preparation and its individual components have drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection.
EN 340 Protective clothing.
EN 374 Protective gloves against chemicals and micro-organisms.
EN 13832 Footwear protecting against chemicals.
EN 133 Respiratory protective devices.

Definitions and abbreviations:

PC—TWA: Permissible Concentration-Time Weighted Average.
PC—STEL: Permissible Concentration-Short Term Exposure Limit.
IARC: International Agency for Research on Cancer.
ACGIH: American Conference of Governmental Industrial Hygienists.
STEL: Short Term Exposure Limit.
TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations.
ES: Exposure Standard.
OSF: Odour Safety Factor.
NOAEL :No Observed Adverse Effect Level.
LOAEL: Lowest Observed Adverse Effect Level.
TLV: Threshold Limit Value.
LOD: Limit Of Detection.
OTV: Odour Threshold Value.
BCF: BioConcentration Factors.

BEI: Biological Exposure Index.
AIIIC: Australian Inventory of Industrial Chemicals.
DSL: Domestic Substances List.
NDSL: Non-Domestic Substances List.
IECSC: Inventory of Existing Chemical Substance in China.
EINECS: European Inventory of Existing Commercial chemical Substances.
ELINCS: European List of Notified Chemical Substances.
NLP: No-Longer Polymers.
ENCS: Existing and New Chemical Substances Inventory.
KECI: Korea Existing Chemicals Inventory.
NZIoC: New Zealand Inventory of Chemicals.
PICCS: Philippine Inventory of Chemicals and Chemical Substances.
TSCA: Toxic Substances Control Act.
TCSI: Taiwan Chemical Substance Inventory.
INSQ: Inventario Nacional de Sustancias Químicas.
NCI: National Chemical Inventory.
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances.

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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