

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

1.1 Product identifier

Trade name/designation: Caltech Fibreforce.

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

Main use category: Industrial uses.

1.3 Manufacturer/Supplier

Supplier:
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 Manufacturer/Supplier

Emergency telephone: 01744 648 400 - (Mon-Thurs – 08.30-17.00 Fri – 08.30-16.00)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Skin Irrit. 2, H315 : Eye Irrit. 2, H319 : Skin Sens. 1, H317 : Aquatic Chronic 3, H412.

Ingredients of unknown toxicity:

See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Labelling according to Regulation (EU) 1272/2008

Hazard pictures:



Signal word: Warning.

Hazard statements:
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.

Precautionary statements:

General: Not applicable.

Prevention:
P261: Avoid breathing vapour.
P280: Wear protective gloves and eye protection:
- nitrile rubber gloves and Safety glasses with side shields.
P273: Avoid release to the environment.

Response:
P302: IF ON SKIN:
P352: Wash with plenty of soap and water.
P333: If skin irritation or rash occurs:
P313: Get medical attention.

| | |
|------------------------------|--|
| Storage: | Not applicable. |
| Disposal: | P501: Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| Hazardous ingredients: | Aromatic Polyisocyanate Prepolymer N.O.S.; 1,6-Hexanediyl-Bis(2-(2-(1-Ethylpentyl)-3-Oxazolidinyl)Ethyl)Carbamate; 3-Isocyanatomethyl-3,5,5-Trimethylcyclohexyl Isocyanate, Oligomers. |
| Supplemental label elements: | Contains isocyanates. May produce an allergic reaction. |

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Not applicable.

UFI Code:

3CVU-45UY-9998-TS2T.

Special packaging requirements:

Not applicable.

2.3 Other hazards

None known.

3. COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

3.1 Substances

Modified urethane resin with integral chopped fibre.
Stripe coat to lap joints, edges, bolt heads, cut ends, sharp angles.

3.1 Mixture

| Product/ingredient name | Identifiers | % | Classification Regulation (EC) No. 1272/2008 [CLP] | Type |
|--|---|-----------|---|---------|
| Aromatic Polyisocyanate Prepolymer N.O.S. | CAS: - | ≥10 - ≤25 | Skin Sens. 1, H317 | [1] |
| 1,6-Hexanediyl-Bis(2-(2-(1-Ethylpentyl)-3-Oxazolidinyl)Ethyl)Carbamate | EC: 411-700-4 CAS: 140921-24-0 Index: 616-079-00-5 | ≤10 | Skin Sens. 1, H317 | [1] |
| 3-Isocyanatomethyl-3,5,5-Trimethylcyclohexyl Isocyanate, Oligomers | EC: 500-125-5 CAS: 53880-05-0 | ≤5 | Skin Sens. 1, H317 | [1] |
| 2-Ethylhexyl (3-Isocyanatomethylphenyl)-Carbamate | EC: 261-180-6 CAS: 58240-57-6 | ≤5 | Skin Irrit. 2, H315 | [1] |
| Propylene Carbonate | EC: 203-572-1 CAS: 108-32-7 Index: 607-194-00-1 | ≤5 | Eye Irrit. 2, H319 | [1] |
| Bis(Isopropyl) Naphthalene | REACH #: 01-2119565150-48 EC: 254-052-6 CAS: 38640-62-9 | ≤3 | Asp. Tox. 1, H304 Aquatic Chronic 1, H410 (M=1) | [1] |
| Oxazolidine, 3-Butyl-2-(1-Ethylpentyl)- | EC: 425-660-0 CAS: 165101-57-5 | ≤3 | Skin Corr. 1B, H314 Eye Dam. 1, H318 | [1] |
| Xylene (Mixture Of Isomers) | REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 | ≤3 | Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 | [1] [2] |

Our company policy is one of continuous research and development; we therefore reserve the right to amend content herein without prior notice.

| | | | | |
|---|---|------|--|---------|
| 2-Methoxy-1-MethylethylAcetate | REACH #: 01-2119475791-29 EC: 203-603-9 CAS: 108-65-6 Index: 607-195-00-7 | ≤3 | STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304 Flam. Liq. 3, H226 STOT SE 3, H336 | [1] [2] |
| Reaction Product Of N, N'-Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) (12-Hydroxy-N-[2-(1-Oxyhexyl)Amino]Ethyl]Octadecanamide and N,N'-Ethane-1,2-Diylbis(Hexanamide) | REACH #: 01-0000017860-69 EC: 432-430-3 CAS: - Index: 616-200-00-1 | ≤0,3 | Skin Sens. 1, H317 Aquatic Chronic 4, H413 | [1] |
| Tris(2-Methoxyethoxy)Vinylsilane | EC: 213-934-0 CAS: 1067-53-4 | ≤0,3 | Repr. 2, H361f (Fertility) See Section 16 for the full text of the H statements declared above. | [1] |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type:

- [1] Substance classified with a health or environmental hazard.
- [2] Substance with a workplace exposure limit.
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII.
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.
- [5] Substance of equivalent concern.
- [6] Additional disclosure due to company policy.

Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

4.1 Description of first aid measures

| | |
|-----------------------------|---|
| General: | In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice. |
| Eye contact: | Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice. |
| Inhalation: | Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. |
| Skin contact: | Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners. |
| Ingestion: | Rinse mouth. If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting. |
| Protection of first aiders: | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitisation of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitised persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains aromatic polyisocyanate prepolymer n.o.s., 1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl) ethyl) carbamate, 3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers, reaction product of N,N'-ethane-1, 2-diylbis(12-hydroxyoctadecanamide) 12-hydroxy-N-[2-[[1-oxylhexyl]amino]ethyl]octadecanamide and N,N'-ethane-1, 2-diylbis(hexanamide). May produce an allergic reaction.

Over exposure signs/symptoms:

| | |
|---------------|--|
| Eye contact: | Adverse symptoms may include the following: <ul style="list-style-type: none">- pain or irritation.- watering.- redness. |
| Inhalation: | No specific data. |
| Skin contact: | Adverse symptoms may include the following: Irritation / redness. |
| Ingestion: | No specific data. |

4.3 Indication of any immediate medical attention and special treatment needed

Notes to doctor:

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatment:

No specific treatment.

See toxicological information (Section 11).

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Recommended: alcohol-resistant foam, CO₂, powders, water spray or mist.

Unsuitable extinguishing media:

Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture:

In a fire or if heated, a pressure increase will occur and the container may burst.

This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products:

Decomposition products may include the following materials:

- carbon dioxide.
- carbon monoxide.
- nitrogen oxides.
- sulfur oxides.
- halogenated compounds.
- metal oxide/oxides.

5.3 Advice for fire-fighters

Special protective actions for fire-fighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training.

Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders:

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill:

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill:

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Care should be taken when re-opening partly-used containers. Keep away from heat, sparks and flame. No sparking tools should be used.

Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

Put on appropriate personal protective equipment (see Section 8). Never use pressure to empty. Container is not a pressure vessel.

Always keep in containers made from the same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or watercourses.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.

Notes on joint storage

Keep away from: oxidising agents, strong alkalis, strong acids.

Additional information on storage conditions:

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

No data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits:

| Product/ingredient name | Exposure limit values |
|---------------------------------|--|
| Xylene (Mixture of Isomeres) | EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 441 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 220 mg/m ³ 8 hours. TWA: 50 ppm 8 hours. |
| 2-Methoxy-1-Methylethyl Acetate | EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 548 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 274 mg/m ³ 8 hours. TWA: 50 ppm 8 hours. |

Recommended monitoring procedure:

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs:

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|---------------------------|------|----------------------|-----------------------|------------|---------|
| Bis(Isopropyl)Naphthalene | DNEL | Long term oral | 2,1 mg/kg bw/day | Consumers | - |
| | DNEL | Long term dermal | 2,1 mg/kg bw/day | Consumers | - |
| | DNEL | Long term inhalation | 7,4 mg/m ³ | Consumers | - |
| | DNEL | Long term dermal | 4,3 mg/kg | Workers | - |

| | | | bw/day | | |
|---------------------------------|------|-----------------------|-------------------------|-----------|----------|
| Xylene (Mixture of Isomers) | DNEL | Long term inhalation | 30 mg/m ³ | Workers | - |
| | DNEL | Short term inhalation | 289 mg/m ³ | Workers | Local |
| | DNEL | Short term inhalation | 289 mg/m ³ | Workers | Systemic |
| | DNEL | Long term inhalation | 77 mg/m ³ | Workers | Systemic |
| | DNEL | Long term dermal | 180 mg/m ³ | Workers | Systemic |
| | DNEL | Short term inhalation | 174 mg/m ³ | Consumers | Local |
| | DNEL | Short term inhalation | 174 mg/m ³ | Consumers | Systemic |
| | DNEL | Long term inhalation | 14,8 mg/m ³ | Consumers | Systemic |
| 2-Methoxy-1-Methylethyl Acetate | DNEL | Long term dermal | 108 mg/m ³ | Consumers | Systemic |
| | DNEL | Long term inhalation | 275 mg/m ³ | Workers | Systemic |
| | DNEL | Long term dermal | 153,5 mg/m ³ | Workers | Systemic |
| | DNEL | Long term dermal | 54,8 mg/m ³ | Consumers | Systemic |
| | DNEL | Long term oral | 1,67 mg/m ³ | Consumers | Systemic |

PNECs:

| Product/ingredient name | Compartment detail | Value | Method detail |
|--|------------------------|-----------------|---------------|
| Bis(Isopropyl)Naphthalene | Sewage treatment plant | 0,15 mg/l | - |
| | Fresh water | 0,26 µg/l | - |
| | Marine | 0,026 µg/l | - |
| | Fresh water sediment | 0,94 mg/kg dwt | - |
| | Marine water sediment | 0,094 mg/kg dwt | - |
| Xylene (Mixture of Isomers) | Soil | 0,19 mg/kg dwt | - |
| | Fresh water | 0,327 mg/l | - |
| | Marine water | 0,327 mg/l | - |
| | Fresh water sediment | 12,46 mg/kg | - |
| | Marine water sediment | 12,46 mg/kg | - |
| 2-Methoxy-1-Methylethyl Acetate | Soil | 2,31 mg/kg | - |
| | Sewage treatment plant | 6,58 mg/l | - |
| | Fresh water | 0,635 mg/l | - |
| | Fresh water sediment | 3,29 mg/kg | - |
| | Marine water sediment | 0,329 mg/kg | - |
| Reaction product of N,N'-Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) 12-Hydroxy-N-[2-[(1-Oxyhexyl)Amino]Ethyl]Octadecanamide and N,N'-Ethane-1,2-Diylbis(Hexanamide) | Soil | 0,29 mg/kg | - |
| | Sewage treatment plant | 100 mg/l | - |
| | Fresh water | 0,085 mg/l | - |

8.2 Exposure controls

Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. Air-fed protective respiratory equipment must be worn by the spray operator, even when good ventilation is provided. In other operations, if local exhaust ventilation and good general extraction are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn. (See Occupational exposure controls).

Individual protection measures:

Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: safety glasses with side-shields. (EN 166)

Skin protection:

Hand protection: There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. The breakthrough time must be greater than the end use time of the product. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves: For prolonged or repeated handling, use the following types of gloves:
- Recommended: > 8 hours (breakthrough time): nitrile rubber (0.5mm) gloves. The recommendation for the type or types of glove to use when handling this product is based on information from the following source:
- EN 374. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear overalls or long sleeved shirt. (EN 467)

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: organic vapour (Type A) and particulate filter (EN 141)

Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:

| | |
|--|--------------------|
| Physical state: | Liquid. |
| Colour: | Not available. |
| Odour: | Not available. |
| Odour threshold: | Not available. |
| pH: | Not applicable. |
| Melting point / freezing point: | Not available. |
| Initial boiling point & boiling range: | Not available. |
| Flash point: | Closed cup: 102°C. |
| Evaporation rate: | Not available. |
| Flammability (solid, gas): | Not available. |

Upper/lower flammability or exposure limit: Not available.
 Vapour pressure: Not available.
 Vapour density: Not available.
 Relative density: 1,42.
 Solubility(ies): Insoluble in the following materials: cold & hot water.
 Partition co-efficient n-octanol/water: Not available.
 Auto-ignition temperature: Not available.
 Decomposition temperature: Not available.
 Viscosity: Dynamic (room temperature): 15000 mPa's.
 Explosive properties: Non-explosive in the presence of the following materials or conditions:
 open flames, sparks and static discharge and heat.
 Oxidising properties: Not available.

9.2 Other information

No additional information.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

Stable under recommended storage and handling conditions (see Section 7).

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

In a fire, hazardous decomposition products may be produced.

10.5 Incompatible materials

Keep away from: oxidising agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|---------------------------------|---------|-------------|----------|
| Aromatic Polyisocyanate | LD50 oral | Rat | >5000 mg/kg | - |
| Prepolymer N.O.S. | | | | |
| 3-Isocyanatomethyl-3,5,5-Trimethylcyclohexyl Isocyanate, Oligomers | LC50 inhalation dusts and mists | Rat | >5,01 mg/l | 4 hours |
| | LD50 oral | Rat | >5000 mg/kg | - |
| Propylene Carbonate | LD50 oral | Rat | >5000 mg/kg | - |
| Bis(Isopropyl)Naphthalene | LC50 inhalation vapour | Rat | 5,64 mg/l | 4 hours |
| | LD50 dermal | Rat | >4500 mg/kg | - |
| | LD50 oral | Rat | >4000 mg/kg | - |
| Xylene (Mixture of Isomeres) | LC50 inhalation gas | Rat | 5000 ppm | 4 hours |
| | LC50 inhalation gas | Rat | 6670 ppm | 4 hours |
| | LD50 oral | Rat | 4300 mg/kg | - |

| | | | | |
|--|------------------------|--------|-------------|---------|
| 2-Methoxy-1-Methylethyl Acetate | TDL0 dermal | Rabbit | 4300 mg/kg | - |
| | LC50 inhalation vapour | Rat | 4345 mg/l | 6 hours |
| Reaction product of N,N'-Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) 12-Hydroxy-N-[2-[(1-Oxyhexyl)Amino]Ethyl] Octadecanamide And N,N'-Ethane-1,2-Diylbis (Hexanamide) | LD50 dermal | Rabbit | >5 g/kg | - |
| | LD50 oral | Rat | 8532 mg/kg | - |
| | LD50 dermal | Rat | >2000 mg/kg | - |
| Tris(2-Methoxyethoxy) Vinylsilane | LD50 oral | Rat | >2000 mg/kg | - |
| | LD50 oral | Rat | 2960 mg/kg | - |

Conclusion/summary:

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

Acute toxicity estimates:

Not available.

Irritation/corrosion:

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--|--------------------------|---------|-------|-----------------------------|-------------|
| 3-Isocyanatomethyl-3,5,5-Trimethylcyclohexyl Isocyanate, Oligomers | Skin - Oedema | Rabbit | 0 | - | - |
| | Eyes - Cornea opacity | Rabbit | 1 | - | - |
| 2-Ethylhexyl (3-Isocyanatomethylphenyl)-Carbamate | Eyes - Severe irritant | Rabbit | - | 24 hours 100 microliters | - |
| | Propylene Carbonate | Rabbit | - | 60 milligrams | - |
| Bis(Isopropyl)Naphthalene | Skin - Moderate irritant | Human | - | 72 hours 100 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | Intermittent 500 milligrams | - |
| | Skin - Oedema | Rabbit | 0 | - | - |
| Xylene (Mixture Of Isomers) | Eyes - Cornea opacity | Rabbit | 0 | - | - |
| | Eyes - Mild irritant | Rabbit | - | 87 milligrams | - |
| | Eyes - Severe irritant | Rabbit | - | 24 hours 5 milligrams | - |
| | Skin - Mild irritant | Rat | - | 8 hours 60 microliters | - |
| Tris(2-Methoxyethoxy) Vinylsilane | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 100 Percent | - |
| | Skin - Mild irritant | Rabbit | - | 500 milligrams | - |

Conclusion/summary:

Skin: Causes skin irritation.
Eyes: Causes serious eye irritation.
Respiratory: Based on available data, the classification criteria are not met.

Sensitisation:

| Product/ingredient name | Route of exposure | Species | Result |
|---|-------------------|------------|-----------------|
| 3-Isocyanatomethyl-3,5,5-Trimethylcyclohexyl Isocyanate, Oligomers | Skin | Rabbit | Sensitising |
| Bis(Isopropyl)Naphthalene | Skin | Guinea pig | Not sensitising |
| Reaction product of N,N'-Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) 12-Hydroxy-N-[2-(1-Oxyhexyl)Amino]Ethyl] Octadecanamide and N,N'-Ethane-1,2-Diylbis (Hexanamide) | Skin | Mouse | Sensitising |

Conclusion/summary:

Skin: Causes skin irritation.
Respiratory: Based on available data, the classification criteria are not met.

Mutagenicity:

| Product/ingredient name | Test | Experiment | Result |
|---|--------------|---|----------|
| 3-Isocyanatomethyl-3,5,5-Trimethylcyclohexyl Isocyanate, Oligomers | OECD 471 | Experiment: In vitro Subject: Bacteria | Negative |
| | OECD 473 | Experiment: In vitro Subject: Mammalian-animal | Negative |
| Bis(Isopropyl)Naphthalene | OECD 471 | Experiment: In vitro Subject: Bacteria | Negative |
| | OECD 473+476 | Experiment: In vitro Subject: Mammalian-animal | Negative |
| Reaction product of N,N'-Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) 12-Hydroxy-N-[2-(1-Oxyhexyl)Amino]Ethyl] Octadecanamide And N,N'-Ethane-1,2-Diylbis (Hexanamide) | OECD 471 | Experiment: In vitro Subject: Bacteria | Negative |

Conclusion/summary:

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

Carcinogenicity:

| Product/ingredient name | Result | Species | Dose | Exposure |
|---------------------------|--|---------|------|----------|
| Bis(Isopropyl)Naphthalene | Negative - Route of exposure unreported - TD | Rat | - | - |

Conclusion/summary:

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

Reproductive toxicity:

Conclusion/summary:

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

Teratogenicity:

Conclusion/summary:

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

Specific target organ toxicity (single exposure):

| Product/ingredient name | Category | Route of exposure | Target organs |
|---------------------------------|------------|-------------------|------------------------------|
| Xylene (Mixture of Isomers) | Category 3 | Not applicable | Respiratory tract irritation |
| 2-Methoxy-1-Methylethyl Acetate | Category 3 | Not applicable | |

Specific target organ toxicity (repeated exposure):

| Product/ingredient name | Category | Route of exposure | Target organs |
|-----------------------------|------------|-------------------|----------------|
| Xylene (Mixture of Isomers) | Category 2 | Not determined | Not determined |

Aspiration hazard:

| Product/ingredient name | Result |
|---|--|
| Bis(Isopropyl)Naphthalene Xylene (Mixture of Isomers) | ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 |

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

Short term exposure:

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure:

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects:

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|--|------------|-------------------------|--------------------------------------|
| Bis(Isopropyl)Naphthalene Reaction Product Of N,N'-Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) 12-Hydroxy-N-[2-(1-Oxyhexyl)Amino]Ethyl] Octadecanamide and N,N'-Ethane-1,2-Diylbis (Hexanamide) | Chronic NOAEL oral Chronic NOAEL oral | Rat Rat | 170 mg/kg 1000 mg/kg | 6 months 28 days; 7 days per week |

Conclusion/summary:

General: Based on available data, the classification criteria are not met. Once sensitised, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity:

No known significant effects or critical hazards.

Mutagenicity:

No known significant effects or critical hazards.

Teratogenicity:

No known significant effects or critical hazards.

Development effects:

No known significant effects or critical hazards.

Fertility effects:

No known significant effects or critical hazards.

Other information: Not available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

There are no data available on the mixture itself. Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

| Product/ingredient name | Result | Species | Exposure |
|---|--|---|---|
| Aromatic Polyisocyanate Prepolymer N.O.S. | Acute EC50 >10000 mg/l | Bacteria | 10 minutes |
| Bis(Isopropyl)Naphthalene | Acute EC10 >0,15 mg/l Acute EC10 >0,16 mg/l Acute LC10 >0,5 mg/l Acute NOEC >0,013 mg/l | Algae Daphnia spec Fish Daphnia spec Daphnia spec | 72 hours 48 hours 96 hours 21 days 48 hours |
| Oxazolidine, 3-Butyl-2- (1-Ethylpentyl)- | Acute EC50 1,1 mg/l | Daphnia spec | 48 hours |
| 2-Methoxy-1-Methylethyl Acetate | Acute IC50 5,6 mg/l Acute LC50 20 mg/l Acute EC50 408 to 500 mg/l | Algae Fish Daphnia spec | 72 hours 96 hours 48 hours |
| Reaction product of N,N'- Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) | Acute LC50 161 mg/l Acute LC50 100 to 180 mg/l Acute EC50 >1000 mg/l | Fish Fish Daphnia spec | 96 hours 96 hours 48 hours |
| 12-Hydroxy-N-[2- (1-Oxyhexyl)Amino]Ethyl] Octadecanamide and N,N'- Ethane-1,2-Diylbis (Hexanamide) | Acute LC50 >1000 mg/l | Fish | 96 hours |

Conclusion:

Harmful to aquatic life with long lasting effects.

12.2 Persistence & degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|--|------|-------------------------------|------|----------|
| Xylene (Mixture of Isomeres) | - | 90 % - Readily- 5 days | - | - |
| Reaction product of N,N'- Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) | - | <70 % - Not readily - 28 days | - | - |
| 12-Hydroxy-N-[2- (1-Oxyhexyl)Amino]Ethyl] Octadecanamide and N,N'- Ethane-1,2-Diylbis (Hexanamide) | - | - | - | - |

Conclusion/summary:

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

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|----------------------------|-------------------|------------------|
| Bis(Isopropyl)Naphthalene | Fresh water 2,5 days, 20°C | >70%; < 28 day(s) | Readily |
| Xylene (Mixture of Isomeres) | - | - | Readily |
| 2-Methoxy-1-Methylethyl Acetate | - | - | Readily |
| Reaction Product of N,N'- Ethane-1,2-Diylbis (12-Hydroxyoctadecanamide) | - | - | Not readily |
| 12-Hydroxy-N-[2- (1-Oxyhexyl)Amino]Ethyl] Octadecanamide And N,N'- Ethane-1,2-Diylbis (Hexanamide) | - | - | - |

12.3 Bioaccumulative potential

| Product/ingredient name | LogPow | BCF | Potential |
|--|--------|--------------|-----------|
| 2-Ethylhexyl (3-Isocyanatomethylphenyl)- Carbamate | 5,6 | - | High |
| Propylene Carbonate | -0,41 | - | Low |
| Bis(Isopropyl)Naphthalene | 6,081 | 1800 to 6400 | High |
| Xylene (Mixture of Isomeres) | 3,12 | 8.1 to 25.9 | Low |
| 2-Methoxy-1-Methylethyl Acetate | 1,2 | - | Low |
| Tris(2-Methoxyethoxy) | 0,26 | - | Low |
| Vinylsilane | | | |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}):

Not available.

Mobility:

Not available

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product:

Methods of disposal:

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non- recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste:

Yes.

Disposal considerations:

Do not allow to enter drains or watercourses. Residues in empty containers should be neutralised with a decontaminant (see section 6).
Dispose of according to all federal, state and local applicable regulations.
If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

For further information, contact your local waste authority.

European waste catalogue (EWC):

The European Waste Catalogue classification of this product, when disposed of as waste, is:

| Waste code | Waste designation |
|------------|---|
| 08 01 11* | waste paint and varnish containing organic solvents or other hazardous substances |

Packaging:

Method of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Disposal considerations: Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORT INFORMATION

| | ADR/RID | ADN | IMDG | IATA |
|--|---------------|---------------|---------------|---------------|
| 14.1 UN number | Not regulated | Not regulated | Not regulated | Not regulated |
| 14.2 UN proper shipping name | - | - | - | - |
| 14.3 Transport hazard class(es) | - | - | - | - |
| 14.4 Packing group | - | - | - | - |
| 14.5 Environmental hazards | No | No | No | No |
| Additional information | - | - | - | - |

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

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

EU Regulation (EC) No. 1907/2006 (REACH):

Annex XIV - List of substances subject to authorisation Annex XIV:

None of the components are listed.

Substances of very high concern:

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Not applicable.

Other EU Regulations:

VOC: The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

VOC for ready use mixture: 2004/42/EC - II A/j: 500g/l (2010). ≤ 160g/lVOC.

Europe inventory: Not determined.

Black list chemicals: (76/464/EEC).

| Product/ingredient name | Carcinogenic effects | Mutagenic effects | Developmental effects | Fertility effects |
|-----------------------------------|----------------------|-------------------|-----------------------|----------------------------|
| Tris(2-Methoxyethoxy) Vinylsilane | - | - | - | Repr. 2, H361f (Fertility) |

Ozone depleting substances (1005/2009/EU):

Not listed.

Prior Informed Consent (PIC) (649/2012/EU):

Not listed.

Seveso directive:

This product is controlled under the Seveso Directive.

National regulations:

Industrial use: The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

References: EH40/2005 Workplace exposure limits.
Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No.2016/918.

International regulations:

Chemical Weapon Convention List Schedules I, II & III Chemicals:

Not listed.

Montreal Protocol (Annexes A, B, C, E):

Not listed.

Stockholm Convention on Persistent Organic Pollutants:

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC):

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals:

Not listed.

CN code:

3208 90 91

International lists:

National inventory:

| | |
|--------------------|---|
| Australia: | At least one component is not listed. |
| Canada: | Not determined. |
| China: | Not determined. |
| Japan: | Japan inventory (ENCS): Not determined. Japan inventory (ISHL) : Not determined. |
| Malaysia: | Not determined. |
| New Zealand: | Not determined. |
| Philippines: | Not determined. |
| Republic of Korea: | Not determined. |
| Taiwan: | Not determined. |
| Turkey: | Not determined. |
| United States: | Not determined. |

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out.

16. OTHER INFORMATION

Abbreviations & acronyms:

| | |
|----------------|---|
| ATE: | Acute Toxicity Estimate. |
| CLP: | Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]. |
| DMEL: | Derived Minimal Effect Level. |
| DNEL: | Derived No Effect Level. |
| EUH statement: | CLP-specific Hazard statement. |
| PBT: | Persistent, Bioaccumulative and Toxic. |
| PNEC: | Predicted No Effect Concentration. |
| RRN: | REACH Registration Number. |
| vPvB: | Very Persistent and Very Bioaccumulative. |

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]:

| Classification | Justification |
|-------------------------|-----------------|
| Skin Irrit. 2, H315 | Expert judgment |
| Eye Irrit. 2, H319 | Expert judgment |
| Skin Sens. 1, H317 | Expert judgment |
| Aquatic Chronic 1, H412 | Expert judgment |

Full text of H-phrases referred to in sections 2 and 3:

| | |
|--------|--|
| H226: | Flammable liquid and vapour. |
| H304: | May be fatal if swallowed and enters airways. |
| H312: | Harmful in contact with skin. |
| H314: | Causes severe skin burns and eye damage. |
| H315: | Causes skin irritation. |
| H317: | May cause an allergic skinreaction. |
| H318: | Causes serious eye damage. |
| H319: | Causes serious eye irritation. |
| H332: | Harmful if inhaled. |
| H335: | May cause respiratory irritation. |
| H336: | May cause drowsiness or dizziness. |
| H361f: | Suspected of damaging fertility. |
| H373: | May cause damage to organs through prolonged or repeated exposure. |
| H410: | Very 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. |

Full text of classifications (CLP/GHS):

| | |
|--------------------------|---|
| Acute Tox. 4, H312: | ACUTE TOXICITY (dermal) - Category 4. |
| Acute Tox. 4, H332: | ACUTE TOXICITY (inhalation) - Category 4. |
| Aquatic Chronic 1, H410: | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1. |
| Aquatic Chronic 3, H412: | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3. |
| Aquatic Chronic 4, H413: | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 4. |
| Asp. Tox. 1, H304: | ASPIRATION HAZARD - Category 1. |
| Eye Dam. 1, H318: | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1. |
| Eye Irrit. 2, H319: | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2. |
| Flam. Liq. 3, H226: | FLAMMABLE LIQUIDS - Category 3. |
| Repr. 2, H361f: | REPRODUCTIVE TOXICITY (Fertility) - Category 2. |
| Skin Corr. 1B, H314: | SKIN CORROSION/IRRITATION - Category 1B. |
| Skin Irrit. 2, H315: | SKIN CORROSION/IRRITATION - Category 2. |
| Skin Sens. 1, H317: | SKIN SENSITISATION - Category 1. |
| STOT RE 2, H373: | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2. |
| STOT SE 3, H335: | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3. |
| STOT SE 3, H336: | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3. |

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