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

1.1. Product identifier
ARC HT-S(E) Part A

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

Use of the substance/mixture
ARC Polymer Composite to be mixed with ARC HT-S(E) (Part B) to provide a corrosion resistant coating for hot water/steam environment.

Uses advised against
No data available

1.3. Details of the supplier of the safety data sheet
Company name: Chesterton International GmbH
Street: Am Lenzenfleck 23
Place: DE-85737 Ismaning GERMANY
Telephone: +49 89 99 65 46 - 0  
Fax: +49 89 99 65 46 - 50
E-mail: eu-sds@chesterton.com
E-mail (Contact person): eu-sds@chesterton.com
Internet: www.chesterton.com
Responsible Department: eu-sds@chesterton.com

1.4. Emergency telephone number:
+49(0) 551 - 1 92 40 (GIZ-Nord, 24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008
Hazard categories:
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Dam. 1
Respiratory or skin sensitisation: Skin Sens. 1
Hazardous to the aquatic environment: Aquatic Chronic 3

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

2.2. Label elements

Regulation (EC) No. 1272/2008
Hazard components for labelling
Epoxy phenol novolac resin
1,4-bis(2,3 epoxypropoxy)butane
3-Glycidyloxypropyltrimethoxysilane
Quartz fine fraction
Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC HT-S(E) Part A

Revision date: 20.05.2020

Signal word: Danger

Pictograms:

Hazard statements
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

2.3. Other hazards
The safety and health hazards are detailed separately for Part A and Part B. The final cured material is considered nonhazardous. Upon machining, refer to the precautions in the safety data sheets for Part A and Part B.

SECTION 3: Composition/information on ingredients

3.2. Mixtures
Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Quantity</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH No</th>
<th>GHS Classification</th>
<th>Full text of H and EUH statements: see section 16.</th>
</tr>
</thead>
<tbody>
<tr>
<td>28064-14-4</td>
<td>Epoxy phenol novolac resin</td>
<td>20 - &lt; 25 %</td>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411</td>
<td></td>
</tr>
<tr>
<td>2425-79-8</td>
<td>1,4-bis(2,3 epoxypropoxy)butane</td>
<td>5 - &lt; 10 %</td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 3, H332 H312 H302 H315 H318 H317 H412</td>
<td></td>
</tr>
<tr>
<td>2530-83-8</td>
<td>3-Glycidyloxypropyltrimethoxysilane</td>
<td>5 - &lt; 10 %</td>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1; H318</td>
<td></td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz fine fraction</td>
<td>1 - &lt; 5 %</td>
<td></td>
<td></td>
<td></td>
<td>STOT RE 1; H372</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Change contaminated, saturated clothing. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. Keep away from unauthorized people

After inhalation
In case of accident by inhalation: remove casualty to fresh air and keep at rest. If breathing is irregular or stopped, administer artificial respiration. Immediately call a doctor.

After contact with skin
Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. In case of skin irritation, consult a physician.

After contact with eyes
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion
If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting.
4.2. Most important symptoms and effects, both acute and delayed
Processing vapours can irritate the respiratory tracts, skin and eyes. Ingestion causes nausea, weakness and central nervous system effects.

4.3. Indication of any immediate medical attention and special treatment needed
First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
Dry extinguishing powder. Carbon dioxide (CO2). alcohol resistant foam. Water spray jet

Unsuitable extinguishing media
Full water jet

5.2. Special hazards arising from the substance or mixture
Hazardous combustion products: Carbon monoxide, aldehydes, Gases/vapours, toxic

5.3. Advice for firefighters
Special protective equipment for firefighters Protective clothing. In case of fire: Wear self-contained breathing apparatus.
Co-ordinate fire-fighting measures to the fire surroundings. Use water spray to cool containers.

Additional information
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protection equipment (refer to section 8).
Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothes. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. When using do not eat, drink or smoke.

6.2. Environmental precautions
Do not allow to enter into surface water or drains. Cover drains. Adverse environmental effects

6.3. Methods and material for containment and cleaning up
Take up mechanically, placing in appropriate containers for disposal. Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections
Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
Wear personal protection equipment (refer to section 8).
Avoid dust formation. Do not breathe dust. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothes. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. When using do not eat, drink or smoke. Contaminated leather including shoes cannot be decontaminated and should be discarded. Avoid creating and breathing dust during removal, drilling, grinding, sawing or sanding.

Advice on protection against fire and explosion
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep container tightly closed in a cool, well-ventilated place. Keep/Store only in original container.

Further information on storage conditions
Keep away from:
- Frost
- Heat
- Humidity

7.3. Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>pm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1</td>
<td>Aluminium oxides, inhalable dust</td>
<td></td>
<td>10</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td>1317-65-3</td>
<td>Calcium carbonate, respirable</td>
<td></td>
<td>4</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td>-</td>
<td>Silica, amorphous, respirable dust</td>
<td></td>
<td>2.4</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>Titanium dioxide, total inhalable</td>
<td></td>
<td>10</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
</tbody>
</table>
## DNEL/DMEL values

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>DNEL type</th>
<th>Exposure route</th>
<th>Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1</td>
<td>Aluminium oxide</td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>local</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>0,84 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>0,75 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>local</td>
<td>0,75 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>1,32 mg/kg bw/day</td>
</tr>
<tr>
<td>2425-79-8</td>
<td>1,4-bis(2,3 epoxypropoxy)butane</td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>4,7 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>6,66 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>1,16 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>3,33 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>0,33 mg/kg bw/day</td>
</tr>
<tr>
<td>2530-83-8</td>
<td>3-Glycidyloxypropyltrimethoxysilane</td>
<td>Consumer DNEL, acute</td>
<td>inhalation</td>
<td>systemic</td>
<td>26400 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>70,5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>10 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>17 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>5 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>5 mg/kg bw/day</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>Titanium dioxide</td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>local</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>700 mg/kg bw/day</td>
</tr>
</tbody>
</table>
### PNEC values

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>Environmental compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1344-28-1</td>
<td>Aluminium oxide</td>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>20 mg/l</td>
</tr>
<tr>
<td>2425-79-8</td>
<td>1,4-bis(2,3 epoxypropoxy)butane</td>
<td>Freshwater</td>
<td>0,024 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater (intermittent releases)</td>
<td>0,24 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0,002 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>0,084 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0,008 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Secondary poisoning</td>
<td>0,028 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>100 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>0,003 mg/kg</td>
</tr>
<tr>
<td>2530-83-8</td>
<td>3-Glycidyloxypropyltrimethoxysilane</td>
<td>Freshwater</td>
<td>0,45 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater (intermittent releases)</td>
<td>0,45 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0,045 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>1,6 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0,16 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>8,2 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>0,063 mg/kg</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>Titanium dioxide</td>
<td>Freshwater</td>
<td>0,184 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater (intermittent releases)</td>
<td>0,193 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0,018 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>1000 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro-organisms in sewage treatment plants (STP)</td>
<td>100 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>100 mg/kg</td>
</tr>
</tbody>
</table>

### 8.2. Exposure controls

**Appropriate engineering controls**

- Provide adequate ventilation as well as local exhaust at critical locations. Avoid dust formation. Knock down dust with water spray jet.

**Protective and hygiene measures**

- Work in well-ventilated zones or use proper respiratory protection. Only wear fitting, comfortable and clean protective clothing. Avoid contact with skin, eyes and clothes. Wash hands and face before breaks and after
work and take a shower if necessary.

**Eye/face protection**
- Suitable eye protection: Eye glasses with side protection
- Goggles

**Hand protection**
- Tested protective gloves must be worn: EN ISO 374 NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber)
- Wearing time with permanent contact: Thickness of the glove material: \( \geq 0.4 \text{ mm} \), Breakthrough time (maximum wearing time): \( >480 \text{ min} \)
- Wearing time with occasional contact (splashes): Thickness of the glove material: \( \geq 0.1 \text{ mm} \), Breakthrough time (maximum wearing time) \( > 30 \text{ min} \)
- For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Breakthrough times and swelling properties of the material must be taken into consideration.

**Skin protection**
- Use protective clothing chemically resistant to this material.

**Respiratory protection**
- If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.
- Combination filtering device (EN 14387) A-P2

**Environmental exposure controls**
- Also ref. to
- Section 6: Accidental Release Measures
- Section 12: Ecological Information (non-mandatory)

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Viscous</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Grey / blue</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Mild</td>
</tr>
<tr>
<td><strong>pH-Value</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Changes in the physical state</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>100 °C</td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td></td>
</tr>
<tr>
<td>Solid</td>
<td>No data available</td>
</tr>
<tr>
<td>Gas</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limits:</td>
<td></td>
</tr>
<tr>
<td>Upper explosion limits:</td>
<td></td>
</tr>
</tbody>
</table>
Auto-ignition temperature
Solid: No data available
Gas: No data available
Decomposition temperature: No data available

Oxidizing properties
No information available.

Density (at 23 °C): ~ 1.8 g/cm³
Water solubility: practically insoluble

Solubility in other solvents
No information available.

Viscosity / dynamic:
(31000-34000 mPa·s)
(at 25 °C)
Vapour density: No data available
Evaporation rate: No data available

9.2. Other information
No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane: hydrolyzes in water or moist air, releasing methanol and organosilicons.

10.2. Chemical stability
The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions
The product is stable under storage at normal ambient temperatures.

10.4. Conditions to avoid
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

10.5. Incompatible materials
Strong acid
Strong alkali
Oxidising agent, strong
Chlorine
Oxygen.

10.6. Hazardous decomposition products
Carbon monoxide, aldehydes, Gases/vapours, toxic. May generate Formaldehyde at temperatures greater than 150°C (300°F).
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane: hydrolyzes in water or moist air, releasing methanol and organosilicons.
SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>2425-79-8</td>
<td>1,4-bis(2,3 epoxypropoxy)butane</td>
<td>oral</td>
<td>LD50</td>
<td>1163</td>
<td>Rat</td>
<td>Study report (1988) OECD Guideline 401</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt; 2150</td>
<td>Rat</td>
<td>Study report (1972) OECD Guideline 402</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation vapour</td>
<td>ATE</td>
<td>11 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation aerosol</td>
<td>ATE</td>
<td>1.5 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2530-83-8</td>
<td>3-Glycidyloxypropyltrimethoxysilane</td>
<td>oral</td>
<td>LD50</td>
<td>16900</td>
<td>Rat</td>
<td>Study report (1978) OECD Guideline 401</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Quartz fine fraction</td>
<td>oral</td>
<td>LD50</td>
<td>&gt;2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;2000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Irritation and corrosivity
Causes skin irritation.
Causes serious eye damage.

Sensitising effects
May cause an allergic skin reaction. (Epoxy phenol novolac resin; 1,4-bis(2,3 epoxypropoxy)butane)

Carcinogenic/mutagenic/toxic effects for reproduction
Based on available data, the classification criteria are not met.

STOT-single exposure
Based on available data, the classification criteria are not met.

STOT-repeated exposure
Based on available data, the classification criteria are not met.

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

SECTION 12: Ecological information

12.1. Toxicity
### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

**Partition coefficient n-octanol/water**

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2425-79-8</td>
<td>1,4-bis(2,3 epoxypropoxy)butane</td>
<td>-0.269</td>
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<tr>
<td>2530-83-8</td>
<td>3-Glycidyloxypropyltrimethoxysilane</td>
<td>0.5</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

No information available.

### 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 12.6. Other adverse effects

No information available.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods
Disposal recommendations
Dispose of waste according to applicable legislation.

Contaminated packaging
Non-contaminated packages may be recycled. Dispose of waste according to applicable legislation.

SECTION 14: Transport information

Land transport (ADR/RID)
14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)
14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)
14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)
14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards
ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user
No information available.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
No information available.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU regulatory information
Information according to 2012/18/EU (SEVESO III):

National regulatory information

Water hazard class (D): 2 - obviously hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:
- Aluminium oxide
- 1,4-bis(2,3 epoxypropoxy)butane
- 3-Glycidyloxypropyltrimethoxysilane
- Titanium dioxide

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2, 5.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international conernant le transport des marchandises dangereuses par chemin de fer
(Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
## Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irrit. 2; H315</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Dam. 1; H318</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Sens. 1; H317</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 3; H412</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

### Relevant H and EUH statements (number and full text)

- **H302**: Harmful if swallowed.
- **H312**: Harmful in contact with skin.
- **H315**: Causes skin irritation.
- **H317**: May cause an allergic skin reaction.
- **H318**: Causes serious eye damage.
- **H319**: Causes serious eye irritation.
- **H332**: Harmful if inhaled.
- **H372**: Causes damage to organs (lung) through prolonged or repeated exposure if inhaled.
- **H411**: Toxic to aquatic life with long lasting effects.
- **H412**: Harmful to aquatic life with long lasting effects.

**Further Information**

This information is based solely on data provided by suppliers of the materials used, not on the mixture itself. No warranty is expressed or implied regarding the suitability of the product for the user's particular purpose. The user must make their own determination as to suitability.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*