



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

SDS n° : FP12431

**GRAVICOL 2039 TC**

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Former date 02-Mar-2016

Revision date 13-Feb-2019

Version: 2

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

1.1. Product identifier

**Product name** GRAVICOL 2039 TC  
**Chemical Name** polyester glue  
**Pure substance/mixture** Mixture

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

**Identified uses** polyester glue for composites. Contact us before using for food contact application.

1.3. Details of the supplier of the safety data sheet

**Supplier** Polynt Composites France S.A.  
Route d'Arras CS 50019  
62320 Drocourt  
France  
Tel : +33 3 21 74 84 00  
Fax : +33 3 21 49 55 84

For further information, please contact

**E-mail address** Rccp.SDSmanagement@polynt.com  
**Internet Address** <http://www.polynt.com>

1.4. Emergency telephone number

|   |                      |
|---|----------------------|
| This telephone number is available 24 hours per day, 7 days per week. |                      |
| Europe :  | +44 (0) 1235 239 670 |
| Middle East/Africa :  | +44 (0) 1235 239 671 |
| East/South East Asia :  | +65 3158 1412        |

**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                | 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 |

## 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

### EU H -Phrases

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

### Precautionary statements

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

No information available.

## 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   | ~ 27           | 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) |
| Talc          | 238-877-9 | 01-2120140278-58          | 14807-96-6 | ~ 15           | -  |

|  |           |                  |             |        |   |
|--|-----------|------------------|-------------|--------|---|
| Silica, amorphous, fumed, crystalline-free | 231-545-4 | 01-2119379499-16 | 112945-52-5 | ~ 4    | -   |
| Barium sulfate                             | 231-784-4 | 01-2119491274-35 | 7727-43-7   | ~ 2    | -   |
| Titanium dioxide                           | 236-675-5 | 01-2119489379-17 | 13463-67-7  | < 1    | -   |
| Amorphous Silica                           | 231-545-4 | 01-2119379499-16 | 7631-86-9   | < 0.25 | -   |
| cobalt octoate                             | 205-250-6 | 01-2119524678-29 | 136-52-7    | ~ 0.2  | Skin Sens. 1A (H317)<br>Eye Irrit. 2 (H319)<br>Repr. 2 (H361f)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 3 (H412)                |
| phthalic anhydride                         | 201-607-5 | 01-2119457017-41 | 85-44-9     | < 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) |

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

**Suitable extinguishing media** Dry chemical, Foam, Carbon dioxide (CO<sub>2</sub>), (closed systems)

**Extinguishing Media Which Must not be Used for Safety Reasons** Do not use a solid water stream as it may scatter and spread fire.

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

**Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases** 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** Avoid contact with the skin and the eyes.  
Heat.  
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

|   |   |
|---|---|
| <b>Precautions for safe handling</b>    | Avoid breathing vapours or mists<br>Use only in area provided with appropriate exhaust ventilation<br>In case of insufficient ventilation, wear suitable respiratory equipment<br>For personal protection see section 8 |
| <b>Prevention of fire and explosion</b> | Keep away from open flames, hot surfaces and sources of ignition  |
| <b>Hygiene measures</b>                 | 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

|  |   |
|--|---|
| <b>Technical measures/Storage conditions</b> | Keep in a dry, cool and well-ventilated place.                |
| <b>Materials to avoid</b>                    | Strong oxidizing agents, Catalyst, Peroxides, Reducing agents |
| <b>Packageing material</b>                   | metallic GRP Tanks (Reinforced Glass Polyester)               |
| <b>Unsuitable materials for containers</b>   | copper, Copper alloys, Bronze, Zinc                           |

### 7.3. Specific end use(s)

|                        |                          |
|------------------------|--------------------------|
| <b>Specific use(s)</b> | 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> |
| 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>                            |
| Barium sulfate<br>7727-43-7    | TWA 0.5 mg/m <sup>3</sup> | TWA 10 mg/m <sup>3</sup>  | STEL 30 mg/m <sup>3</sup> STEL 12 mg/m <sup>3</sup><br>STEL 1.5 mg/m <sup>3</sup><br>TWA 10 mg/m <sup>3</sup> TWA 4 mg/m <sup>3</sup><br>TWA 0.5 mg/m <sup>3</sup> | TWA 2 mg/m <sup>3</sup> TWA 0.5 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><br>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>                              |
| Amorphous Silica<br>7631-86-9  |                           |   | STEL 18 mg/m <sup>3</sup> STEL 7.2 mg/m <sup>3</sup><br>TWA 6 mg/m <sup>3</sup> TWA 2.4 mg/m <sup>3</sup><br>TWA 2.4 mg/m <sup>3</sup>                             | TWA 6 mg/m <sup>3</sup> TWA 2.4 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  |
| 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                  |

#### 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>  |  |

**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> |        |

**Barium sulfate (7727-43-7)**

| Type   | DNEL oral          | DNEL dermal | DNEL inhalation      | Remark |
|--|--------------------|-------------|----------------------|--------|
| Workers - Long Term - Systemic effect            |                    |             | 10 mg/m <sup>3</sup> |        |
| General Population - Long Term - Systemic effect | 13000 mg/kg bw/day |             | 10 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> |        |
| General Population - Long Term - Systemic effect | 700 mg/kg bw/day |             |                      |        |

**Amorphous Silica (7631-86-9)**

| Type                                  | DNEL oral | DNEL dermal | DNEL inhalation     | Remark |
|---------------------------------------|-----------|-------------|---------------------|--------|
| Workers - Long Term - Systemic effect |           |             | 4 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 | 27.6 µg/kg bw/day |  |                      |  |
| General Population - Long Term - Local effect    |                   |  | 37 µg/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>  |        |

#### 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      |
| 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         |

| 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 |

| Barium sulfate (7727-43-7) |               |                         |
|----------------------------|---------------|-------------------------|
| Exposure                   | Type          | PNEC                    |
| Fresh water                | PNEC Aqua     | 227.8 mg/L              |
|                            | PNEC STP      | 50.1 mg/L               |
| Fresh water                | PNEC Sediment | 792.7 mg/kg sediment dw |
|                            | PNEC Soil     | 207.7 mg/kg soil dw     |

| 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        |

| Amorphous Silica (7631-86-9) |           |             |
|------------------------------|-----------|-------------|
| Exposure                     | Type      | PNEC        |
| Secondary Poisoning          | PNEC Oral | 60000 mg/kg |

| cobalt octoate (136-52-7) |  |  |
|---------------------------|--|--|
|---------------------------|--|--|

| Exposure                | Type          | PNEC                  |
|-------------------------|---------------|-----------------------|
| Fresh water             | PNEC Aqua     | 0.6 µg/L              |
| Marine water            | PNEC Aqua     | 2.36 µg/L             |
| STP microorganisms      | PNEC STP      | 0.37 mg/L             |
| Fresh water             | PNEC Sediment | 9.5 mg/kg sediment dw |
| Marine water            | PNEC Sediment | 9.5 mg/kg sediment dw |
| Terrestrial Compartment | PNEC Soil     | 10.9 mg/kg soil dw    |

| 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    |

## 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 :

##### Eye protection Skin and body protection Hand protection

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  
Safety glasses with side-shields. Do not wear contact lenses.  
Antistatic boots. Protective shoes or boots. Wear fire/flame resistant/retardant clothing.  
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

| Property                 | Values  | Remark                    |
|--------------------------|---|---------------------------|
| Appearance               | Variable (This Data Sheet includes all the colours) |                           |
| Physical state           | paste   |                           |
| Particle size            |   | no data available         |
| Odour                    | Styrene   |                           |
| Odour Threshold          | 0.15 ppm  | Values related to styrene |
| pH                       |   | no data available         |
| pH (as aqueous solution) |   | no data available         |
| Melting point/range      | - 30 °C   | Values related to styrene |
| Freezing Point           |   | no data available         |



|   |             |                           |
|---|-------------|---------------------------|
| <b>Boiling point</b>                              | 145 °C      | Values related to styrene |
| <b>Flash point</b>                                |             | Not a flammable solid     |
| <b>Evaporation rate</b>                           |             | no data available         |
| <b>Flammability Limits in Air</b>                 |             |                           |
| <b>upper</b>                                      | 6,1 - 6,8%  | Values related to styrene |
| <b>lower</b>                                      | 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>                                    | 1.31 g/cm3  | 20°C                      |
| <b>Water solubility</b>                           |             | no data available         |
| <b>Partition coefficient:<br/>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>                       | 22901 mm2/s | 23°C                      |
| <b>Viscosity, dynamic</b>                         | 30000 mPa.s | 23°C                      |
| <b>Explosive properties</b>                       |             | not applicable            |
| <b>Oxidizing properties</b>                       |             | not applicable            |

## 9.2. Other information

| <u>Property</u>                     | <u>Values</u> | <u>Remark</u>     |
|-------------------------------------|---------------|-------------------|
| <b>Solubility in other solvents</b> |               | no data available |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** No information available

### 10.2. Chemical stability

**Stability** Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

**Hazardous reactions** No information available

**Hazardous polymerisation** Polymerisation can occur.

### 10.4. Conditions to avoid

**Conditions to avoid** Heat.  
Exposure to light.

### 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

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

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation | Read-across (Analogy) |
|---------------|-----------|-------------|-----------------|-----------------------|
|---------------|-----------|-------------|-----------------|-----------------------|

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|  |                                   |  |  |  |
|--|-----------------------------------|--|--|--|
| 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                            |  |
| 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 |  |
| Barium sulfate<br>7727-43-7                                  | > 5000 mg/kg bw (Rat)<br>OECD 401 | > 2000 mg/kg bw (Rat)<br>OECD 408<br>Read across with Cas N° :<br>10361-37-2 |  |  |
| 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                             |  |
| Amorphous Silica<br>7631-86-9                                | > 5000 mg/kg bw (Rat)<br>OECD 401 | > 5000 mg/kg (Rabbit)  | > 0.14 mg/L air (Rat) 4h<br>(analytical)<br>OECD 403 |  |
| cobalt octoate<br>136-52-7                                   | 3129 mg/kg/bw (Rat)<br>OECD 425   | > 2000 mg/kg bw (Rat)<br>OECD 402  |  |  |
| 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                     |  |

**Skin corrosion/irritation**

| Chemical Name   | Skin corrosion/irritation  | Read-across (Analogy)                              |
|---|--|--|
| Styrene<br>100-42-5                                       | Irritating to skin<br>in vivo assay<br>rabbit  |  |
| 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   |  |
| Barium sulfate<br>7727-43-7                               | No skin irritation<br>in vitro study<br>OECD Guidelines for Testing of Chemicals +<br>Commission regulation (EC) No. 440/2008 B.46 | barium dichloride dihydrate Cas N° :<br>10326-27-9 |
| Titanium dioxide<br>13463-67-7                            | No skin irritation<br>No skin corrosion<br>in vivo assay<br>rabbit<br>OECD 404   |  |
| Amorphous Silica<br>7631-86-9                             | No skin irritation<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   |  |
| phthalic anhydride<br>85-44-9                             | Irritating to skin<br>in vivo assay<br>rabbit<br>OECD 404  |  |

**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              |                       |
| 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   |  |
| Barium sulfate<br>7727-43-7                               | No eye irritation<br>in vivo assay<br>rabbit<br>OECD 405  |  |
| Titanium dioxide<br>13463-67-7                            | No eye irritation<br>in vivo assay<br>rabbit<br>OECD 405  |  |
| Amorphous Silica<br>7631-86-9                             | No eye irritation<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 |  |
| phthalic anhydride<br>85-44-9                             | Irritating to eyes<br>in vivo assay<br>rabbit<br>Draize Test                                      |  |

**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              |  |
| 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                     |  |
| Barium sulfate<br>7727-43-7                               | Does not cause skin sensitization<br>in vivo assay<br>mouse<br>OECD 429                           | barium dichloride dihydrate Cas N° :<br>10326-27-9 |
| 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 |  |
| Amorphous Silica<br>7631-86-9                             | Does not cause skin sensitization<br>Does not cause respiratory sensitization                     |  |
| cobalt octoate<br>136-52-7                                | May cause sensitisation by skin contact<br>in vivo assay<br>mouse<br>OECD 429                     |  |
| phthalic anhydride<br>85-44-9                             | May cause sensitisation by inhalation and skin contact<br>in vivo assay<br>guinea pig<br>OECD 406 |  |

### 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 |                       |

|   |  |  |
|---|--|--|
| 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   |  |
| Barium sulfate<br>7727-43-7                               | negative<br>In vitro gene mutation study in bacteria<br>(S. typhimurium TA 1535, TA 1537, TA 98 and TA 100)<br>OECD 471  | barium dichloride dihydrate Cas N° :<br>10326-27-9 |
| Titanium dioxide<br>13463-67-7                            | negative<br>In vitro gene mutation study in bacteria<br>OECD 471   |  |
| Amorphous Silica<br>7631-86-9                             | negative<br>In vitro gene mutation study in bacteria<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                     |
| 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 |  |

| 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 |   |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | negative<br>In vitro gene mutation study in mammalian cells<br>OECD 476             |   |
| Barium sulfate<br>7727-43-7                               | negative<br>In vitro gene mutation study in mammalian cells<br>mouse<br>OECD 476    | barium dichloride dihydrate Cas N° :<br>10326-27-9      |
| Titanium dioxide<br>13463-67-7                            | negative<br>In vitro gene mutation study in mammalian cells<br>mouse<br>OECD 476    |   |
| Amorphous Silica<br>7631-86-9                             | negative<br>In vitro gene mutation study in mammalian cells<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 |
| phthalic anhydride<br>85-44-9                             | negative<br>In vitro gene mutation study in mammalian cells<br>hamster<br>OECD 476  |   |
| 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             |   |

|   |  |  |
|---|--|--|
| 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  |  |
| Barium sulfate<br>7727-43-7                               | negative<br>Chromosome aberration test in vitro<br>hamster<br>OECD 473                             | barium dichloride dihydrate Cas N° :<br>10326-27-9 |
| Titanium dioxide<br>13463-67-7                            | negative<br>Chromosome aberration test in vitro<br>hamster<br>OECD 473                             |  |
| Amorphous Silica<br>7631-86-9                             | 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                            |  |

**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 |   |
| Silica, amorphous, fumed, crystalline-free<br>112945-52-5 | negative<br>rat                           |   |
| Titanium dioxide<br>13463-67-7                            | negative<br>mouse                         |   |
| Amorphous Silica<br>7631-86-9                             | negative<br>rat                           |   |
| 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<br>(carcinogenicity) $\geq$ 4.34<br>mg/L air (nominal)  | negative   |
| Inhalation      | OECD 453                 | mouse   | LOAEC (carcinogenicity)<br>female/male = 0.09 - 0.18<br>mg/L air resp., NOAEC<br>(carcinogenicity) male =<br>0.09 mg/L air | positive   |
| Oral            | No information available | rat     | NOAEL (carcinogenicity)<br>$\geq$ 2000 mg/kg bw /day   | positive   |
| Oral            | No information available | mouse   | LOAEL (carcinogenicity) =<br>150 mg/kg bw /day   | positive   |

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

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

| <b>Silica, amorphous, fumed, crystalline-free (112945-52-5)</b> |          |         |                                  |            |
|---|----------|---------|----------------------------------|------------|
| Exposure routes   | Method   | Species | Dose                             | Evaluation |
| Oral  | OECD 453 | rat     | NOAEL = 1800 - 3200 mg/kg bw/day | negative   |

| <b>Barium sulfate (7727-43-7)</b> |  |         |  |            |
|-----------------------------------|--|---------|--|------------|
| Exposure routes                   | Method   | Species | Dose   | Evaluation |
| Oral                              | Read across with barium dichloride dihydrate Cas N° : 10326-27-9 | rat     | NOAEL carcinogenicity (male) = 60 mg/kg bw/day<br>NOAEL carcinogenicity (female) = 75 mg/kg bw/day | negative   |

| <b>Titanium dioxide (13463-67-7)</b> |                          |         |  |            |
|--------------------------------------|--------------------------|---------|--|------------|
| 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   |

| <b>Amorphous Silica (7631-86-9)</b> |          |         |                                  |            |
|-------------------------------------|----------|---------|----------------------------------|------------|
| Exposure routes                     | Method   | Species | Dose                             | Evaluation |
| Oral                                | OECD 453 | rat     | NOAEL = 1800 - 3200 mg/kg bw/day | negative   |

| <b>phthalic anhydride (85-44-9)</b> |                          |         |  |            |
|-------------------------------------|--------------------------|---------|--|------------|
| Exposure routes                     | Method                   | Species | Dose   | Evaluation |
| 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   |

**Reproductive toxicity**

| <b>Reproductive toxicity</b> |                          |         |  |            |
|------------------------------|--------------------------|---------|--|------------|
| <b>Styrene (100-42-5)</b>    |                          |         |  |            |
| 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   |

| <b>Talc (14807-96-6)</b> |                     |         |  |            |
|--------------------------|---------------------|---------|--|------------|
| Exposure routes          | Method              | Species | Dose   | Evaluation |
| Oral                     | similar to OECD 416 | rabbit  | NOAEL (reproduction & F1) > 900 mg/kg bw/day | negative   |

| <b>Silica, amorphous, fumed, crystalline-free (112945-52-5)</b> |          |         |                          |            |
|---|----------|---------|--------------------------|------------|
| Exposure routes   | Method   | Species | Dose                     | Evaluation |
| Oral  | OECD 415 | rat     | NOAEL = 497 mg/kg bw/day | negative   |

| <b>Amorphous Silica (7631-86-9)</b> |          |         |                          |            |
|-------------------------------------|----------|---------|--------------------------|------------|
| Exposure routes                     | Method   | Species | Dose                     | Evaluation |
| Oral                                | OECD 415 | rat     | NOAEL = 497 mg/kg bw/day | negative   |

| <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   |

| <b>phthalic anhydride (85-44-9)</b> |                          |         |  |            |
|-------------------------------------|--------------------------|---------|--|------------|
| 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   |

**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 + developmental 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>Amorphous Silica (7631-86-9)</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>cobalt octoate (136-52-7)</b> |   |         |  |            |
|----------------------------------|---|---------|--|------------|
| Exposure routes                  | Method  | Species | Dose   | Evaluation |
| Oral                             | Read-across (Analogy)<br>Cas N°: 7791-13-1 OECD 414 | rat     | NOAEL (maternal toxicity) 20d = 25 mg/kg bw/day<br>NOAEL (developmental toxicity) 20d = 100 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° :<br>88-99-3 | rat | NOAEL (maternal toxicity) = 1000 mg/kg bw/day<br>NOAEL (teratogenicity) = 1700 mg/kg bw/day | positive |
|------|--|-----|---|----------|

**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 |
| 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  |         |

| <b>Talc (14807-96-6)</b> |                     |         |  |         |
|--------------------------|---------------------|---------|--|---------|
| Exposure routes          | Method              | Species | Dose                                   | Remarks |
| Inhalation               | similar to OECD 412 | rat     | NOAEC (20d) = 2-6-18 mg/m <sup>3</sup> |         |
| Oral                     | similar to OECD 452 | rat     | NOAEL (101d) = 100 mg/kg bw/day        |         |
| Inhalation               | similar to OECD 452 | rat     | NOAEC = 10.8 mg/m <sup>3</sup> air     |         |

| <b>Silica, amorphous, fumed, crystalline-free (112945-52-5)</b> |                          |         |   |         |
|---|--------------------------|---------|---|---------|
| Exposure routes   | Method                   | Species | Dose  | Remarks |
| Oral  | OECD 408                 | rat     | NOEL (highest dose) 4000 <= 4500 mg/kg bw/day<br>90d                        |         |
| Inhalation  | OECD 413                 | rat     | NOEC = 1.3 mg/m <sup>3</sup> air<br>NOEC < 1.3 mg/m <sup>3</sup> air<br>90d |         |
| Dermal  | No information available | rabbit  | NOAEL >= 10000 mg/kg bw/day   |         |

| <b>Barium sulfate (7727-43-7)</b> |        |         |      |         |
|-----------------------------------|--------|---------|------|---------|
| Exposure routes                   | Method | Species | Dose | Remarks |
|                                   |        |         |      |         |



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|      |   |     |                             |  |
|------|---|-----|-----------------------------|--|
| Oral | Read-across (Analogy)<br>Cas N°: 10326-27-9 | rat | NOAEL = 104 mg/kg<br>bw/day |  |
|------|---|-----|-----------------------------|--|

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

| Exposure routes | Method                   | Species | Dose  | Remarks |
|-----------------|--------------------------|---------|---|---------|
| Oral            | OECD 407                 | rat     | NOEL (29d) = 24000<br>mg/kg bw/day  |         |
| Inhalation      | No information available | rat     | NOEC (carcinogenicity) =<br>50 mg/m <sup>3</sup> air<br>NOEC (non-neoplastic<br>changes) = 10 mg/m <sup>3</sup> air |         |

**Amorphous Silica (7631-86-9)**

| Exposure routes | Method                   | Species | Dose  | Remarks |
|-----------------|--------------------------|---------|---|---------|
| Oral            | OECD 408                 | rat     | NOEL (highest dose)<br>4000 <= 4500 mg/kg<br>bw/day<br>90d                  |         |
| Inhalation      | OECD 413                 | rat     | NOEC = 1.3 mg/m <sup>3</sup> air<br>NOEC < 1.3 mg/m <sup>3</sup> air<br>90d |         |
| Dermal          | No information available | rabbit  | NOAEL >= 10000 mg/kg<br>bw/day  |         |

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

| Exposure routes | Method                   | Species | Dose   | Remarks |
|-----------------|--------------------------|---------|--|---------|
| Oral            | No information available | rat     | NOAEL = 1250 mg/kg<br>bw/day<br>LOAEL = 2500 mg/kg<br>bw/day<br>7 weeks                  |         |
| Oral            | No information available | rat     | NOAEL (105 weeks) =<br>500 mg/kg bw/day  |         |
| Oral            | No information available | mouse   | LOAEL (male) = 2340<br>mg/kg bw/day<br>LOAEL (female) = 1717<br>mg/kg bw/day<br>72 weeks |         |

**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 | LC50 (72h) = 4.9 mg/L<br>(Pseudokirchnerella<br>subcapitata)<br>EPA OTS 797.1050                  | EC50 (48h) = 4.7 mg/L<br>(Daphnia magna)<br>NOEC = 1.9 mg/L (Daphnia<br>magna)<br>OECD 202 | LC50 (96h) = 4.02 - 10<br>mg/L (Pimephales<br>promelas)<br>OECD 203 | EC (30min) = 500 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             |  |

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|   |  |  |   |   |
|---|--|--|---|---|
| Silica, amorphous, fumed, 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  |   |
| Barium sulfate<br>7727-43-7                               | EC50 (72h) > 100 mg/L<br>(Pseudokirchnerella subcapitata)<br>NOEC (72h) = 100 mg/L<br>(Pseudokirchnerella subcapitata)<br>OECD 201   | EC50 (48h) = 14500 µg/L<br>(Daphnia magna)             | LC50 (96h) > 97.5 mg/L<br>(Danio rerio)<br>OECD 203   | EC50 (3h) > 1000 mg/L<br>(activated sludge of a predominantly domestic sewage)<br>NOEC (3h) >= 1000 mg/L<br>(activated sludge of a predominantly domestic sewage)<br>OECD 209 |
| 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 predominantly domestic sewage)<br>OECD 209   |
| Amorphous Silica<br>7631-86-9                             |  | EL50 (24h) >= 1000 mg/L<br>(Daphnia magna)<br>OECD 202 | LC50 (96h) > 10000 mg/L<br>(Brachydanio rerio)<br>OECD 203  |   |
| cobalt octoate<br>136-52-7                                | EC50 (72h) = 144 µg<br>Codiss./L<br>(Pseudokirchnerella subcapitata)<br>NOEC (72h) = 32.2 µg./L<br>(Pseudokirchnerella subcapitata)<br>LOEC (72h) = 52.7 µg<br>Codiss./L<br>(Pseudokirchnerella 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                        |
| phthalic anhydride<br>85-44-9                             | EC50 (72h) = 68 mg/L,<br>NOEC (72h) = 32 mg/L<br>(Pseudokirchnerella 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  |

**Chronic 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            |   | 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             |                  |                            |
| Barium sulfate<br>7727-43-7    |   | NOEC (21d) = 2900 µg/L<br>(Daphnia magna)<br>ECHA methodology (i.e.,<br>EC16/2)   |                  |                            |
| 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   |                  |                            |
| 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 |                  |                            |

|                               |  |   |   |  |
|-------------------------------|--|---|---|--|
| phthalic anhydride<br>85-44-9 |  | NOEC (reproduction) 21d = 16 mg/L, EC50 (reproduction) 21d = 42 mg/L (Daphnia magna) OECD 211 | LC50 (7d) = 560 mg/L (Danio rerio), OECD 210<br>LOEC (total embryotoxicity) 60d = 32 mg/L, NOEC (mortality, length, weight, embryotoxicity) 60d = 10 mg/L, OECD 210 |  |
|-------------------------------|--|---|---|--|

**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 |         |

**12.2. Persistence and degradability**

| Chemical Name                 | Biodegradation                       | Evaluation            |
|-------------------------------|--------------------------------------|-----------------------|
| Styrene<br>100-42-5           | 87% (20d) similar to OECD 301D       | Readily biodegradable |
| cobalt octoate<br>136-52-7    | 60% (> 10d), OECD 301 B              | Readily biodegradable |
| phthalic anhydride<br>85-44-9 | 68 % (10d), 74 % (30d)<br>OECD 301 D | Readily biodegradable |

**12.3. Bioaccumulative potential**

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

| Barium sulfate (7727-43-7) |                     |                               |
|----------------------------|---------------------|-------------------------------|
| Method                     | Species             | Bioconcentration factor (BCF) |
| no data available          | Lepomis macrochirus | 74.4 L/kg                     |

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

| Chemical Name       | log Pow |
|---------------------|---------|
| Styrene<br>100-42-5 | 3       |
| Talc<br>14807-96-6  | -9.4    |

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|                               |     |
|-------------------------------|-----|
| phthalic anhydride<br>85-44-9 | 1.6 |
|-------------------------------|-----|

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). |
| 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). |
| 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). |
| Amorphous Silica<br>7631-86-9                             | 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). |
| 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). |

12.6. Autres effets néfastes

None known.

## SECTION 13: Disposal considerations

13.1. Waste treatment methods

|  |   |
|--|---|
| <b>Waste from Residues/Unused Products</b> | Dispose of in accordance with the European Directives on waste and hazardous waste. Do not flush into surface water or sanitary sewer system  |
| <b>Contaminated packaging</b>              | Empty containers should be taken to an approved waste handling site for recycling or disposal.  |
| <b>Other information</b>                   | According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.<br>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   | not regulated |
| IMDG/IMO  | not regulated |
| ICAO/IATA | not regulated |
| ADN       | not regulated |

14.2. UN proper shipping name

|           |               |
|-----------|---------------|
| ADR/RID   | not regulated |
| IMDG/IMO  | not regulated |
| ICAO/IATA | not regulated |
| ADN       | not regulated |

#### 14.3. Transport hazard class(es)

|           |               |
|-----------|---------------|
| ADR/RID   | not regulated |
| IMDG/IMO  | not regulated |
| ICAO/IATA | not regulated |
| ADN       | not regulated |

#### 14.4. Packing group

|           |               |
|-----------|---------------|
| ADR/RID   | not regulated |
| IMDG/IMO  | not regulated |
| ICAO/IATA | not regulated |
| ADN       | not regulated |

#### 14.5. Environmental hazards

|           |               |
|-----------|---------------|
| ADR/RID   | not regulated |
| IMDG/IMO  | not regulated |
| ICAO/IATA | not regulated |
| ADN       | not regulated |

#### 14.6. Special precautions for user

|           |               |
|-----------|---------------|
| ADR/RID   | not regulated |
| IMDG/IMO  | not regulated |
| ICAO/IATA | not regulated |
| ADN       | not regulated |

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

**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.**

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

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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

not applicable

**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  
H361d - Suspected of damaging the unborn child  
H361f - Suspected of damaging fertility  
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled  
H400 - Very toxic to aquatic life  
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**

02-Mar-2016

**Revision date**

13-Feb-2019

**Revision Note**

SDS sections updated : 2 , 3 , 4 , 7 , 8 , 11 , 12 , 15

**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**