



**SAFETY DATA SHEET**  
according to Regulation (EC) No. 1907/2006

SDS n° : FP16594

**POLYCOR LP BR**

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

**1.1. Product identifier**

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product name</b>           | <b>POLYCOR LP BR</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Chemical Name</b>          | <b>Gel Coat polyester for composites.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Trade name</b>             | POLYCOR LP BR;POLYCOR LP BR LV;POLYCOR LP BR LV2;POLYCOR LP BR HV;POLYCOR LP PTY;POLYCOR LP BR FC;POLYCOR LP BR IHB;POLYCOR LP BR AD;POLYCOR TOPCOAT LP BR;POLYCOR TOPCOAT LP BR LV;POLYCOR LP BR LV AD;POLYCOR LP BR LV FC;POLYCOR TOPCOAT LP BR HV;POLYCOR LP BR LV FC2;POLYCOR LP BR LV IHB;POLYCOR TOPCOAT LP BR LV IHB;POLYCOR TOPCOAT LP BR IHB;POLYCOR LP BR LV2 FC;POLYCOR LP BR LV2 FC AD;POLYCOR TOPCOAT LP SLV;POLYCOR TOPCOAT LP BR LV2 FC;POLYNT WHITE BRUSH GELCOAT;POLYNT CLEAR BRUSH GELCOAT |
| <b>Pure substance/mixture</b> | Mixture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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

|                        |                                                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Identified uses</b> | To form a protective and decorative layer for GRP composites. Contact us before using for food contact application. |
|------------------------|---------------------------------------------------------------------------------------------------------------------|

**1.3. Details of the supplier of the safety data sheet**

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Supplier</b> | <p>Polynt Composites France S.A.<br/>Route d'Arras CS 50019 62320 Drocourt, France<br/>Tel : (+33) 3 21 74 84 00 - Fax : (+33) 3 21 49 55 84</p> <p>Polynt S.p.A.<br/>Via Enrico Fermi, 51 24020 Scanzorosciate (BG), Italy<br/>Tel : (+39) 035 652 111 - Fax : (+39) 035 652 421</p> <p>Polynt Composites Spain, S.L.U.<br/>Avenida República Argentina S/N 09200 Miranda de Ebro - Burgos, Spain<br/>Tel : (+34) 947 027 202 - Fax : (+34) 947 31 45 40</p> <p>Polynt Composites Poland Sp. z o.o.<br/>ul. Grabska 11d, 32-005 Niepołomice, Poland<br/>Tel : (+48) 12 281 42 00 - Fax : (+48) 12 281 42 01</p> <p>Polynt Composites Norway AS<br/>Lilleborggata 4, 1630 Gamle Fredrikstad, Norway<br/>Tel : (+47) 693 570 00 - Fax : (+47) 693 570 01</p> <p>Polynt Composites Stallingborough UK Ltd.<br/>Laporte Road, Stallingborough - Near Grimsby North East Lincolnshire DN41 8DR, United Kingdom<br/>Tel : (+44) 1469 552 570 - Fax : (+44) 1469 552 597</p> |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The supplier of the product is, among those indicated above, the one identified on the label and / or in the sales documents

**For further information, please contact**

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**E-mail address**  
**Internet Address**

sdsregulatory@polynt.com  
<http://www.polynt.com>

#### 1.4. Emergency telephone number

|                                                                       |                  |
|-----------------------------------------------------------------------|------------------|
| This telephone number is available 24 hours per day, 7 days per week. |                  |
| Europe :                                                              | +44 1235 239 670 |
| Middle East/Africa :                                                  | +44 1235 239 671 |
| East/South East Asia :                                                | +65 3158 1412    |
| America :                                                             | +1 215 207 0061  |

**Poison Information Centre**  
**telephone number**

European emergency phone number : 112  
 UK : National Poisons Emergency Number : 0845 4647  
 Ireland : National Poisons Information Centre (NPIC) Telephone Healthcare  
 Professionals : +353 (01) 809 2566. (24 hour service) Telephone Members of Public :  
 +353 (01) 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification of the substance or mixture - GHS/CLP (n° 1272/2008)

|                                                    |                            |
|----------------------------------------------------|----------------------------|
| Skin Corrosion/Irritation                          | Category 2                 |
| Serious Eye Damage/Eye Irritation                  | Category 2                 |
| Skin Sensitization                                 | Category 1 Sub-category 1A |
| Reproductive Toxicity                              | Category 2                 |
| Specific Target Organ Toxicity (Single Exposure)   | Category 3                 |
| Specific target organ toxicity - repeated exposure | Category 1                 |
| Chronic Aquatic Toxicity                           | Category 3                 |
| Flammable liquids                                  | Category 3                 |

#### 2.2. Label elements

Contains cobalt octoate, Styrene



**Signal word**

**Danger**

**Hazard statements**

H315 - Causes skin irritation  
 H317 - May cause an allergic skin reaction  
 H319 - Causes serious eye irritation  
 H335 - May cause respiratory irritation  
 H361d - Suspected of damaging the unborn child  
 H372 - Causes damage to organs through prolonged or repeated exposure if inhaled  
 H412 - Harmful to aquatic life with long lasting effects  
 H226 - Flammable liquid and vapour

Physical hazards

**EU H -Phrases**

EUH208 - Contains phthalic anhydride- May produce an allergic reaction.

**Precautionary statements**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
 P243 - Take action to prevent static discharges  
 P260 - Do not breathe vapour  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

**2.3. Other hazards**

PBT/vPvB see section 12.5.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Hazardous components**

| Chemical Name                                | EC-No     | REACH Registration Number | CAS-No      | Weight percent | GHS Classification                                                                                                                                                                                     |
|----------------------------------------------|-----------|---------------------------|-------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Styrene                                      | 202-851-5 | 01-2119457861-32          | 100-42-5    | ~ 35           | Flam. Liq. 3 (H226)<br>Repr. 2 (H361d)<br>Acute Tox. 4 (H332)<br>Skin Irrit. 2 (H315)<br>Eye Irrit. 2 (H319)<br>Asp. Tox. 1 (H304)<br>STOT SE 3 (H335)<br>STOT RE 1 (H372)<br>Aquatic Chronic 3 (H412) |
| Titanium dioxide                             | 236-675-5 | 01-2119489379-17          | 13463-67-7  | ~ 11           | -                                                                                                                                                                                                      |
| Talc                                         | 238-877-9 | 01-2120140278-58          | 14807-96-6  | ~ 10           | -                                                                                                                                                                                                      |
| Silica, amorphous, fumed, crystalline-free   | 231-545-4 | 01-2119379499-16          | 112945-52-5 | ~ 3            | -                                                                                                                                                                                                      |
| Naphtha (petroleum), hydrodesulfurized heavy | 265-185-4 | 01-2119490979-12          | 64742-82-1  | < 1            | Flam. Liq. 3 (H226)<br>Asp. Tox. 1 (H304)<br>STOT SE 3 (H336)<br>Aquatic Chronic 2 (H411)                                                                                                              |
| phthalic anhydride                           | 201-607-5 | 01-2119457017-41          | 85-44-9     | 0.1 - < 1      | Acute Tox. 4 (H302)<br>Skin Irrit. 2 (H315)<br>Skin Sens. 1 (H317)<br>Eye Dam. 1 (H318)<br>Resp. Sens. 1 (H334)<br>STOT SE 3 (H335)                                                                    |
| (2-methoxymethylethoxy)propanol              | 252-104-2 | 01-2119450011-60          | 34590-94-8  | < 0.5          | -                                                                                                                                                                                                      |
| Paraffin waxes and Hydrocarbon waxes         | 232-315-6 | 01-2119488076-30          | 8002-74-2   | < 0.5          | -                                                                                                                                                                                                      |
| cobalt octoate                               | 205-250-6 | 01-2119524678-29          | 136-52-7    | ~ 0.15         | Skin Sens. 1A (H317)<br>Eye Irrit. 2 (H319)<br>Repr. 1B (H360Fd)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 3 (H412)                                                                                 |

For the full text of the H-Statements mentioned in this Section, see Section 16

**SECTION 4: First aid measures****4.1. Description of first aid measures**

|                                   |                                                                                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>             | Show this safety data sheet to the doctor in attendance<br>Do not breathe dust/fume/gas/mist/vapours/spray                                      |
| <b>Eye Contact</b>                | Rinse thoroughly with plenty of water, also under the eyelids.<br>Keep eye wide open while rinsing.<br>If symptoms persist, call a physician    |
| <b>Skin contact</b>               | Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes<br>If skin irritation persists, call a physician |
| <b>Inhalation</b>                 | Move to fresh air<br>If not breathing, give artificial respiration<br>Consult a physician                                                       |
| <b>Ingestion</b>                  | Do NOT induce vomiting<br>Rinse mouth.<br>Consult a physician                                                                                   |
| <b>Protection of first-aiders</b> | Use personal protective equipment<br>See section 8 for more information                                                                         |

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

|                     |                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>  | Irritating to eyes                                                                                                                                            |
| <b>Skin contact</b> | Irritating to skin<br>May cause sensitisation by skin contact                                                                                                 |
| <b>Inhalation</b>   | Harmful: danger of serious damage to health by prolonged exposure through inhalation<br>Irritating to respiratory system<br>May produce an allergic reaction. |
| <b>Ingestion</b>    | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.                                                                              |

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

|                           |                          |
|---------------------------|--------------------------|
| <b>Notes to physician</b> | No information available |
|---------------------------|--------------------------|

**SECTION 5: Firefighting measures****5.1. Extinguishing media**

|                                                                      |                                                                         |
|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Suitable extinguishing media</b>                                  | Dry chemical, Foam, Carbon dioxide (CO <sub>2</sub> ), (closed systems) |
| <b>Extinguishing Media Which Must not be Used for Safety Reasons</b> | Do not use a solid water stream as it may scatter and spread fire.      |

**5.2. Special hazards arising from the substance or mixture**

|                                                                                                                        |                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases</b> | Vapours may form explosive mixtures with air. Most vapours are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks)<br>Heating or fire can release toxic gas : Carbon monoxide |
|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.3. Advice for firefighters

**Special protective equipment for fire-fighters** Wear self-contained breathing apparatus and protective suit.

**Other information** Cool containers / tanks with water spray.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

##### Personal precautions

Remove all sources of ignition  
Heat, flames and sparks.  
Take precautionary measures against static charges.  
Ensure adequate ventilation  
Use personal protective equipment

#### For emergency responders

Avoid breathing vapours or mists In the event of fire and/or explosion do not breathe fumes. Use personal protective equipment

### 6.2. Environmental precautions

**Environmental precautions** The product should not be allowed to enter drains, water courses or the soil.  
Do not flush into surface water or sanitary sewer system

### 6.3. Methods and material for containment and cleaning up

#### Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13)  
Use clean non-sparking tools to collect absorbed material

### 6.4. Reference to other sections

See section 8 for more information  
See Section 12 for additional Ecological Information

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Precautions for safe handling** Avoid static electricity build up with connection to earth  
Use only in area provided with appropriate exhaust ventilation  
In case of insufficient ventilation, wear suitable respiratory equipment  
For personal protection see section 8

**Prevention of fire and explosion** Keep away from open flames, hot surfaces and sources of ignition Empty containers may contain flammable or explosive vapours

**Hygiene measures** When using, do not eat, drink or smoke Wash hands before breaks and at the end of workday. Provide regular cleaning of equipment, work area and clothing

### 7.2. Conditions for safe storage, including any incompatibilities

**Technical measures/Storage conditions** Keep in a dry, cool and well-ventilated place.  
Keep at temperature not exceeding 30°C  
Keep away from heat and sources of ignition.

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**Materials to avoid** Strong oxidizing agents, Catalyst, Peroxides, Reducing agents**Packaging material** metallic GRP Tanks (Reinforced Glass Polyester)**Unsuitable materials for containers** copper, Copper alloys, Bronze, Zinc

### 7.3. Specific end use(s)

**Specific use(s)** No information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational Exposure limits

| Chemical Name                                     | European Union                          | ACGIH OEL (Ceiling)                                                                         | The United Kingdom                                                                                      | Ireland                                                                       |
|---------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Styrene<br>100-42-5                               | -                                       | TLV-8h TWA: 20 ppm - 85 mg/m <sup>3</sup><br>TLV-15min STEL: 40 ppm - 170 mg/m <sup>3</sup> | STEL 250 ppm STEL 1080 mg/m <sup>3</sup><br>TWA 100 ppm TWA 430 mg/m <sup>3</sup>                       | TWA 20 ppm TWA 85 mg/m <sup>3</sup><br>STEL 40 ppm STEL 170 mg/m <sup>3</sup> |
| Titanium dioxide<br>13463-67-7                    |                                         | TWA 10 mg/m <sup>3</sup>                                                                    | STEL 30 mg/m <sup>3</sup> STEL 12 mg/m <sup>3</sup> TWA 10 mg/m <sup>3</sup><br>TWA 4 mg/m <sup>3</sup> | TWA 10 mg/m <sup>3</sup> TWA 4 mg/m <sup>3</sup>                              |
| Talc<br>14807-96-6                                |                                         | TWA 2 mg/m <sup>3</sup>                                                                     | STEL 3 mg/m <sup>3</sup> TWA 1 mg/m <sup>3</sup>                                                        | TWA 10 mg/m <sup>3</sup> TWA 0.8 mg/m <sup>3</sup>                            |
| phthalic anhydride<br>85-44-9                     |                                         | TWA 1 ppm                                                                                   | STEL 12 mg/m <sup>3</sup> TWA 4 mg/m <sup>3</sup> Sen+                                                  | TWA 4 mg/m <sup>3</sup> STEL 12 mg/m <sup>3</sup> Sensitizer                  |
| (2-methoxymethylethoxy)propanol<br>34590-94-8     | TWA 50 ppm TWA 308 mg/m <sup>3</sup> S* | TWA 100 ppm                                                                                 | STEL 150 ppm STEL 924 mg/m <sup>3</sup> TWA 50 ppm TWA 308 mg/m <sup>3</sup> Skin                       | TWA 50 ppm TWA 308 mg/m <sup>3</sup> Skin                                     |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2 |                                         | TWA 2 mg/m <sup>3</sup>                                                                     | STEL 6 mg/m <sup>3</sup> TWA 2 mg/m <sup>3</sup>                                                        | TWA 2 mg/m <sup>3</sup> STEL 6 mg/m <sup>3</sup>                              |
| cobalt octoate<br>136-52-7                        |                                         | 0.02 mg/m <sup>3</sup>                                                                      | STEL 0.3 mg/m <sup>3</sup> TWA 0.1 mg/m <sup>3</sup> Sen+                                               | TWA 0.1 mg/m <sup>3</sup> Sensitizer                                          |

#### Special hazards arising from the substance or mixture

#### Biological standards

##### Derived No Effect Level (DNEL)

| Derived No Effect Level (DNEL)                          |                  |                  |                         |        |
|---------------------------------------------------------|------------------|------------------|-------------------------|--------|
| Styrene (100-42-5)                                      |                  |                  |                         |        |
| Type                                                    | DNEL oral        | DNEL dermal      | DNEL inhalation         | Remark |
| Workers - Long Term - Systemic effect                   |                  | 406 mg/Kg bw/day | 85 mg/m <sup>3</sup>    |        |
| Workers - Acute Short Term - Local effect               |                  |                  | 306 mg/m <sup>3</sup>   |        |
| Workers - Acute Short term - Systemic effect            |                  |                  | 289 mg/m <sup>3</sup>   |        |
| General Population - Acute Short Term - Local effect    |                  |                  | 182.7 mg/m <sup>3</sup> |        |
| General Population - Acute Short Term - Systemic effect |                  |                  | 174.2 mg/m <sup>3</sup> |        |
| General Population - Long Term - Systemic effect        | 2.1 mg/Kg bw/day | 343 mg/Kg bw/day | 10.2 mg/m <sup>3</sup>  |        |

  

| Titanium dioxide (13463-67-7)      |           |             |                      |        |
|------------------------------------|-----------|-------------|----------------------|--------|
| Type                               | DNEL oral | DNEL dermal | DNEL inhalation      | Remark |
| Workers - Long Term - Local effect |           |             | 10 mg/m <sup>3</sup> |        |

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|--------------------------------------------------|------------------|--|--|--|
| General Population - Long Term - Systemic effect | 700 mg/kg bw/day |  |  |  |
|--------------------------------------------------|------------------|--|--|--|

| Talc (14807-96-6)                                       |                  |                         |                        |        |
|---------------------------------------------------------|------------------|-------------------------|------------------------|--------|
| Type                                                    | DNEL oral        | DNEL dermal             | DNEL inhalation        | Remark |
| Workers - Acute Short term - Systemic effect            |                  |                         | 2.16 mg/m <sup>3</sup> |        |
| Workers - Acute Short Term - Local effect               |                  |                         | 3.6 mg/m <sup>3</sup>  |        |
| Workers - Long Term - Systemic effect                   |                  | 43.2 mg/kg bw/day       | 2.16 mg/m <sup>3</sup> |        |
| Workers - Long Term - Local effect                      |                  | 4.54 mg/cm <sup>2</sup> | 3.6 mg/m <sup>3</sup>  |        |
| General Population - Acute Short Term - Systemic effect |                  |                         | 1.08 mg/m <sup>3</sup> |        |
| General Population - Acute Short Term - Local effect    |                  |                         | 1.8 mg/m <sup>3</sup>  |        |
| General Population - Long Term - Systemic effect        | 160 mg/kg bw/day | 21.6 mg/kg bw/day       | 1.08 mg/m <sup>3</sup> |        |
| General Population - Long Term - Local effect           |                  | 2.27 mg/cm <sup>2</sup> | 1.8 mg/m <sup>3</sup>  |        |

| Silica, amorphous, fumed, crystalline-free (112945-52-5) |           |             |                     |        |
|----------------------------------------------------------|-----------|-------------|---------------------|--------|
| Type                                                     | DNEL oral | DNEL dermal | DNEL inhalation     | Remark |
| Workers - Long Term - Systemic effect                    |           |             | 4 mg/m <sup>3</sup> |        |

| phthalic anhydride (85-44-9)                     |                |                 |                        |        |
|--------------------------------------------------|----------------|-----------------|------------------------|--------|
| Type                                             | DNEL oral      | DNEL dermal     | DNEL inhalation        | Remark |
| Workers - Long Term - Systemic effect            |                | 10 mg/kg bw/day | 32.2 mg/m <sup>3</sup> |        |
| General Population - Long Term - Systemic effect | 5 mg/kg bw/day | 5 mg/kg bw/day  | 8.6 mg/m <sup>3</sup>  |        |

| (2-methoxymethylethoxy)propanol (34590-94-8)     |                 |                  |                        |        |
|--------------------------------------------------|-----------------|------------------|------------------------|--------|
| Type                                             | DNEL oral       | DNEL dermal      | DNEL inhalation        | Remark |
| Workers - Long Term - Systemic effect            |                 | 283 mg/kg bw/day | 308 mg/m <sup>3</sup>  |        |
| General Population - Long Term - Systemic effect | 36 mg/kg bw/day | 121 mg/kg bw/day | 37.2 mg/m <sup>3</sup> |        |

| cobalt octoate (136-52-7)                        |                  |             |                         |        |
|--------------------------------------------------|------------------|-------------|-------------------------|--------|
| Type                                             | DNEL oral        | DNEL dermal | DNEL inhalation         | Remark |
| Workers - Long Term - Local effect               |                  |             | 235.1 µg/m <sup>3</sup> |        |
| General Population - Long Term - Systemic effect | 175 µg/kg bw/day |             |                         |        |
| General Population - Long Term - Local effect    |                  |             | 37 µg/m <sup>3</sup>    |        |

#### Predicted No Effect Concentration (PNEC)

| PNEC Component           |           |            |
|--------------------------|-----------|------------|
| Styrene (100-42-5)       |           |            |
| Exposure                 | Type      | PNEC       |
| Fresh water              | PNEC Aqua | 0.028 mg/L |
| Marine water             | PNEC Aqua | 0.014 mg/L |
| Intermittent use/release | PNEC Aqua | 0.04 mg/L  |

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|-------------------------|---------------|----------------|
| Fresh water             | PNEC Sediment | 0.614 mg/Kg.dw |
| Marine water            | PNEC Sediment | 0.307 mg/Kg.dw |
| Terrestrial Compartment | PNEC Soil     | 0.2 mg/Kg.dw   |
| STP microorganisms      | PNEC STP      | 5 mg/L         |

| Titanium dioxide (13463-67-7) |               |                        |
|-------------------------------|---------------|------------------------|
| Exposure                      | Type          | PNEC                   |
| Fresh water                   | PNEC Aqua     | 0.127 mg/L             |
| Marine water                  | PNEC Aqua     | 1 mg/L                 |
| Intermittent use/release      | PNEC Aqua     | 0.61 mg/L              |
|                               | PNEC STP      | 100 mg/L               |
| Fresh water                   | PNEC Sediment | 1000 mg/kg sediment dw |
| Marine water                  | PNEC Sediment | 100 mg/kg sediment dw  |
|                               | PNEC Soil     | 100 mg/kg soil dw      |
| Secondary Poisoning           | PNEC Oral     | 1667 mg/kg food        |

| Talc (14807-96-6) |               |                         |
|-------------------|---------------|-------------------------|
| Exposure          | Type          | PNEC                    |
| Marine water      | PNEC Aqua     | 141.26 mg/L             |
| Fresh water       | PNEC Aqua     | 597.97 mg/L             |
| Marine water      | PNEC Sediment | 3.13 mg/kg sediment dw  |
| Fresh water       | PNEC Sediment | 31.33 mg/kg sediment dw |

| Silica, amorphous, fumed, crystalline-free (112945-52-5) |           |             |
|----------------------------------------------------------|-----------|-------------|
| Exposure                                                 | Type      | PNEC        |
| Secondary Poisoning                                      | PNEC Oral | 60000 mg/kg |

| phthalic anhydride (85-44-9) |               |                        |
|------------------------------|---------------|------------------------|
| Exposure                     | Type          | PNEC                   |
| Fresh water                  | PNEC Aqua     | 1 mg/L                 |
| Marine water                 | PNEC Aqua     | 0.1 mg/L               |
| Intermittent use/release     | PNEC Aqua     | 5.6 mg/L               |
|                              | PNEC STP      | 10 mg/L                |
| Fresh water                  | PNEC Sediment | 3.8 mg/kg sediment dw  |
| Marine water                 | PNEC Sediment | 0.38 mg/kg sediment dw |
| Terrestrial Compartment      | PNEC Soil     | 0.173 mg/kg soil dw    |

| (2-methoxymethylethoxy)propanol (34590-94-8) |               |                        |
|----------------------------------------------|---------------|------------------------|
| Exposure                                     | Type          | PNEC                   |
| Marine water                                 | PNEC Aqua     | 1.9 mg/L               |
| Fresh water                                  | PNEC Aqua     | 19 mg/L                |
| Intermittent use/release                     | PNEC Aqua     | 190 mg/L               |
|                                              | PNEC STP      | 4168 mg/L              |
| Fresh water                                  | PNEC Sediment | 70.2 mg/kg sediment dw |
| Marine water                                 | PNEC Sediment | 7.02 mg/kg sediment dw |
|                                              | PNEC Soil     | 2.74 mg/kg soil dw     |

| cobalt octoate (136-52-7) |               |                        |
|---------------------------|---------------|------------------------|
| Exposure                  | Type          | PNEC                   |
| Fresh water               | PNEC Aqua     | 0.62 µg/L              |
| Marine water              | PNEC Aqua     | 2.36 µg/L              |
| STP microorganisms        | PNEC STP      | 0.37 mg/L              |
| Fresh water               | PNEC Sediment | 53.8 mg/kg sediment dw |
| Marine water              | PNEC Sediment | 69.8 mg/kg sediment dw |
| Terrestrial Compartment   | PNEC Soil     | 10.9 mg/kg soil dw     |

## 8.2. Exposure controls

### Occupational exposure controls



**Engineering measures**

Apply technical measures to comply with the occupational exposure limits.  
When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment

**Personal protective equipment****General Information****Respiratory protection**

Use personal protective equipment.

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)  
If exposure limits are likely to be exceeded / In case of insufficient ventilation wear suitable respiratory equipment :

Breathing apparatus with filter Type A ( Organic gases and vapours filter conforming to EN 14387 , APF 40 < 1 hour, APF 200 > 1 hour) / Type A(2)/P3 in combination with Particulates filter conforming to EN 143 , if exposed to dust

**Eye protection**

Safety glasses with side-shields. Do not wear contact lenses.

**Skin and body protection**

Antistatic boots. Protective shoes or boots. Wear fire/flamm resistant/retardant clothing.

**Hand protection**

Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training

Glove material : Neoprene , Nitriles , Viton (R) or Polyvinyl alcohol

Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

**Environmental exposure controls**

**Environmental exposure controls** Do not allow material to contaminate ground water system.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

| <b>Property</b>                               | <b>Values</b>                                       | <b>Remark</b>             |
|-----------------------------------------------|-----------------------------------------------------|---------------------------|
| <b>Appearance</b>                             | Variable (This Data Sheet includes all the colours) |                           |
| <b>Physical state</b>                         | Liquid                                              |                           |
| <b>Particle size</b>                          |                                                     | no data available         |
| <b>Odour</b>                                  | Styrene                                             |                           |
| <b>Odour Threshold</b>                        | 0.15 ppm                                            | Values related to styrene |
| <b>pH</b>                                     |                                                     | no data available         |
| <b>pH (as aqueous solution)</b>               |                                                     | no data available         |
| <b>Melting point/range</b>                    | - 30 °C                                             | Values related to styrene |
| <b>Freezing Point</b>                         |                                                     | no data available         |
| <b>Boiling point</b>                          | 145 °C                                              | Values related to styrene |
| <b>Flash point</b>                            | 31 °C                                               | Values related to styrene |
| <b>Evaporation rate</b>                       |                                                     | no data available         |
| <b>Flammability Limits in Air</b>             |                                                     |                           |
| upper                                         | 6,1 - 6,8%                                          | Values related to styrene |
| lower                                         | 0,9 - 1,1%                                          | Values related to styrene |
| <b>Vapour pressure</b>                        | 6 hPa                                               | 20°C                      |
| <b>Vapour density</b>                         | 3.6                                                 | Values related to styrene |
| <b>Density</b>                                | 1.1 - 1.4 g/cm3                                     | 20°C                      |
| <b>Water solubility</b>                       | Insoluble in water                                  |                           |
| <b>Partition coefficient: n-octanol/water</b> | 3                                                   | Values related to styrene |
| <b>Autoignition temperature</b>               | 490 °C                                              | Values related to styrene |
| <b>Decomposition temperature</b>              |                                                     | no data available         |
| <b>Viscosity, kinematic</b>                   | 9091 - 27273 mm2/s                                  | 20°C                      |
| <b>Viscosity, dynamic</b>                     | 10000 - 30000 mPa.s                                 | 20°C                      |
| <b>Explosive properties</b>                   |                                                     | not applicable            |
| <b>Oxidizing properties</b>                   |                                                     | not applicable            |

**9.2. Other information**

| Property | Values | Remark |
|----------|--------|--------|
|----------|--------|--------|

|                              |                                  |  |
|------------------------------|----------------------------------|--|
| Solubility in other solvents | Soluble in most organic solvents |  |
|------------------------------|----------------------------------|--|

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

|            |                                                                       |
|------------|-----------------------------------------------------------------------|
| Reactivity | Product may ignite and burn at temperatures exceeding the flash point |
|------------|-----------------------------------------------------------------------|

### 10.2. Chemical stability

|           |                                              |
|-----------|----------------------------------------------|
| Stability | Stable under recommended storage conditions. |
|-----------|----------------------------------------------|

### 10.3. Possibility of hazardous reactions

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Hazardous reactions | In use, may form flammable/explosive vapour-air mixture. |
|---------------------|----------------------------------------------------------|

|                          |                           |
|--------------------------|---------------------------|
| Hazardous polymerisation | Polymerisation can occur. |
|--------------------------|---------------------------|

### 10.4. Conditions to avoid

|                     |                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------|
| Conditions to avoid | Heat, flames and sparks.<br>Exposure to light.<br>Take precautionary measures against static charges. |
|---------------------|-------------------------------------------------------------------------------------------------------|

### 10.5. Incompatible materials

|                    |                                                               |
|--------------------|---------------------------------------------------------------|
| Materials to avoid | Strong oxidizing agents, Catalyst, Peroxides, Reducing agents |
|--------------------|---------------------------------------------------------------|

### 10.6. Hazardous decomposition products

|                                  |                                                                                                                   |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Hazardous decomposition products | Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide and carbon dioxide |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------|

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity

|            |                                                                                                                                                            |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation | Harmful: danger of serious damage to health by prolonged exposure through inhalation<br>Irritating to respiratory system May produce an allergic reaction. |
| Ingestion  | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.                                                                           |

| Chemical Name                                                | LD50 Oral                                    | LD50 Dermal                                      | LC50 Inhalation                                                 | Read-across (Analogy) |
|--------------------------------------------------------------|----------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------|-----------------------|
| Styrene<br>100-42-5                                          | 5000 mg/kg (Rat)                             | > 2000 mg/kg bw (Rat) 24h<br>OECD 402            | 11.8 mg/L (Rat) 4h<br>CSR                                       |                       |
| Titanium dioxide<br>13463-67-7                               | > 5000 mg/kg bw (Rat)<br>OECD 425            | > 10000 mg/kg (Rabbit)                           | > 6,82 mg/L air (Rat) 4h                                        |                       |
| Talc<br>14807-96-6                                           | > 5000 mg/kg bw (Rat)<br>OECD 423            | > 2000 mg/kg bw (Rat)<br>OECD 402                |                                                                 |                       |
| Silica, amorphous, fumed,<br>crystalline-free<br>112945-52-5 | > 5000 mg/kg bw (Rat)<br>OECD 401            | > 5000 mg/kg (Rabbit)                            | > 0.14 mg/L air (Rat) 4h<br>(analytical)<br>OECD 403            |                       |
| phthalic anhydride<br>85-44-9                                | 1530 mg/kg bw (Rat)                          | > 3160 mg/kg bw (Rabbit)                         | > 2.14 mg/L (Rat) 4h<br>OECD 403                                |                       |
| (2-methoxymethylethoxy)pr<br>opanol<br>34590-94-8            | > 5000 mg/kg bw (Rat)<br>Similar to OECD 401 | 9510 mg/kg bw(Rabbit) 24h<br>Similar to OECD 402 | LC0 (7h) > 275 ppm (1667<br>mg/m³) (Rat)<br>Similar to OECD 403 |                       |
| Paraffin waxes and<br>Hydrocarbon waxes<br>8002-74-2         | > 5000 mg/kg bw (Rat)<br>OECD 420            | > 2000 mg/kg bw (Rat)<br>OECD 402                |                                                                 |                       |
| cobalt octoate<br>136-52-7                                   | 3129 mg/kg/bw (Rat)<br>OECD 425              | > 2000 mg/kg bw (Rat)<br>OECD 402                |                                                                 |                       |

#### Skin corrosion/irritation

| Chemical Name | Skin corrosion/irritation | Read-across (Analogy) |
|---------------|---------------------------|-----------------------|
|---------------|---------------------------|-----------------------|

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|                                                           |                                                                                               |  |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------|--|
| Styrene<br>100-42-5                                       | Irritating to skin<br>in vivo assay<br>rabbit                                                 |  |
| Titanium dioxide<br>13463-67-7                            | No skin irritation<br>No skin corrosion<br>in vivo assay<br>rabbit<br>OECD 404                |  |
| Talc<br>14807-96-6                                        | No skin irritation<br>in vivo assay<br>in vitro study<br>rabbit<br>OECD 404<br>EU Method B.46 |  |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | No skin irritation<br>rabbit<br>OECD 404                                                      |  |
| phthalic anhydride<br>85-44-9                             | Irritating to skin<br>in vivo assay<br>rabbit<br>OECD 404                                     |  |
| (2-methoxymethylethoxy)propanol<br>34590-94-8             | No skin irritation<br>in vivo assay<br>rabbit<br>similar to<br>OECD 404                       |  |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2         | No skin irritation<br>in vivo assay<br>rabbit<br>OECD 404                                     |  |
| cobalt octoate<br>136-52-7                                | No skin corrosion<br>in vitro study<br>OECD 431<br>EU Method B. 40                            |  |

**Serious Eye Damage/Eye Irritation**

| Chemical Name                                             | Serious Eye Damage/Eye Irritation                                                                 | Read-across (Analogy) |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------|
| Styrene<br>100-42-5                                       | Irritating to eyes<br>in vivo assay<br>rabbit                                                     |                       |
| Titanium dioxide<br>13463-67-7                            | No eye irritation<br>in vivo assay<br>rabbit<br>OECD 405                                          |                       |
| Talc<br>14807-96-6                                        | No eye irritation<br>in vivo assay<br>(rabbit)<br>OECD 405                                        |                       |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | No eye irritation<br>rabbit<br>OECD 405                                                           |                       |
| phthalic anhydride<br>85-44-9                             | Irritating to eyes<br>in vivo assay<br>rabbit<br>Draize Test                                      |                       |
| (2-methoxymethylethoxy)propanol<br>34590-94-8             | No eye irritation<br>in vivo assay                                                                |                       |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2         | No eye irritation<br>in vivo assay<br>rabbit<br>OECD 405                                          |                       |
| cobalt octoate<br>136-52-7                                | Moderate eye irritation<br>OECD 437<br>EU Method B.47<br>Irritating to eyes<br>rabbit<br>OECD 405 |                       |

**Respiratory or skin sensitisation** May cause sensitisation by skin contact

| Chemical Name                                             | Respiratory or skin sensitisation                                                                 | Read-across (Analogy) |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------|
| Styrene<br>100-42-5                                       | Does not cause skin sensitization<br>Does not cause respiratory sensitization<br>CSR              |                       |
| Titanium dioxide<br>13463-67-7                            | Does not cause skin sensitization<br>in vivo assay<br>guinea pig<br>OECD 406<br>mouse<br>OECD 429 |                       |
| Talc<br>14807-96-6                                        | Does not cause skin sensitization<br>in vivo assay<br>guinea pig<br>OECD 406                      |                       |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | Does not cause skin sensitization<br>Does not cause respiratory sensitization                     |                       |
| phthalic anhydride<br>85-44-9                             | May cause sensitisation by inhalation and skin contact<br>in vivo assay<br>guinea pig<br>OECD 406 |                       |
| (2-methoxymethylethoxy)propanol<br>34590-94-8             | Does not cause skin sensitization<br>in vivo assay                                                |                       |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2         | Does not cause skin sensitization<br>in vivo assay<br>guinea pig<br>OECD 406<br>EU Method B.6     |                       |
| cobalt octoate<br>136-52-7                                | May cause sensitisation by skin contact<br>in vivo assay<br>mouse<br>OECD 429                     |                       |

**Mutagenic Effects****in vitro study**

| Chemical Name                                             | Ames test                                                                                                                                                        | Read-across (Analogy) |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Styrene<br>100-42-5                                       | Ambiguous<br>In vitro gene mutation study in bacteria<br>(S. typhimurium G46, TA1530, TA 1535, TA100, TA98,<br>TA1538, TA 1537)<br>OECD 471                      |                       |
| Titanium dioxide<br>13463-67-7                            | negative<br>In vitro gene mutation study in bacteria<br>OECD 471                                                                                                 |                       |
| Talc<br>14807-96-6                                        | negative<br>In vitro gene mutation study in bacteria<br>Salmonella sp.<br>similar to<br>OECD 471<br>EU Method B.13/14                                            |                       |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | negative<br>In vitro gene mutation study in bacteria<br>OECD 471                                                                                                 |                       |
| phthalic anhydride<br>85-44-9                             | negative<br>In vitro gene mutation study in bacteria<br>(S. typhimurium TA 1535, TA 1537, TA 98, TA100 and<br>TA 102)<br>(Escherichia coli WP2 uvrA)<br>OECD 471 |                       |
| (2-methoxymethylethoxy)propanol<br>34590-94-8             | negative<br>In vitro gene mutation study in bacteria<br>(Escherichia coli WP2 uvrA)<br>similar to<br>OECD 471                                                    |                       |

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|                                                   |                                                                                                                                                        |                                |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2 | negative<br>In vitro gene mutation study in bacteria<br>(S. typhimurium TA 1535, TA 1537, TA 98 and TA 100)<br>(Escherichia coli WP2 uvrA)<br>OECD 471 |                                |
| cobalt octoate<br>136-52-7                        | negative<br>In vitro gene mutation study in bacteria<br>(S. typhimurium TA 1535, TA 1537, TA 98, TA100 and<br>TA 102)<br>OECD 471                      | Cas N°: 68956-82-1, 14024-48-7 |

| Chemical Name                                             | In vitro Mammalian Cell Gene Mutation Test                                                         | Read-across (Analogy)                                   |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Styrene<br>100-42-5                                       | Ambiguous<br>In vitro gene mutation study in mammalian cells<br>hamster<br>OECD 476                |                                                         |
| Titanium dioxide<br>13463-67-7                            | negative<br>In vitro gene mutation study in mammalian cells<br>mouse<br>OECD 476                   |                                                         |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | negative<br>In vitro gene mutation study in mammalian cells<br>OECD 476                            |                                                         |
| phthalic anhydride<br>85-44-9                             | negative<br>In vitro gene mutation study in mammalian cells<br>hamster<br>OECD 476                 |                                                         |
| (2-methoxymethylethoxy)propanol<br>34590-94-8             | negative<br>In vitro gene mutation study in mammalian cells<br>rat<br>similar to<br>OECD 482       |                                                         |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2         | negative<br>In vitro gene mutation study in mammalian cells<br>mouse<br>OECD 476                   |                                                         |
| cobalt octoate<br>136-52-7                                | negative<br>In vitro gene mutation study in mammalian cells<br>mouse<br>OECD 476                   | Cas N°: 7440-48-4, 1308-06-1,<br>10124-43-3, 12016-80-7 |
| Chemical Name                                             | In vitro Mammalian Chromosome Aberration Test                                                      | Read-across (Analogy)                                   |
| Styrene<br>100-42-5                                       | positive<br>Chromosome aberration test in vitro<br>OECD 473<br>OECD 479                            |                                                         |
| Titanium dioxide<br>13463-67-7                            | negative<br>Chromosome aberration test in vitro<br>hamster<br>OECD 473                             |                                                         |
| Talc<br>14807-96-6                                        | negative<br>Chromosome aberration test in vitro<br>rat<br>similar to<br>OECD 473<br>EU Method B.10 |                                                         |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | negative<br>Chromosome aberration test in vitro<br>OECD 473                                        |                                                         |
| phthalic anhydride<br>85-44-9                             | Ambiguous<br>Chromosome aberration test in vitro<br>hamster<br>OECD 473                            |                                                         |
| (2-methoxymethylethoxy)propanol<br>34590-94-8             | negative<br>Chromosome aberration test in vitro<br>hamster<br>similar to<br>OECD 473               |                                                         |

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|                                                   |                                                                                      |  |
|---------------------------------------------------|--------------------------------------------------------------------------------------|--|
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2 | negative<br>Chromosome aberration test in vitro<br>hamster<br>similar to<br>OECD 473 |  |
|---------------------------------------------------|--------------------------------------------------------------------------------------|--|

**in vivo assay**

| Chemical Name                                             | Unscheduled DNA Synthesis (UDS)             | Read-across (Analogy)                         |
|-----------------------------------------------------------|---------------------------------------------|-----------------------------------------------|
| Styrene<br>100-42-5                                       | negative<br>mouse<br>OECD 486<br>OECD 474   |                                               |
| Titanium dioxide<br>13463-67-7                            | negative<br>mouse                           |                                               |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | negative<br>rat                             |                                               |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2         | negative<br>mouse<br>similar to<br>OECD 474 |                                               |
| cobalt octoate<br>136-52-7                                | negative<br>rat<br>OECD 474<br>OECD 475     | Cas N°: 68956-82-1, 14024-48-7,<br>10026-24-1 |

**Carcinogenicity****Carcinogenicity****Styrene (100-42-5)**

| Exposure routes | Method                   | Species | Dose                                                                                                           | Evaluation |
|-----------------|--------------------------|---------|----------------------------------------------------------------------------------------------------------------|------------|
| Inhalation      | OECD 453                 | rat     | NOAEC systemic (carcinogenicity) >= 4.34 mg/L air (nominal)                                                    | negative   |
| Inhalation      | OECD 453                 | mouse   | LOAEC (carcinogenicity) female/male = 0.09 - 0.18 mg/L air resp., NOAEC (carcinogenicity) male = 0.09 mg/L air | positive   |
| Oral            | No information available | rat     | NOAEL (carcinogenicity) >= 2000 mg/kg bw /day                                                                  | positive   |
| Oral            | No information available | mouse   | LOAEL (carcinogenicity) = 150 mg/kg bw /day                                                                    | positive   |

**Titanium dioxide (13463-67-7)**

| Exposure routes | Method                   | Species | Dose                                         | Evaluation |
|-----------------|--------------------------|---------|----------------------------------------------|------------|
| Inhalation      | OECD 453                 | rat     | NOAEC lung tumours = 5 mg/m <sup>3</sup> air | negative   |
| Oral            | No information available | rat     | NOEL toxicity > 50000 ppm (nominal)          | negative   |

**Talc (14807-96-6)**

| Exposure routes | Method   | Species | Dose                                           | Evaluation |
|-----------------|----------|---------|------------------------------------------------|------------|
| Oral            | OECD 453 | rat     | NOAEL (101d) = 100 mg/kg bw/day                | negative   |
| Inhalation      | OECD 453 | mouse   | NOAEC (104 weeks) = 6-18 mg/m <sup>3</sup> air | negative   |
| Inhalation      | OECD 453 | rat     | NOAEC = 6-18 mg/m <sup>3</sup> air             | negative   |

**Silica, amorphous, fumed, crystalline-free (112945-52-5)**

| Exposure routes | Method   | Species | Dose                             | Evaluation |
|-----------------|----------|---------|----------------------------------|------------|
| Oral            | OECD 453 | rat     | NOAEL = 1800 - 3200 mg/kg bw/day | negative   |

**phthalic anhydride (85-44-9)**

| Exposure routes | Method | Species | Dose | Evaluation |
|-----------------|--------|---------|------|------------|
|-----------------|--------|---------|------|------------|

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|      |                          |       |                                                                                                                      |          |
|------|--------------------------|-------|----------------------------------------------------------------------------------------------------------------------|----------|
| Oral | No information available | mouse | NOAEL (carcinogenicity, male) = 3570 mg/kg bw/day (72w)<br>NOAEL (carcinogenicity, female) = 1785 mg/kg bw/day (72w) | negative |
| Oral | No information available | rat   | NOAEL (carcinogenicity) = 1000 mg/kg bw/day (105w)                                                                   | negative |

**Paraffin waxes and Hydrocarbon waxes (8002-74-2)**

| Exposure routes | Method | Species | Dose                                      | Evaluation |
|-----------------|--------|---------|-------------------------------------------|------------|
| Dermal          |        | mouse   | NOEL (carcinogenicity) = 128 mg/kg bw/day | negative   |

**Reproductive toxicity****Reproductive toxicity****Styrene (100-42-5)**

| Exposure routes | Method                   | Species | Dose                                                                                                                             | Evaluation |
|-----------------|--------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------|------------|
| Inhalation      | No information available | rat     | NOAEL/LOAEL (fertility) 60d = 100 - 200 mg/kg bw/day                                                                             | positive   |
| Oral            | OECD 422                 | rat     | NOAEL/LOAEL (fertility) 60d = 200 - 400 mg/kg bw/day                                                                             | positive   |
| Inhalation      | OECD 416                 | rat     | NOAEC (P, F1) = 0.64 mg/L air<br>LOAEC (P, F1) = 2.13 mg/L air<br>NOAEC (F2) = 0.21 mg/L air<br>LOAEC (F2) = 0.64 mg/L air (70d) | negative   |

**Talc (14807-96-6)**

| Exposure routes | Method              | Species | Dose                                         | Evaluation |
|-----------------|---------------------|---------|----------------------------------------------|------------|
| Oral            | similar to OECD 416 | rabbit  | NOAEL (reproduction & F1) > 900 mg/kg bw/day | negative   |

**Silica, amorphous, fumed, crystalline-free (112945-52-5)**

| Exposure routes | Method   | Species | Dose                     | Evaluation |
|-----------------|----------|---------|--------------------------|------------|
| Oral            | OECD 415 | rat     | NOAEL = 497 mg/kg bw/day | negative   |

**phthalic anhydride (85-44-9)**

| Exposure routes | Method                   | Species | Dose                                                                                                           | Evaluation |
|-----------------|--------------------------|---------|----------------------------------------------------------------------------------------------------------------|------------|
| Oral            | No information available | mouse   | NOAEL (reproductive, male) = 3570 mg/kg bw/day (72w)<br>NOAEL (reproductive, female) = 1785 mg/kg bw/day (72w) | negative   |
| Oral            | No information available | rat     | NOAEL (reproductive, female) = 1000 mg/kg bw/day (105w)                                                        | negative   |

**Paraffin waxes and Hydrocarbon waxes (8002-74-2)**

| Exposure routes | Method   | Species | Dose                                                                                                                                           | Evaluation |
|-----------------|----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Oral            | OECD 421 | rat     | NOAEL (p/ reproductive performance) >= 1000 mg/kg bw/day<br>NOAEL Neonatal (F1) >= 1000 mg/kg bw/day<br>Read across with : Chevron 100 Neutral | negative   |

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| <b>cobalt octoate (136-52-7)</b> |                                                     |         |                                      |            |
|----------------------------------|-----------------------------------------------------|---------|--------------------------------------|------------|
| Exposure routes                  | Method                                              | Species | Dose                                 | Evaluation |
| Oral                             | Read-across (Analogy)<br>Cas N°: 7440-48-4 OECD 422 | rat     | NO(A)EL (P&F1) 28d = 30 mg/kg bw/day | positive   |

**Developmental Toxicity** Suspected of damaging the unborn child.

| <b>Developmental Toxicity</b> |                          |         |                                                                                       |            |
|-------------------------------|--------------------------|---------|---------------------------------------------------------------------------------------|------------|
| <b>Styrene (100-42-5)</b>     |                          |         |                                                                                       |            |
| Exposure routes               | Method                   | Species | Dose                                                                                  | Evaluation |
| Inhalation                    | No information available | rat     | NOAEC/LOAEC (maternal toxicity + developemental toxicity) >50d = 1.08 - 2.15 mg/L air | positive   |
| Inhalation                    | OECD 414                 | rat     | LOAEC (maternal toxicity) 6-15d = 1.28 mg/L air                                       | positive   |
| Inhalation                    | OECD 414                 | rat     | NOAEC (developmental toxicity) 6-15d >= 2.56 mg/L air                                 | negative   |
| Inhalation                    | OECD 414                 | rabbit  | NOAEC (maternal toxicity + developmental toxicity) 6-18d = 2.56 mg/L air              | negative   |

| <b>Silica, amorphous, fumed, crystalline-free (112945-52-5)</b> |          |         |                                                                                             |            |
|-----------------------------------------------------------------|----------|---------|---------------------------------------------------------------------------------------------|------------|
| Exposure routes                                                 | Method   | Species | Dose                                                                                        | Evaluation |
| Oral                                                            | OECD 414 | rat     | NOAEL (maternal toxicity) = 1350 mg/kg bw/day<br>NOAEL (teratogenicity) = 1350 mg/kg bw/day | negative   |

| <b>phthalic anhydride (85-44-9)</b> |                                                         |         |                                                                                             |            |
|-------------------------------------|---------------------------------------------------------|---------|---------------------------------------------------------------------------------------------|------------|
| Exposure routes                     | Method                                                  | Species | Dose                                                                                        | Evaluation |
| Oral                                | Read-across (Analogy)<br>phthalic acid Cas N° : 88-99-3 | rat     | NOAEL (maternal toxicity) = 1000 mg/kg bw/day<br>NOAEL (teratogenicity) = 1700 mg/kg bw/day | positive   |

| <b>(2-methoxymethylethoxy)propanol (34590-94-8)</b> |                  |         |                                                     |            |
|-----------------------------------------------------|------------------|---------|-----------------------------------------------------|------------|
| Exposure routes                                     | Method           | Species | Dose                                                | Evaluation |
| Inhalation                                          | EPA OTS 798.4350 | rat     | NOAEL (maternal tox/teratogenicity) 6-15d = 300 ppm | negative   |

| <b>Paraffin waxes and Hydrocarbon waxes (8002-74-2)</b> |          |         |                                                                                                                                                    |            |
|---------------------------------------------------------|----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Exposure routes                                         | Method   | Species | Dose                                                                                                                                               | Evaluation |
| Dermal                                                  | OECD 414 | rat     | LOAEL (maternal toxicity) = 125 mg/kg bw/day<br>NOAEL (teratogenicity) >= 2000 mg/kg bw/day<br>Read across with : 100 SUS solvent refined base oil | negative   |

**Specific target organ toxicity - single exposure** May cause irritation of respiratory tract

**Specific target organ toxicity - repeated exposure** Causes damage to organs through prolonged or repeated exposure , target organ(s) : Central nervous system , Ears

| <b>STOT - repeated exposure</b> |        |         |      |         |
|---------------------------------|--------|---------|------|---------|
| <b>Styrene (100-42-5)</b>       |        |         |      |         |
| Exposure routes                 | Method | Species | Dose | Remarks |



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|            |                          |           |                                                                                                                                                                                         |  |
|------------|--------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Inhalation | OECD 412                 | rat mouse | NOAEC male (28d) = 3.47 mg/L air<br>NOAEC (ototoxicity) 28d = 2.13 mg/L air<br>NOAEC (28d) = 0.181 mg/L air<br>NOAEC (28d) = 0.688 mg/L air                                             |  |
| Inhalation | No information available | rat       | NOAEC (nasal tract) = 0.85 mg/L air<br>NOAEC (overall) = 2.13 mg/L air<br>NOAEC (ototoxicity) = 0.85 mg/L air<br>LOAEC (ototoxicity) = 3.41 mg/L air<br>NOAEC (overall) = 2.13 mg/L air |  |
| Oral       | No information available | rat       | NOAEL (toxicity) = 1000 mg/kg bw/day<br>LOAEL (toxicity) = 2000 mg/kg bw/day                                                                                                            |  |
| Oral       | No information available | mouse     | NOAEL (toxicity) = 150 mg/kg bw /day<br>LOAEL (toxicity) = 300 mg/kg bw /day                                                                                                            |  |
| Inhalation | OECD 453                 | rat       | LOAEC local (toxicity) = 0.21 mg/L air                                                                                                                                                  |  |

**Titanium dioxide (13463-67-7)**

| Exposure routes | Method                   | Species | Dose                                                                                  | Remarks |
|-----------------|--------------------------|---------|---------------------------------------------------------------------------------------|---------|
| Oral            | OECD 407                 | rat     | NOEL (29d) = 24000 mg/kg bw/day                                                       |         |
| Inhalation      | No information available | rat     | NOEC (carcinogenicity) = 50 mg/m³ air<br>NOEC (non-neoplastic changes) = 10 mg/m³ air |         |

**Talc (14807-96-6)**

| Exposure routes | Method              | Species | Dose                            | Remarks |
|-----------------|---------------------|---------|---------------------------------|---------|
| Inhalation      | similar to OECD 412 | rat     | NOAEC (20d) = 2-6-18 mg/m³      |         |
| Oral            | similar to OECD 452 | rat     | NOAEL (101d) = 100 mg/kg bw/day |         |
| Inhalation      | similar to OECD 452 | rat     | NOAEC = 10.8 mg/m³ air          |         |

**Silica, amorphous, fumed, crystalline-free (112945-52-5)**

| Exposure routes | Method                   | Species | Dose                                              | Remarks |
|-----------------|--------------------------|---------|---------------------------------------------------|---------|
| Oral            | OECD 408                 | rat     | NOEL (highest dose) 4000 <= 4500 mg/kg bw/day 90d |         |
| Inhalation      | OECD 413                 | rat     | NOEC = 1.3 mg/m³ air<br>NOEC < 1.3 mg/m³ air 90d  |         |
| Dermal          | No information available | rabbit  | NOAEL >= 10000 mg/kg bw/day                       |         |

**phthalic anhydride (85-44-9)**

| Exposure routes | Method                   | Species | Dose                                                           | Remarks |
|-----------------|--------------------------|---------|----------------------------------------------------------------|---------|
| Oral            | No information available | rat     | NOAEL = 1250 mg/kg bw/day<br>LOAEL = 2500 mg/kg bw/day 7 weeks |         |
| Oral            | No information available | rat     | NOAEL (105 weeks) = 500 mg/kg bw/day                           |         |

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|      |                          |       |                                                                                    |  |
|------|--------------------------|-------|------------------------------------------------------------------------------------|--|
| Oral | No information available | mouse | LOAEL (male) = 2340 mg/kg bw/day<br>LOAEL (female) = 1717 mg/kg bw/day<br>72 weeks |  |
|------|--------------------------|-------|------------------------------------------------------------------------------------|--|

| (2-methoxymethylethoxy)propanol (34590-94-8) |                                                            |         |                                       |         |
|----------------------------------------------|------------------------------------------------------------|---------|---------------------------------------|---------|
| Exposure routes                              | Method                                                     | Species | Dose                                  | Remarks |
| Oral                                         | KANPOGYO No.700, YAKUHATSU No. 1039.61 and KIKYKU No. 1014 | rat     | NOEL/NOAEL (4 weeks) = 200/1000 mg/kg |         |
| Inhalation                                   | similar to OECD 413                                        | rat     | NOAEL (13 weeks) = 200 ppm            |         |
| Dermal                                       | similar to OECD 411                                        | rabbit  | NOAEL (90d) = 2850 mg/kg bw/day       |         |

| Paraffin waxes and Hydrocarbon waxes (8002-74-2) |                                                        |         |                                                                                                                                |         |
|--------------------------------------------------|--------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------|---------|
| Exposure routes                                  | Method                                                 | Species | Dose                                                                                                                           | Remarks |
| Dermal                                           | Read-across (Analogy) Cas N°: 64742-52-5 OECD 410      | rabbit  | NOAEL (28d) = 1000 mg/kg bw/day                                                                                                |         |
| Oral                                             | OECD 408                                               | rat     | NOAEL (Low melting point wax) = 1.5 mg/kg bw/day<br>NOAEL (High melting point and high sulphur wax) = 1500 mg/kg bw/day<br>90d |         |
| Dermal                                           | Read-across (Analogy) : Lubricant Base Oils OECD 411   | rat     | NOAEL (13 weeks) > 2000 mg/kg bw/day                                                                                           |         |
| Dermal                                           | Read-across (Analogy) : MRD-87-016 similar to OECD 453 | mouse   | NOAEL (male) 24 months >= 150 mg/kg bw/day                                                                                     |         |

| cobalt octoate (136-52-7) |                                                              |         |                              |         |
|---------------------------|--------------------------------------------------------------|---------|------------------------------|---------|
| Exposure routes           | Method                                                       | Species | Dose                         | Remarks |
| Oral                      | Read-across (Analogy) cobalt dichloride hexahydrate OECD 408 | rat     | NOAEL (90d) = 3 mg/kg bw/day |         |

**Aspiration hazard** Due to the viscosity, this product does not present an aspiration hazard.

**Other information** None

## SECTION 12: Ecological information

### 12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not flush into surface water or sanitary sewer system

### Acute aquatic toxicity - Component Information

| Chemical Name       | Toxicity to algae                                                          | Toxicity to daphnia and other aquatic invertebrates.                                 | Toxicity to fish                                              | Toxicity to microorganisms                                                              |
|---------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Styrene<br>100-42-5 | EC50 (72h) = 4.9 mg/L (Pseudokirchnerella subcapitata)<br>EPA OTS 797.1050 | EC50 (48h) = 4.7 mg/L (Daphnia magna)<br>NOEC = 1.9 mg/L (Daphnia magna)<br>OECD 202 | LC50 (96h) = 4.02 - 10 mg/L (Pimephales promelas)<br>OECD 203 | EC (30min) = 500 mg/L (Activated sludge of a predominantly domestic sewage)<br>OECD 209 |

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|                                                              |                                                                                                                                                                                                                                     |                                                                  |                                                                                                                                                                                   |                                                                                                                                                        |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Titanium dioxide<br>13463-67-7                               | EC50 (72h) > 10000 mg/L<br>(Skeletonema costatum)<br>ISO 10253                                                                                                                                                                      | LC50 (48h) = 20000 mg/L<br>(Daphnia magna)                       | EC50 (96h) > 100 mg/L<br>(Brachydanio rerio)<br>LC50 (96h) > 1000 mg/L<br>(Fundulus heteroclitus)<br>LC0 (48h) > 1000 mg/L<br>(Leuciscus idus)<br>OECD 203                        | EC50 (3h) > 1000 mg/L,<br>NOEC (3h) >= 1000 mg/L<br>(Activated sludge of a<br>predominantly domestic<br>sewage)<br>OECD 209                            |
| Talc<br>14807-96-6                                           | EC50 (96h) = 7202.700<br>mg/L (Green Algae)<br>NOEC (30d) = 918.089<br>mg/L (Green Algae)<br>QSAR                                                                                                                                   | LC50 (48h) = 36812.359<br>mg/L (Daphnid species)<br>QSAR         | LC50 (96h) = 89581.016<br>mg/L (Fishes species)<br>QSAR                                                                                                                           |                                                                                                                                                        |
| Silica, amorphous, fumed,<br>crystalline-free<br>112945-52-5 |                                                                                                                                                                                                                                     | EL50 (24h) >= 1000 mg/L<br>(Daphnia magna)<br>OECD 202           | LC50 (96h) > 10000 mg/L<br>(Brachydanio rerio)<br>OECD 203                                                                                                                        |                                                                                                                                                        |
| phthalic anhydride<br>85-44-9                                | EC50 (72h) = 68 mg/L,<br>NOEC (72h) = 32 mg/L<br>(Pseudokirchnerella<br>subcapitata)<br>OECD 201                                                                                                                                    | EC50 (48h) = 71 mg/L<br>(Daphnia magna)<br>OECD 202              | LC50 (96h) > 99 mg/L<br>(Oryzias latipes)<br>OECD 203                                                                                                                             | EC50 (3h) > 1000 mg/L<br>(Activated sludge), ISO<br>8192<br>EC50 (16h) = 13 mg/L<br>(Pseudomonas putida), ISO<br>10712                                 |
| (2-methoxymethylethoxy)pr<br>opanol<br>34590-94-8            | EC50 (72h) > 969 mg/L<br>(Pseudokirchnerella<br>subcapitata)<br>OECD 201                                                                                                                                                            | LC50 (48h) = 1919 mg/L<br>(Daphnia magna)<br>Similar to OECD 202 | LC50 (96h) > 1000 mg/L<br>(Poecilia reticulata)<br>OECD 203                                                                                                                       | EC10 (18h) = 4168 mg/L<br>(Pseudomonas putida)<br>No guideline followed                                                                                |
| Paraffin waxes and<br>Hydrocarbon waxes<br>8002-74-2         | NOEL (72h) >= 100 mg/L<br>(Pseudokirchnerella<br>subcapitata), Read across<br>with : N100DW<br>OECD 201                                                                                                                             | LL50 (48h) > 1000 mg/L<br>(Daphnia magna)<br>QSAR                | LL50 (96h) > 1000 mg/L<br>(Oncorhynchus mykiss)<br>QSAR                                                                                                                           | LL50 (40h) > 1000 mg/L<br>(Tetrahymena pyriformis)<br>NOEL (40h) >= 1000 mg/L<br>(Tetrahymena pyriformis)<br>QSAR                                      |
| cobalt octoate<br>136-52-7                                   | EC50 (72h) = 144 µg<br>Codiss./L<br>(Pseudokirchneriella<br>subcapitata)<br>NOEC (72h) = 32.2 µg/L<br>(Pseudokirchneriella<br>subcapitata)<br>LOEC (72h) = 52.7 µg<br>Codiss./L<br>(Pseudokirchneriella<br>subcapitata)<br>OECD 201 |                                                                  | LC50 (96h) = 1.512 mg/L<br>(Oncorhynchus mykiss)<br>NOEC (96h) = 0.939 mg/L<br>(Oncorhynchus mykiss)<br>LOEC (96h) = 1.577 mg/L<br>(Oncorhynchus mykiss)<br>ASTM guideline (1996) | EC10 (30 min) = 3.73 mg/L<br>(Activated sludge)<br>EC50 (30 min) = 120 mg/L<br>(Activated sludge)<br>Read across with Cas N°:<br>7646-79-9<br>OECD 209 |

**Chronic aquatic toxicity - Component Information**

| Chemical Name                                     | Toxicity to algae                                             | Toxicity to daphnia and<br>other aquatic<br>invertebrates.                                                                                      | Toxicity to fish                                                                                                                                                                   | Toxicity to<br>microorganisms |
|---------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Styrene<br>100-42-5                               |                                                               | NOEC (21d) = 1.01 mg/L<br>(Daphnia magna)<br>LOEC (21d) = 2.06 mg/L<br>(Daphnia magna)<br>EC50 (21d) = 1.88 mg/L<br>(Daphnia magna)<br>OECD 203 |                                                                                                                                                                                    |                               |
| Titanium dioxide<br>13463-67-7                    | NOEC (72h) = 5600 mg/L<br>(Skeletonema costatum)<br>ISO 10253 | NOEC (48h) >= 3 mg/L<br>(Daphnia magna)<br>OECD 202, OECD 209                                                                                   |                                                                                                                                                                                    |                               |
| phthalic anhydride<br>85-44-9                     |                                                               | NOEC (reproduction) 21d =<br>16 mg/L, EC50<br>(reproduction) 21d = 42<br>mg/L (Daphnia magna)<br>OECD 211                                       | LC50 (7d) = 560 mg/L<br>(Danio rerio), OECD 210<br>LOEC (total embryotoxicity)<br>60d = 32 mg/L, NOEC<br>(mortality, length, weight,<br>embryotoxicity) 60d = 10<br>mg/L, OECD 210 |                               |
| (2-methoxymethylethoxy)pr<br>opanol<br>34590-94-8 |                                                               | NOEC (22d) >= 0.5 mg/L<br>(Daphnia magna)<br>Similar to OECD 211                                                                                |                                                                                                                                                                                    |                               |

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|                                                   |                                                                                                                                      |                                                                                                                                                            |                                                          |  |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--|
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2 |                                                                                                                                      | NOEL (21d) >= 1000 mg/L<br>(Daphnia magna)<br>QSAR                                                                                                         | NOEL (28d) >= 1000 mg/L<br>(Oncorhynchus mykiss)<br>QSAR |  |
| cobalt octoate<br>136-52-7                        | EC50 (7d) = 90.1 µg/L<br>(Lemna minor)<br>NOEC (7d) = 3.0 µg/L<br>(Lemna minor)<br>LOEC (7d) = 8.8 µg/L<br>(Lemna minor)<br>OECD 221 | NOECR (21d) = 60.8 µg/L<br>(Daphnia magna)<br>LC50 (21d) = 121.3 mg/L<br>(Daphnia magna)<br>LOECR (21d) = 93.3 µg<br>Codiss./L (Daphnia magna)<br>OECD 211 |                                                          |  |

**Effects on terrestrial organisms - Component Information**

| Acute toxicity               |             |                |                               |         |
|------------------------------|-------------|----------------|-------------------------------|---------|
| phthalic anhydride (85-44-9) |             |                |                               |         |
| Acute toxicity               | Test Method | Species        | Values                        | Remarks |
| plants                       |             | Lactuca sativa | EC50 (germination) = 731 mg/L |         |

| Chronic toxicity          |          |                 |                                                                                                                                                                                                          |         |
|---------------------------|----------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Styrene (100-42-5)        |          |                 |                                                                                                                                                                                                          |         |
| Chronic toxicity          | Method   | Species         | Values                                                                                                                                                                                                   | Remarks |
| Toxicity to invertebrates | OECD 207 | Eisenia foetida | LC50 (14d) = 120 mg/kg soil dw<br>LOEC (burrowing time and mean percent weight change) = 65 mg/kg soil dw<br>LOEC (survival) = 180 mg/kg soil dw<br>NOEC (mean percent weight change) = 34 mg/kg soil dw |         |

| (2-methoxymethylethoxy)propanol (34590-94-8) |          |                     |                      |         |
|----------------------------------------------|----------|---------------------|----------------------|---------|
| Chronic toxicity                             | Method   | Species             | Values               | Remarks |
| plants                                       | OECD 227 | Grossypium hirsutum | NOEC (21d) = 250 g/L |         |

**12.2. Persistence and degradability**

| Chemical Name                                     | Biodegradation                                        | Evaluation                |
|---------------------------------------------------|-------------------------------------------------------|---------------------------|
| Styrene<br>100-42-5                               | 87% (20d) similar to OECD 301D                        | Readily biodegradable     |
| phthalic anhydride<br>85-44-9                     | 68 % (10d), 74 % (30d)<br>OECD 301 D                  | Readily biodegradable     |
| (2-methoxymethylethoxy)propanol<br>34590-94-8     | 96 % (28d) DOC removal, 75 % (10d)<br>OECD 301F       | Readily biodegradable     |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2 | 31 % (28d) OECD 301F<br>Read across with : MRD-94-981 | Inherently biodegradable. |
| cobalt octoate<br>136-52-7                        | 60% (> 10d), OECD 301 B                               | Readily biodegradable     |

**12.3. Bioaccumulative potential**

| Bioconcentration factor (BCF) |         |                               |
|-------------------------------|---------|-------------------------------|
| Styrene (100-42-5)            |         |                               |
| Method                        | Species | Bioconcentration factor (BCF) |
| Calculation method            |         | 74                            |

| Titanium dioxide (13463-67-7) |                     |                               |
|-------------------------------|---------------------|-------------------------------|
| Method                        | Species             | Bioconcentration factor (BCF) |
| no data available             | Oncorhynchus mykiss | 20 L/kg (14d)                 |

| phthalic anhydride (85-44-9) |         |                               |
|------------------------------|---------|-------------------------------|
| Method                       | Species | Bioconcentration factor (BCF) |

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|                    |  |            |
|--------------------|--|------------|
| Calculation method |  | 3.16 - 3.4 |
|--------------------|--|------------|

| Chemical Name                                 | log Pow |
|-----------------------------------------------|---------|
| Styrene<br>100-42-5                           | 3       |
| Talc<br>14807-96-6                            | -9.4    |
| phthalic anhydride<br>85-44-9                 | 1.6     |
| (2-methoxymethylethoxy)propanol<br>34590-94-8 | 0.0043  |

**12.4. Mobility in soil**

| Chemical Name                 | LogKoc | Koc   |
|-------------------------------|--------|-------|
| Styrene<br>100-42-5           | 2.55   | 352   |
| Talc<br>14807-96-6            | 1.5027 | 31.82 |
| phthalic anhydride<br>85-44-9 | -      | 31    |

**12.5. Results of PBT and vPvB assessment**

| Chemical Name                                             | PBT                                                                                 | vPvB                                                                                    |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Styrene<br>100-42-5                                       | This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). | This substance is not considered to be very persistent nor very bioaccumulating (vPvB). |
| Titanium dioxide<br>13463-67-7                            | This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). | This substance is not considered to be very persistent nor very bioaccumulating (vPvB). |
| Talc<br>14807-96-6                                        | This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). | This substance is not considered to be very persistent nor very bioaccumulating (vPvB). |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). | This substance is not considered to be very persistent nor very bioaccumulating (vPvB). |
| phthalic anhydride<br>85-44-9                             | This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). | This substance is not considered to be very persistent nor very bioaccumulating (vPvB). |
| (2-methoxymethylethoxy)propanol<br>34590-94-8             | This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). | This substance is not considered to be very persistent nor very bioaccumulating (vPvB). |
| Paraffin waxes and Hydrocarbon waxes<br>8002-74-2         | This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). | This substance is not considered to be very persistent nor very bioaccumulating (vPvB). |

**12.6. Autres effets néfastes**

None known.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Waste from Residues/Unused Products**

Dispose of in accordance with the European Directives on waste and hazardous waste.  
Do not flush into surface water or sanitary sewer system

**Contaminated packaging**

Empty containers should be taken to an approved waste handling site for recycling or disposal.

**Other information**

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.  
Waste codes should be assigned by the user based on the application for which the product was used.

**SECTION 14: Transport information**

14.1. UN number

|           |        |
|-----------|--------|
| ADR/RID   | UN1866 |
| IMDG/IMO  | UN1866 |
| ICAO/IATA | UN1866 |
| ADN       | UN1866 |

14.2. UN proper shipping name

|           |                                                                  |
|-----------|------------------------------------------------------------------|
| ADR/RID   | Resin solution<br>UN1866, RESIN SOLUTION, 3, PG III, (D/E)       |
| IMDG/IMO  | Resin solution<br>UN1866, RESIN SOLUTION, 3, PG III, (31°C c.c.) |
| ICAO/IATA | UN1866, RESIN SOLUTION, 3, PG III                                |
| ADN       | Resin solution<br>UN1866, RESIN SOLUTION, 3, PG III              |

14.3. Transport hazard class(es)

|           |                     |   |
|-----------|---------------------|---|
| ADR/RID   | <b>Hazard class</b> | 3 |
| IMDG/IMO  | <b>Hazard class</b> | 3 |
| ICAO/IATA | <b>Hazard class</b> | 3 |
| ADN       | <b>Hazard class</b> | 3 |

14.4. Packing group

|           |     |
|-----------|-----|
| ADR/RID   | III |
| IMDG/IMO  | III |
| ICAO/IATA | III |
| ADN       | III |

14.5. Environmental hazards

|                  |    |
|------------------|----|
| ADR/RID          | No |
| IMDG/IMO         | No |
| Marine pollutant | No |
| ICAO/IATA        | No |
| ADN              | No |

14.6. Special precautions for user

|                                |       |
|--------------------------------|-------|
| ADR/RID                        |       |
| <b>Classification Code</b>     | F1    |
| <b>Tunnel restriction code</b> | (D/E) |
| <b>Limited quantity</b>        | 5 L   |
| IMDG/IMO                       |       |

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|                     |          |
|---------------------|----------|
| EmS                 | F-E, S-E |
| Limited quantity    | 5 L      |
| ICAO/IATA           |          |
| ERG Code            | 3L       |
| Limited quantity    | 10 L     |
| ADN                 |          |
| Classification Code | F1       |
| Limited quantity    | 5 L      |
| ventilation         | VE01     |

Special precautions for users

**Special precautions** No information available

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

**Transport in bulk according to MARPOL 73/78 and the IBC Code** not applicable

### SECTION 15: Regulatory information

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

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

Regulation (EC) No. 1272/2008 (CLP)

Regulation (EU) No. 830/2015

Directive 88/642/EEC

Directive 98/24/EC

Directive 1999/92/EC

Directive 2012/18/EU

The mixture is subject to restrictions on use, see Annex XVII of the Regulation 1907/2006/EC (REACH): Column 1, n° 3; Column 1, n° 40.

#### European Union

| Chemical Name      | 96/82/EC (SEVESO) - §9 | 96/82/EC (SEVESO) - §6, §7  |
|--------------------|------------------------|-----------------------------|
| Styrene - 100-42-5 | 50000                  | 5000 tonnes<br>50000 tonnes |

#### National regulatory information

##### The United Kingdom

Avoid exceeding of the given occupational exposure limits (see section 8).

##### Ireland

Avoid exceeding of the given occupational exposure limits (see section 8).

#### 15.2. Chemical safety assessment

Chemical Safety Assessment

Yes

**Exposure scenario**

Relevant information for risk control are communicated in the form of exposure scenario attached to the safety data sheet.

### SECTION 16: Other information

**Full text of H-Statements referred to under sections 2 and 3**

H226 - Flammable liquid and vapour

H302 - Harmful if swallowed

H304 - May be fatal if swallowed and enters airways

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

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H360Fd - May damage fertility. Suspected of damaging the unborn child

H361d - Suspected of damaging the unborn child

H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

H400 - Very toxic to aquatic life

H411 - Toxic to aquatic life with long lasting effects

H412 - Harmful to aquatic life with long lasting effects

EUH208 - May produce an allergic reaction

**Training Advice**

Handle in accordance with good industrial hygiene and safety practice. To avoid risks to man and the environment, comply with the instructions for use.

**Sources of key data used to compile the datasheet**

ECHA

**Former date**

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**Revision date**

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**Revision Note**

SDS sections updated : 1 , 2 , 3 , 8 , 11 , 12

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006****Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**



## Scenario 1: Manufacturing of UP/VE resins and formulated resins (Gelcoat, Coulour Paste, Putty, Bonding paste/Adhesive) (ES1)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.

The following scenarios contribute to the scenario *Manufacturing of UP/VE resins and formulated resins (Gelcoat, Coulour Paste, Putty, Bonding paste/Adhesive)*.

*This document has been prepared using REACH-Practical-Guide-on-Safe-Use-Information-for-Mixtures-under-REACH-The-LCID-Methodology, considering exposure scenario of relevant raw materials contained in the mixture.*

The corresponding release to the environment, exposure of workers resulting from these contributing scenarios is summarized below.

Table 1. Description of ES 1

|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Free short title</b>                                                       | Manufacturing of UP/VE resins and formulated resins (Gelcoat, Coulour Paste, Putty, Bonding paste/Adhesive) (ES1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Systematic title based on use descriptor</b>                               | ERC 2; PROC 1, 3, 4, 5, 8a, 8b, 9, 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Name of contributing environmental scenario and corresponding ERC</b>      | ERC 2 – Formulation into mixture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Name(s) of contributing worker scenarios and corresponding PROCs</b>       | PROC 1 - Chemical production in closed process<br><br>PROC 3 - Use in closed batch process (synthesis or formulation)<br><br>PROC 4 - Chemical production where opportunity for exposure arises<br><br>PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact)<br><br>PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities<br><br>PROC 8b - Transfer of substance or mixture (charging and discharging) at dedicated facilities<br><br>PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)<br><br>PROC 15 - Use of laboratory reagents in small scale laboratories |
| <b>Contributing Scenario (1) controlling environmental exposure for ERC 2</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Operational conditions (referred to styrene)</b>                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Daily amount used at site                                                     | 45700 kg/day (referred to styrene)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Release times per year                                                             | 300 days/year ( <i>justification: Continuous release</i> )                                                                                                                                                                                                                                                                                                                                                                                                           |
| Local freshwater dilution factor                                                   | 41                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Local marine water dilution factor                                                 | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Release fraction to air from process                                               | 0.102 %                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Release fraction to wastewater from process                                        | 0.00063 %                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Release fraction to soil from process                                              | 0.0025 %                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fraction tonnage to region                                                         | 10 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Fraction used at main source                                                       | 60 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| STP                                                                                | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| River flow rate                                                                    | 18000 m <sup>3</sup> /day                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Municipal sewage treatment plant discharge                                         | 2000000 L/day                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other modified EUSES values</b> ( <i>referred to styrene</i> )                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fraction released to agricultural soil (Femis.agric)                               | 0 % ( <i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i> )                                                                                                                                                                                                                                                                                                                                           |
| Fraction released to industrial soil (Femis.ind)                                   | 0 % ( <i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i> )                                                                                                                                                                                                                                                                                                                                           |
| Fraction released to waste water (Femis.water)                                     | 0.00063 % ( <i>justification: EU Risk Assessment Report, 2002</i> )                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fraction released to air (Femis.air)                                               | 0.102 % ( <i>justification: EU Risk Assessment Report, 2002</i> )                                                                                                                                                                                                                                                                                                                                                                                                    |
| Fraction used at main source                                                       | 60 % ( <i>justification: Value adopted to account for Worst-case European manufacturing site</i> )                                                                                                                                                                                                                                                                                                                                                                   |
| Fraction of emission directed to water by local STP (Fstp.water)                   | 0.081 - ( <i>justification: Efficiency STP 91.9%</i> )                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Contributing Scenario (2) controlling industrial worker exposure for PROC 1</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Name of contributing scenario                                                      | 1 - Use in closed process, no likelihood of exposure                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Scenario subtitle                                                                  | Use in contained batch processes.<br>Closed processes                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Qualitative Risk Assessment</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| General                                                                            | Use in semi-automated and predominantly enclosed filling lines.<br>Provide a good standard of general ventilation.<br>Natural ventilation is from windows and doors etc.<br>Controlled ventilation means air is supplied or removed by a powered fan.<br>Ensure good work practices are implemented.<br>Provide basic employee training to prevent/minimize exposures.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Use suitable eye protection. |
| <b>Product characteristics</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Physical state                                                                     | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Concentration in substance                                                         | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Ventilation                                                                                                               | enhanced (>30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Local exhaust ventilation                                                                                                 | no                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Respiratory protection                                                                                                    | no                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Contributing Scenario (3) controlling industrial worker exposure for PROC 3</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Name of contributing scenario</b>                                                                                      | 3 - Use in closed batch process (synthesis or formulation)                                                                                                                                                                                                                                                                                                                                                                                                           |
| Scenario subtitle                                                                                                         | Bulk transfers.<br>Receipt and storage of raw materials in bulk or as packed goods, indoor and outdoor;<br>Raw material assembly and charging; dispensing of liquids and solids via pipeline;                                                                                                                                                                                                                                                                        |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| General                                                                                                                   | Use in semi-automated and predominantly enclosed filling lines;<br>Use bulk or semi-bulk handling systems.<br>Drain down and flush system prior to equipment break-in or maintenance.<br>Provide extract ventilation to points where emissions occur.<br>Ensure good work practices are implemented.<br>Provide basic employee training to prevent/minimize exposures.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Use suitable eye protection. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Duration of activity                                                                                                      | 15 min.-1 hour                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ventilation                                                                                                               | enhanced (>30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Respiratory protection                                                                                                    | no                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Contributing Scenario (4) controlling industrial worker exposure for PROC 3</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Name of contributing scenario</b>                                                                                      | 3 - Use in closed batch process (synthesis or formulation)                                                                                                                                                                                                                                                                                                                                                                                                      |
| Scenario subtitle                                                                                                         | Dissolving linear UP/VE polymer in blending vessel (or dissolver)                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| General                                                                                                                   | <p>Use in semi-automated and predominantly enclosed filling lines;</p> <p>Drain down and flush system prior to equipment break-in or maintenance.</p> <p>Apply vessel entry procedures including use of forced supplied air.</p> <p>Ensure good work practices are implemented.</p> <p>Provide basic employee training to prevent/minimize exposures.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Use suitable eye protection.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Local exhaust ventilation                                                                                                 | no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Respiratory protection                                                                                                    | no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Contributing Scenario (5) controlling industrial worker exposure for PROC 3</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Name of contributing scenario</b>                                                                                      | 3 - Use in closed batch process (synthesis or formulation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Scenario subtitle                                                                                                         | Equipment cleaning and maintenance.<br>Cleaning and maintenance of blending vessel, roadtankers etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| General                                                                                                                   | Use in semi-automated and predominantly enclosed filling lines.<br>Drain or remove substance from equipment prior to break-in or maintenance.<br>Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).<br>Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.<br>Ensure good work practices are implemented.<br>Provide basic employee training to prevent/minimize exposures.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Use suitable eye protection.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Contributing Scenario (6) controlling industrial worker exposure for PROC 4</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Name of contributing scenario</b>                                                                                      | 4 - Use in batch and other process (synthesis) where opportunity for exposure arises                                                                                                                                                                                                                                                                                                                                                                                             |
| Scenario subtitle                                                                                                         | Material transfers.<br>All internal transport. Raw material assembly and charging / raw material dispensing of liquids and solids manually from bulk storage or packed goods into blending tank.                                                                                                                                                                                                                                                                                 |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| General                                                                                                                   | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).<br>Provide extract ventilation to points where emissions occur.<br>Ensure good work practices are implemented.<br>Provide basic employee training to prevent/minimize exposures.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Use suitable eye protection.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ventilation                                                                                                               | Good (>30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                                                             |

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| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Contributing Scenario (7) controlling industrial worker exposure for PROC 4</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Name of contributing scenario</b>                                                                                      | 4 - Use in batch and other process (synthesis) where opportunity for exposure arises                                                                                                                                                                                                                                                                                                                                                                                   |
| Scenario subtitle                                                                                                         | Process sampling.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| General                                                                                                                   | <p>Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour):</p> <p>Avoid dip sampling.</p> <p>Ensure good work practices are implemented.</p> <p>Provide basic employee training to prevent/minimize exposures.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Use suitable eye protection.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Duration of activity                                                                                                      | 15 min.-1 hour                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ventilation                                                                                                               | Good (>30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Contributing Scenario (8) controlling industrial worker exposure for PROC 5</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Name of contributing scenario</b>                                                                                      | 5 - Mixing or blending in batch processes (multistage and/or significant contact)                                                                                                                                                                                                                                                                                                                                                                                      |

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| Scenario subtitle                                                                                                         | Drum/batch transfers;<br>Pouring from small containers;<br>Transfer from/pouring from containers;<br>Mixing operations (open systems).<br>Mixing liquid and solid components / into final formulated resin in blending vessel                                                                                                                                                                                                                                                                                                   |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| General                                                                                                                   | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).<br>Keep lids of containers closed during blending.<br>Ensure good work practices are implemented.<br>Provide basic employee training to prevent/minimize exposures.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Use suitable eye protection.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Concentration in substance                                                                                                | 100%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Contributing Scenario (9) controlling industrial worker exposure for PROC 8A</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Name of contributing scenario                                                                                             | 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Scenario subtitle                                                                                                         | Equipment cleaning and maintenance.<br>Cleaning and maintenance of pipes, pumps, filters, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| General                                                                                                                   | <p>Drain down system prior to equipment break-in or maintenance.</p> <p>Drain or remove substance from equipment prior to break-in or maintenance.</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local exhaust ventilation                                                                                                 | inhalation: 70 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Contributing Scenario (10) controlling industrial worker exposure for PROC 8A</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Name of contributing scenario</b>                                                                                      | 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Scenario subtitle</b>                                                                                                  | <p>Disposal of wastes.</p> <p>Handling of non cured waste;</p> <p>Waste management / handling and storage of waste for removal for off-site treatment or for on-site treatment like incineration and/or biological waste water treatment</p>                                                                                                                                                                                                                                                                                                                 |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                                                                                                                   | <p>Provide a good standard of general ventilation.<br/>Controlled ventilation means air is supplied or removed by a powered fan.<br/>Ensure good work practices are implemented<br/>Provide basic employee training to prevent/minimize exposures<br/>Dispose of empty containers and wastes safely.<br/>Dispose of waste in accordance with environmental legislation.<br/>Use suitable chemically resistant gloves, tested to EN374.<br/>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.<br/>Use suitable eye protection.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Duration of activity                                                                                                      | <1 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Location                                                                                                                  | Indoors/outdoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Local exhaust ventilation                                                                                                 | no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Contributing Scenario (11) controlling industrial worker exposure for PROC 8b</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Name of contributing scenario</b>                                                                                      | 8b -Transfer of chemicals from/to vessels/ large containers at dedicated facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Scenario subtitle                                                                                                         | <p>Bulk transfers.<br/>All activities related to transport finished product to customer.<br/>Dispensing final UP/VE resin (linear UP/VE polymer + styrene + additives) into roadtanker</p>                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                                                                                                                   | <p>Fill containers/cans at dedicated fill points supplied with local extract ventilation.</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Use suitable eye protection.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                |
| Local exhaust ventilation                                                                                                 | inhalation: 70 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                                |
| <b>Contributing Scenario (12) controlling industrial worker exposure for PROC 9</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Name of contributing scenario</b>                                                                                      | 9 -Transfer of chemicals into small containers (dedicated filling line)                                                                                                                                                                                                                                                                                                                                                             |
| Scenario subtitle                                                                                                         | <p>Bulk transfers.</p> <p>All activities related to transport finished product to customer.</p> <p>Dispensing final UP/VE resin (linear UP/VE polymer + styrene + additives) / into storage tank, IBC, drum or pail.</p>                                                                                                                                                                                                            |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                                                                                                                           |                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                                                                                                                   | Fill containers/cans at dedicated fill points supplied with local extract ventilation.<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable chemically resistant gloves, tested to EN374.<br>Use suitable eye protection. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                     |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                              |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                               |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                              |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                     |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                  |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                       |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                     |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                 |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                     |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                             |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                          |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                     |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                 |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                     |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                   |
| Respiratory protection                                                                                                    | no                                                                                                                                                                                                                                                                                                  |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                |
| <b>Contributing Scenario (13) controlling industrial worker exposure for PROC 15</b>                                      |                                                                                                                                                                                                                                                                                                     |
| <b>Name of contributing scenario</b>                                                                                      | 15 - Use of laboratory reagents in small scale laboratories                                                                                                                                                                                                                                         |
| Scenario subtitle                                                                                                         | Laboratory activities.<br>All laboratory activities.<br>Quality control work of samples from reactor and blending vessel.<br>R&D work including handling of samples from 1 kg to 1 drum.                                                                                                            |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                     |
| General                                                                                                                   | Carry out in a vented booth or extracted enclosure.<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.                                    |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                     |

|                                                                                                                           |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Physical state                                                                                                            | liquid                                                                                               |
| Concentration in substance                                                                                                | 100 %                                                                                                |
| Fugacity / Dustiness                                                                                                      | medium                                                                                               |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                      |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                   |
| Frequency of use                                                                                                          | 5 days / week                                                                                        |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                      |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                  |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                      |
| Location                                                                                                                  | indoors                                                                                              |
| Domain                                                                                                                    | industrial                                                                                           |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                      |
| Local exhaust ventilation                                                                                                 | yes                                                                                                  |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                      |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                    |
| Respiratory protection                                                                                                    | no                                                                                                   |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> ) |

## Scenario 2: FRP manufacturing in an industrial setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES2)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.

The following scenarios contribute to the scenario *FRP manufacturing in an industrial setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.)*.

*This document has been prepared using REACH-Practical-Guide-on-Safe-Use-Information-for-Mixtures-under-REACH-The-LCID-Methodology, considering exposure scenario of relevant raw materials contained in the mixture.*

The corresponding release to the environment, exposure of workers resulting from these contributing scenarios is summarized below.

Table 2. Description of ES 2

|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Free short title</b>                                                        | FRP manufacturing in an industrial setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Systematic title based on use descriptor</b>                                | ERC 6D; PROC 3, 5, 7, 8A, 10, 13, 14, 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Name of contributing environmental scenario and corresponding ERC</b>       | ERC 6d Production of resins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Name(s) of contributing worker scenarios and corresponding PROCs</b>        | <p>PROC 3 - Use in closed batch process (synthesis or formulation)</p> <p>PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact)</p> <p>PROC 7 - Industrial spraying</p> <p>PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities</p> <p>PROC 10 - Roller application or brushing</p> <p>PROC 13 - Treatment of articles by dipping and pouring</p> <p>PROC 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC 15 - Use of laboratory reagents in small scale laboratories</p> |
| <b>Contributing Scenario (1) controlling environmental exposure for ERC 6D</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Operational conditions (referred to styrene)</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Daily amount used at site                                                      | 161000 kg/day (referred to styrene)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Release times per year                                                         | 300 days/year (justification: Continuous release)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Local freshwater dilution factor                                               | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                                                                                    |                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local marine water dilution factor                                                 | 100                                                                                                                                                                                                                                                        |
| Release fraction to air from process                                               | 0.102 %                                                                                                                                                                                                                                                    |
| Release fraction to wastewater from process                                        | 0.00063 %                                                                                                                                                                                                                                                  |
| Release fraction to soil from process                                              | 0.025 %                                                                                                                                                                                                                                                    |
| Fraction tonnage to region                                                         | 10 %                                                                                                                                                                                                                                                       |
| Fraction used at main source                                                       | 60 %                                                                                                                                                                                                                                                       |
| STP                                                                                | yes                                                                                                                                                                                                                                                        |
| River flow rate                                                                    | 18000 m <sup>3</sup> /day                                                                                                                                                                                                                                  |
| Municipal sewage treatment plant discharge                                         | 2000000 L/day                                                                                                                                                                                                                                              |
| <b>Other modified EUSES values</b>                                                 |                                                                                                                                                                                                                                                            |
| Fraction released to agricultural soil (Femis.agric)                               | 0 % ( <i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i> )                                                                                                                                 |
| Fraction released to industrial soil (Femis.ind)                                   | 0 % ( <i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i> )                                                                                                                                 |
| Fraction released to waste water (Femis.water)                                     | 0.00063 % ( <i>justification: EU Risk Assessment Report, 2002</i> )                                                                                                                                                                                        |
| Fraction released to air (Femis.air)                                               | 0.102 % ( <i>justification: EU Risk Assessment Report, 2002</i> )                                                                                                                                                                                          |
| Fraction used at main source                                                       | 60 % ( <i>justification: Value adopted to account for Worst-case European manufacturing site</i> )                                                                                                                                                         |
| Fraction of emission directed to water by local STP (Fstp.water)                   | 0.081 - ( <i>justification: Efficiency STP 91.9%</i> )                                                                                                                                                                                                     |
| <b>Contributing Scenario (2) controlling industrial worker exposure for PROC 3</b> |                                                                                                                                                                                                                                                            |
| Name of contributing scenario                                                      | 3 - Use in closed batch process (synthesis or formulation)                                                                                                                                                                                                 |
| Scenario subtitle                                                                  | Material transfers;<br>Automated process with (semi) closed systems;<br>Use in contained batch processes.<br>Resin injection and transfer processes, such as vacuum infusion, RTM, impregnation of sewer relining sleeves                                  |
| <b>Qualitative Risk Assessment</b>                                                 |                                                                                                                                                                                                                                                            |
| General                                                                            | Put lids on containers immediately after use.<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374. |
| <b>Product characteristics</b>                                                     |                                                                                                                                                                                                                                                            |
| Physical state                                                                     | liquid                                                                                                                                                                                                                                                     |
| Concentration in substance                                                         | 100 %                                                                                                                                                                                                                                                      |
| Fugacity / Dustiness                                                               | medium                                                                                                                                                                                                                                                     |
| <b>Frequency and duration of use</b>                                               |                                                                                                                                                                                                                                                            |
| Duration of activity                                                               | >4 hours (default)                                                                                                                                                                                                                                         |

|                                                                                                                           |                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                             |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                           |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                                                                                                                       |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                           |
| Location                                                                                                                  | indoors                                                                                                                                                                                                   |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                           |
| Local exhaust ventilation                                                                                                 | no                                                                                                                                                                                                        |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                           |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                         |
| Respiratory protection                                                                                                    | no                                                                                                                                                                                                        |
| <b>Contributing Scenario (3) controlling industrial worker exposure for PROC 3</b>                                        |                                                                                                                                                                                                           |
| <b>Name of contributing scenario</b>                                                                                      | 3 - Use in closed batch process (synthesis or formulation)                                                                                                                                                |
| Scenario subtitle                                                                                                         | Material transfers.<br>Product delivery/storage - delivery of bulk and packaged products - outdoor / indoor                                                                                               |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                           |
| General                                                                                                                   | Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                           |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                    |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                     |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                    |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                           |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                        |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                             |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                           |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                                                                                                                       |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                           |
| Location                                                                                                                  | indoors                                                                                                                                                                                                   |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                           |
| Local exhaust ventilation                                                                                                 | no                                                                                                                                                                                                        |



|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                           |
| Respiratory protection                                                                                                    | no                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Contributing Scenario (4) controlling industrial worker exposure for PROC 5</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Name of contributing scenario</b>                                                                                      | 5 - Mixing or blending in batch processes (multistage and/or significant contact)                                                                                                                                                                                                                                                                                                                                           |
| Scenario subtitle                                                                                                         | Drum/batch transfers;<br>Pouring from small containers;<br>Transfer from/pouring from containers;<br>Mixing operations (open systems).<br>Loading of mixing equipment; Preparation of material for application; (liquid products) - batch, indoor                                                                                                                                                                           |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| General                                                                                                                   | Put lids on containers immediately after use.<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                          |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                           |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                        |

### Contributing Scenario (5) controlling industrial worker exposure for PROC 5

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| Name of contributing scenario                                                                                             | 5 - Mixing or blending in batch processes (multistage and/or significant contact)                                                                                                                                                                                                                                                                                          |
| Scenario subtitle                                                                                                         | Casting operations;<br>Mixing operations (open systems).<br>Casting and mixing operations in (semi-) open containers.<br>Examples are centrifugal casting, casting of polymer concrete and artificial marble and the manufacturing of SMC / BMC/ TMC, etc                                                                                                                  |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                            |
| General                                                                                                                   | Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                            |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                     |
| Concentration in substance                                                                                                | 5-60%                                                                                                                                                                                                                                                                                                                                                                      |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                         |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                              |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                            |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                    |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                            |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                            |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                          |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occur                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                       |
| <b>Contributing Scenario (6) controlling industrial worker exposure for PROC 5</b>                                        |                                                                                                                                                                                                                                                                                                                                                                            |
| Name of contributing scenario                                                                                             | 5 - Mixing or blending in batch processes (multistage and/or significant contact)                                                                                                                                                                                                                                                                                          |

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| Scenario subtitle                                                                                                         | General exposures (closed systems).<br>Mixing liquid and solid components / into final formulated resin in blending vessel; Examples are gelcoat blending and compounding, formulation of repair putties, bonding pastes, chemical anchoring, etc                                                                                                                                                                           |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| General                                                                                                                   | Put lids on containers immediately after use.<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                          |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ventilation                                                                                                               | enhanced (70%)                                                                                                                                                                                                                                                                                                                                                                                                              |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                           |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | inhalation: 70 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                        |
| <b>Contributing Scenario (7) controlling industrial worker exposure for PROC 7</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Name of contributing scenario                                                                                             | 7 - Industrial spraying                                                                                                                                                                                                                                                                                                                                                                                                     |
| Scenario subtitle                                                                                                         | Spraying;<br>Spraying (automatic/robotic)<br>All open mould applications where resins is applied by automated spraying or by robot in a spray cabin without direct worker involvement. Examples are spray lamination, gelcoat spraying and "chop-hoop" filament winding                                                                                                                                                     |

| Qualitative Risk Assessment                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| General                                                                                                                   | <p>Ensure the ventilation system is regularly maintained and tested</p> <p>Dispose of empty containers and wastes safely</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Wear suitable coveralls to prevent exposure to the skin</p> <p>Use suitable eye protection.</p> <p>Wear suitable face shield</p> <p>Wear chemically resistant gloves tested to EN374, in combination with intensive management supervision control.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> |
| Product characteristics                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Frequency and duration of use                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Human factors not influenced by risk management                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Exposed skin surface                                                                                                      | 1,500 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Other given operational conditions affecting workers exposure                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Technical conditions and measures to control dispersion and exposure                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Carry out in a vented booth or extracted enclosure                                                                        | inhalation: 95 % ( <i>justification: Carry out in a vented booth or extracted enclosure</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Contributing Scenario (8) controlling industrial worker exposure for PROC 7                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Name of contributing scenario                                                                                             | 7 - Industrial spraying                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Scenario subtitle                                                                                                         | <p>Spraying;</p> <p>Spraying (manually)</p> <p>All open mould applications where resins is applied by manual spraying in an open work environment. Examples are spray lamination, gelcoat spraying and “chop-hoop” filament winding</p>                                                                                                                                                                                                                                                                                                                                                                                 |
| Qualitative Risk Assessment                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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| General                                                                                                                   | <p>Carefully pour from containers</p> <p>Use long handled tools where possible</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Wear suitable face shield.</p> <p>Wear suitable coveralls to prevent exposure to the skin</p> <p>Wear chemically resistant gloves tested to EN374 in combination with intensive management supervision control.</p> <p>Wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Exposed skin surface                                                                                                      | 1,500 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Respiratory protection                                                                                                    | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | inhalation: 95 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Contributing Scenario (9) controlling industrial worker exposure for PROC 8A</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Name of contributing scenario                                                                                             | 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Scenario subtitle                                                                                                         | Equipment maintenance;<br>Maintenance of small items.<br>Equipment cleaning and maintenance                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| General                                                                                                                   | Drain or remove substance from equipment prior to break-in or maintenance.<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                                     |
| Local exhaust ventilation                                                                                                 | inhalation: 70 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                                                     |
| <b>Contributing Scenario (10) controlling industrial worker exposure for PROC 8A</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Name of contributing scenario</b>                                                                                      | 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Scenario subtitle</b>                                                                                                  | Disposal of wastes.<br>Handling of non cured waste; Waste management / handling and storage of waste for removal for off-site treatment or for on-site treatment like incineration and/or biological waste water treatment                                                                                                                                                                                                                               |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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| General                                                                                                                   | Put lids on containers immediately after use.<br>Contain and dispose of waste according to local regulations<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Location                                                                                                                  | Indoors/outdoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Contributing Scenario (11) controlling industrial worker exposure for PROC 10</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Name of contributing scenario</b>                                                                                      | 10 - Roller application or brushing                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Scenario subtitle                                                                                                         | Rolling, Brushing;<br>Roller, spreader, flow application<br>All open mould applications where resins is applied by brushing, rolling and other low energy spreading operations;<br>Examples are handlamination, gelcoatbrushing, filament winding                                                                                                                                                                                                                                          |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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| General                                                                                                                   | Use long handled brushes and rollers where possible<br>Ensure the ventilation system is regularly maintained and tested<br>Dispose of empty containers and wastes safely<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Ventilation                                                                                                               | enhanced (70%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Local exhaust ventilation                                                                                                 | inhalation: 70 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Contributing Scenario (12) controlling industrial worker exposure for PROC 10</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Name of contributing scenario                                                                                             | 10 - Roller application or brushing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Scenario subtitle                                                                                                         | Dipping, immersion and pouring;<br>Rolling, Brushing;<br>Roller, spreader, flow application<br>Application of repair putties; Application of bonding pastes / adhesives.                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                                                                                                                   | <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>Wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                         |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                  |
| Concentration in substance                                                                                                | 100%                                                                                                                                                                                                                                                                                                                                                                    |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                         |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                      |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                           |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                         |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                     |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                         |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                 |
| Ventilation                                                                                                               | enhanced (70%)                                                                                                                                                                                                                                                                                                                                                          |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                              |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                         |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                         |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                       |
| Respiratory protection                                                                                                    | yes                                                                                                                                                                                                                                                                                                                                                                     |
| Local exhaust ventilation                                                                                                 | inhalation: 70 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                    |
| <b>Contributing Scenario (13) controlling industrial worker exposure for PROC 13</b>                                      |                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Name of contributing scenario</b>                                                                                      | 13 - Treatment of articles by dipping and pouring                                                                                                                                                                                                                                                                                                                       |
| Scenario subtitle                                                                                                         | <p>Dipping, immersion and pouring;</p> <p>Continuous process.</p> <p>Continuous processes with open impregnation steps, such as pultrusion with open impregnation baths and (semi-) continuous production of flat laminates</p>                                                                                                                                         |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                         |

|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                                                                                                                   | <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                       |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                 |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                    |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                       |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                               |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                       |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                       |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                     |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                       |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                                                  |
| <b>Contributing Scenario (14) controlling industrial worker exposure for PROC 14</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Name of contributing scenario</b>                                                                                      | 14 - Production of preparations or articles by tableting, compression, extrusion, pelletisation                                                                                                                                                                                                                                                                                                       |
| Scenario subtitle                                                                                                         | <p>Material transfers;</p> <p>Production or preparation or articles by tableting, compression, extrusion or pelletisation;</p> <p>Treatment by heating;</p> <p>Batch processes at elevated temperatures.</p> <p>Processes where curing of UP / VE resins takes place at high temperature. Examples are pultrusion with injection dies and processing of SMC / BMC / TMC, etc</p>                      |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                       |

|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                                                                                                                   | <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>In case of potential exposure:</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                             |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                      |
| Concentration in substance                                                                                                | 100%                                                                                                                                                                                                                                                                                                                                                                        |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                             |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                          |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                               |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                             |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                         |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                             |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                     |
| Ventilation                                                                                                               | enhanced (70%)                                                                                                                                                                                                                                                                                                                                                              |
| Domain                                                                                                                    | industrial                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                             |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                           |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                             |
| Local exhaust ventilation                                                                                                 | inhalation: 70 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> )                                                                                                                                                                                                                                                                        |
| <b>Contributing Scenario (15) controlling industrial worker exposure for PROC 15</b>                                      |                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Name of contributing scenario</b>                                                                                      | 15 - Use of laboratory reagents in small scale laboratories                                                                                                                                                                                                                                                                                                                 |
| Scenario subtitle                                                                                                         | <p>Laboratory activities.</p> <p>Quality control work of samples from blending vessel; R&amp;D work including handling of samples from 1 kg to 1 drum</p>                                                                                                                                                                                                                   |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                             |
| General                                                                                                                   | <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p>                                                                                                                                                |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                             |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                      |

|                                                                                                                           |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Concentration in substance                                                                                                | 100 %                                                                                                |
| Fugacity / Dustiness                                                                                                      | medium                                                                                               |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                      |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                   |
| Frequency of use                                                                                                          | 5 days / week                                                                                        |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                      |
| Exposed skin surface                                                                                                      | 240 cm <sup>2</sup>                                                                                  |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                      |
| Location                                                                                                                  | indoors                                                                                              |
| Domain                                                                                                                    | industrial                                                                                           |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                      |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                  |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                      |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                    |
| Respiratory protection                                                                                                    | No                                                                                                   |
| Local exhaust ventilation                                                                                                 | inhalation: 90 % ( <i>justification: Use local exhaust ventilation with adequate effectiveness</i> ) |

### Scenario 3: FRP manufacturing in a professional setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES3)

This scenario is described by the following combinations of use descriptors. The corresponding contributing scenarios are described in the respective subchapters.

An overall exposure scenario may be described by a number of contributing scenarios which may be subdivided into environmental exposure, worker exposure and consumer exposure.

The following scenarios contribute to the scenario *FRP manufacturing in a professional setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.)*.

*This document has been prepared using REACH-Practical-Guide-on-Safe-Use-Information-for-Mixtures-under-REACH-The-LCID-Methodology, considering exposure scenario of relevant raw materials contained in the mixture.*

The corresponding release to the environment, exposure of workers resulting from these contributing scenarios is summarized below.

Table 2. Description of ES 3

|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Free short title</b>                                                        | FRP manufacturing in a professional setting, using UP/VE resins and/or formulated resins (gelcoat, bonding paste, putty etc.) (ES8)                                                                                                                                                                                                                                                                                                                                 |
| <b>Systematic title based on use descriptor</b>                                | ERC 6C; PROC 3, 4, 5, 8A, 10, 11                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Name of contributing environmental scenario and corresponding ERC</b>       | ERC 6c Production of plastics                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Name(s) of contributing worker scenarios and corresponding PROCs</b>        | <p>PROC 3 - Use in closed batch process (synthesis or formulation)</p> <p>PROC 4 - Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC 5 - Mixing or blending in batch processes (multistage and/or significant contact)</p> <p>PROC 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities</p> <p>PROC 10 - Roller application or brushing</p> <p>PROC 11 - Non industrial spraying</p> |
| <b>Contributing Scenario (1) controlling environmental exposure for ERC 6C</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Operational conditions (referred to styrene)</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Daily amount used at site                                                      | 48300 kg/day (referred to styrene)                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Release times per year                                                         | 300 days/year (justification: Continuous release)                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Local freshwater dilution factor                                               | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Local marine water dilution factor                                             | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Release fraction to air from process                                           | 0.102 %                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Release fraction to wastewater from process                                    | 0.000012 %                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Release fraction to soil from process                                                | 0 %                                                                                                                                                                                                                                                                                                                                              |
| Fraction tonnage to region                                                           | 10 %                                                                                                                                                                                                                                                                                                                                             |
| Fraction used at main source                                                         | 60 %                                                                                                                                                                                                                                                                                                                                             |
| STP                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                              |
| River flow rate                                                                      | 18000 m <sup>3</sup> /day                                                                                                                                                                                                                                                                                                                        |
| Municipal sewage treatment plant discharge                                           | 2000000 L/day                                                                                                                                                                                                                                                                                                                                    |
| <b>Other modified EUSES values</b>                                                   |                                                                                                                                                                                                                                                                                                                                                  |
| Fraction released to agricultural soil (Femis.agric)                                 | 0 % ( <i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i> )                                                                                                                                                                                                                       |
| Fraction released to industrial soil (Femis.ind)                                     | 0 % ( <i>justification: No direct release to soil (EU Risk Assessment Report on Styrene, European Communities, 2002)</i> )                                                                                                                                                                                                                       |
| Fraction released to waste water (Femis.water)                                       | 0.000012 % ( <i>justification: EU Risk Assessment Report, 2002</i> )                                                                                                                                                                                                                                                                             |
| Fraction released to air (Femis.air)                                                 | 0.102 % ( <i>justification: EU Risk Assessment Report, 2002</i> )                                                                                                                                                                                                                                                                                |
| Fraction used at main source                                                         | 60 % ( <i>justification: Value adopted to account for worst-case European manufacturing site</i> )                                                                                                                                                                                                                                               |
| Fraction of emission directed to water by local STP (Fstp.water)                     | 0.081 - ( <i>justification: Efficiency STP 91.9%</i> )                                                                                                                                                                                                                                                                                           |
| <b>Contributing Scenario (2) controlling professional worker exposure for PROC 3</b> |                                                                                                                                                                                                                                                                                                                                                  |
| Name of contributing scenario                                                        | 3 - Use in closed batch process (synthesis or formulation)                                                                                                                                                                                                                                                                                       |
| Scenario subtitle                                                                    | Use in contained batch processes.<br>Application of chemical anchoring                                                                                                                                                                                                                                                                           |
| <b>Qualitative Risk Assessment</b>                                                   |                                                                                                                                                                                                                                                                                                                                                  |
| General                                                                              | Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>In case of potential exposure:<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                       |                                                                                                                                                                                                                                                                                                                                                  |
| Physical state                                                                       | liquid                                                                                                                                                                                                                                                                                                                                           |
| Concentration in substance                                                           | 100%                                                                                                                                                                                                                                                                                                                                             |
| Fugacity / Dustiness                                                                 | medium                                                                                                                                                                                                                                                                                                                                           |
| <b>Frequency and duration of use</b>                                                 |                                                                                                                                                                                                                                                                                                                                                  |
| Duration of activity                                                                 | >4 hours (default)                                                                                                                                                                                                                                                                                                                               |
| Frequency of use                                                                     | 5 days / week                                                                                                                                                                                                                                                                                                                                    |
| <b>Human factors not influenced by risk management</b>                               |                                                                                                                                                                                                                                                                                                                                                  |
| Exposed skin surface                                                                 | 240 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                              |

|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| Location                                                                                                                  | outdoors (30%)                                                                                                                                                                                                                                                                                                                                                             |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                               |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                            |
| Local exhaust ventilation                                                                                                 | No                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                            |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                          |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                       |
| <b>Contributing Scenario (3) controlling professional worker exposure for PROC 4</b>                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Name of contributing scenario</b>                                                                                      | 4 - Use in batch and other process (synthesis) where opportunity for exposure arises                                                                                                                                                                                                                                                                                       |
| Scenario subtitle                                                                                                         | Use in contained batch processes.<br>Sewer relining operation                                                                                                                                                                                                                                                                                                              |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                            |
| General                                                                                                                   | Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                            |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                     |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                      |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                         |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                              |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                            |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| Location                                                                                                                  | outdoors (30%)                                                                                                                                                                                                                                                                                                                                                             |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                               |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                            |
| Local exhaust ventilation                                                                                                 | No                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                            |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                          |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                            |

### Contributing Scenario (4) controlling professional worker exposure for PROC 5

|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name of contributing scenario                                                                                             | 5 - Mixing or blending in batch processes (multistage and/or significant contact)                                                                                                                                                                                                                                                                                                                                                              |
| Scenario subtitle                                                                                                         | Material transfers;<br>Pouring from small containers.<br>Preparation of material for application (liquids) - transfer of material from one container to another; Formulating / blending resins, gelcoats, bonding pastes, putties etc. in blending vessels                                                                                                                                                                                     |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| General                                                                                                                   | Use drum pumps.<br>Put lids on containers immediately after use.<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Exposed skin surface                                                                                                      | 480 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                                                                |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                                      |

### Contributing Scenario (5) controlling professional worker exposure for PROC 8A



|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name of contributing scenario</b>                                                                                      | 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities                                                                                                                                                                                                                                                                                   |
| Scenario subtitle                                                                                                         | Equipment maintenance;<br>Maintenance of small items.<br>Equipment cleaning and maintenance                                                                                                                                                                                                                                                                                |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                            |
| General                                                                                                                   | Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                            |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                     |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                      |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| Duration of activity                                                                                                      | 15 mins to 1 hour                                                                                                                                                                                                                                                                                                                                                          |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                              |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                            |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                            |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                    |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                 |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                               |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                            |
| Local exhaust ventilation                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                            |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                          |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure might occur                                                                                                                                                                                                                                                                                                                       |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                  |
| <b>Contributing Scenario (6) controlling professional worker exposure for PROC 8A</b>                                     |                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Name of contributing scenario</b>                                                                                      | 8a - Transfer of chemicals from/to vessels/ large containers at non dedicated facilities                                                                                                                                                                                                                                                                                   |
| Scenario subtitle                                                                                                         | Disposal of wastes.<br>Handling of non cured waste; Waste management / handling and storage of waste for removal for off-site treatment or for on-site treatment like incineration and/or biological waste water treatment                                                                                                                                                 |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                            |

|                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                                                                                                                   | <p>Dispose of empty containers and wastes safely</p> <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Duration of activity                                                                                                      | 15 mins to 1 hour                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                                                                            |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Contributing Scenario (7) controlling professional worker exposure for PROC 10</b>                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Name of contributing scenario</b>                                                                                      | 10 - Roller application or brushing                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Scenario subtitle                                                                                                         | <p>Rolling, Brushing;</p> <p>Roller, spreader, flow application</p> <p>All open mould applications where resins is applied by brushing, rolling and other low energy spreading operations;</p> <p>Examples are handlamination, gelcoatbrushing, semi-continuous production of flat panels and laminates</p>                                                                                                                                                |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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| General                                                                                                                   | Use long handled brushes and rollers where possible<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Use suitable chemically resistant gloves, tested to EN374.<br>Wear suitable coveralls to prevent exposure to the skin.<br>In case of potential exposure wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation:</b> see details on sec.8 of SDS |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Respiratory protection                                                                                                    | Use respiratory protection when exposure occurs                                                                                                                                                                                                                                                                                                                                                                                   |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Contributing Scenario (8) controlling professional worker exposure for PROC 10</b>                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Name of contributing scenario</b>                                                                                      | 10 - Roller application or brushing                                                                                                                                                                                                                                                                                                                                                                                               |
| Scenario subtitle                                                                                                         | Dipping, immersion and pouring;<br>Rolling, Brushing;<br>Roller, spreader, flow application<br>Application of repair putties; Application of bonding pastes / adhesives.                                                                                                                                                                                                                                                          |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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| General                                                                                                                   | <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>Wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                         |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                  |
| Concentration in substance                                                                                                | 100%                                                                                                                                                                                                                                                                                                                                                                    |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                         |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                      |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                           |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                         |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                     |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                         |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                 |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                              |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                            |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                         |
| Local exhaust ventilation                                                                                                 | no                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                         |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                       |
| Respiratory protection                                                                                                    | yes                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Contributing Scenario (9) controlling professional worker exposure for PROC 10</b>                                     |                                                                                                                                                                                                                                                                                                                                                                         |
| Name of contributing scenario                                                                                             | 10 - Roller application or brushing                                                                                                                                                                                                                                                                                                                                     |
| Scenario subtitle                                                                                                         | <p>Dipping, immersion and pouring;</p> <p>Rolling, Brushing;</p> <p>Roller, spreader, flow application</p> <p>Application of floorings, mastics, coatings, castings</p>                                                                                                                                                                                                 |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                         |
| General                                                                                                                   | <p>Ensure good work practices are implemented</p> <p>Provide basic employee training to prevent/minimize exposures</p> <p>Use suitable eye protection.</p> <p>Use suitable chemically resistant gloves, tested to EN374.</p> <p>Wear suitable coveralls to prevent exposure to the skin.</p> <p>Wear a suitable respiratory protection with adequate effectiveness.</p> |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                         |

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|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Concentration in substance                                                                                                | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Fugacity / Dustiness                                                                                                      | medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Frequency and duration of use</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Duration of activity                                                                                                      | >4 hours (default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Frequency of use                                                                                                          | 5 days / week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Exposed skin surface                                                                                                      | 960 cm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Location                                                                                                                  | indoors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Ventilation                                                                                                               | good (30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Domain                                                                                                                    | professional                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Local exhaust ventilation                                                                                                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Respiratory protection                                                                                                    | yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Contributing Scenario (10) controlling professional worker exposure for PROC 11</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Name of contributing scenario</b>                                                                                      | 11 - Non industrial spraying                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Scenario subtitle                                                                                                         | Spraying;<br>Spraying (manually)<br>All open mould applications where resins is applied by manual spraying in an open work environment. Examples are spray lamination, gelcoat spraying and “chop-hoop” filament winding                                                                                                                                                                                                                                                                             |
| <b>Qualitative Risk Assessment</b>                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| General                                                                                                                   | Keep people not involved in the activity, away from the operation<br>Ensure good work practices are implemented<br>Provide basic employee training to prevent/minimize exposures<br>Use suitable eye protection.<br>Wear suitable face shield<br>Wear suitable coveralls to prevent exposure to the skin.<br>Wear chemically resistant gloves, tested to EN374, in combination with intensive management supervision control.<br>Wear a suitable respiratory protection with adequate effectiveness. |
| <b>Product characteristics</b>                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Physical state                                                                                                            | liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                                                                                                           |                                                           |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Concentration in substance                                                                                                | 100 %                                                     |
| Fugacity / Dustiness                                                                                                      | medium                                                    |
| <b>Frequency and duration of use</b>                                                                                      |                                                           |
| Duration of activity                                                                                                      | 1 - 4 hours                                               |
| Frequency of use                                                                                                          | 5 days / week                                             |
| <b>Human factors not influenced by risk management</b>                                                                    |                                                           |
| Exposed skin surface                                                                                                      | 1,500 cm <sup>2</sup>                                     |
| <b>Other given operational conditions affecting workers exposure</b>                                                      |                                                           |
| Location                                                                                                                  | indoors                                                   |
| Ventilation                                                                                                               | good (30%)                                                |
| Domain                                                                                                                    | professional                                              |
| <b>Technical conditions and measures to control dispersion and exposure</b>                                               |                                                           |
| Local exhaust ventilation                                                                                                 | yes                                                       |
| <b>Conditions and measures related to personal protection, hygiene and health evaluation: see details on sec.8 of SDS</b> |                                                           |
| Protective gloves                                                                                                         | Gloves APF 5 80 %                                         |
| Respiratory protection                                                                                                    | yes                                                       |
| Local exhaust ventilation                                                                                                 | Use local exhaust ventilation with adequate effectiveness |