

## RESIN ORTHO POLYLITE 32032-00

|                       |                                                                  |
|-----------------------|------------------------------------------------------------------|
| <b>Product Name:</b>  | <b>Resin ORTHO PolyLit 32032-00</b><br><b>1570456 Rev. 1</b>     |
| <b>Revision Date:</b> | 11-Aug-2023<br><b>According to Regulation (EC) No. 1907/2006</b> |

### 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product Identifier

|                                |                              |
|--------------------------------|------------------------------|
| <b>Product Name:</b>           | Resin ORTHO PolyLit 32032-00 |
| <b>Chemical Name:</b>          | Polyester Resin              |
| <b>Pure Substance/Mixture:</b> | Mixture                      |

#### 1.2. Product relevant identified uses of the substance or mixture and uses advised against

|                         |                             |
|-------------------------|-----------------------------|
| <b>Identified uses:</b> | Casting Resin, Panel Resin. |
|-------------------------|-----------------------------|

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

### Tricel Composites (GB) Limited

Unit A, Foxway,  
Off Atkinson Street,  
Leeds, West Yorkshire,  
LS10 1PS.  
Tel: +44 (0)113 270 3133

### Tricel Composites (NI) Limited

Unit 4, Milltown Ind. Estate, Greenan  
Road. Warrenpoint, Newry  
Co. Down,  
BT34 3FN.  
Tel: +44 (0)284 175 3738

## 1.4. Emergency Telephone Number

| Leeds:                                           | Newry:                                           |
|--------------------------------------------------|--------------------------------------------------|
| Tel: +44 (0)113 270 3133<br>(office hours 9-5pm) | Tel: +44 (0)284 175 3738<br>(office hours 9-5pm) |

**UK:** National Poisons Emergency Number: 0344 892 0111 (for healthcare professionals use only). NHS public service number NHS 111.

**Ireland:** Emergency medical information: 8am-10pm (7 days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 D0V2NO, Ireland. 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)

## 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 - (H315)  |
| Serious Eye Damage/Eye Irritation                  | Category 2 - (H319)  |
| Skin Sensitization                                 | Category 1 - (H317)  |
| Reproductive Toxicity                              | Category 2 - (H361d) |
| Specific Target Organ Toxicity (Single Exposure)   | Category 3 - (H335)  |
| Specific target organ toxicity - repeated exposure | Category 1 - (H372)  |
| Chronic Aquatic Toxicity                           | Category 3 - (H412)  |
| Flammable liquids                                  | Category 3 - (H226)  |

### 2.2. Label elements



**Signal Word:** Danger

**Contains:** Methyl methacrylate, Styrene

#### 2.2.1. Hazard Statements

##### 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

## **Physical hazards**

H226 – Flammable liquid and vapour

## **EU H – Phrases**

EUH208 – Contains alpha-methyl styrene, cobalt octoate. May produce an allergic reaction

### **2.2.2. 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.

## **3. Composition/Information on Ingredients**

### **3.1. Mixtures**

#### **Hazardous Components**

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| Chemical Name                                                          | EC-No     | REACH<br>Registration Number | CAS-No     | Weight<br>percent | GHS Classification                                                                                                                                                                                     | M-Factor<br>(acute) | M-Factor<br>(chronic) | Concentrati<br>on limit (%) |
|------------------------------------------------------------------------|-----------|------------------------------|------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------|-----------------------------|
| Styrene                                                                | 202-851-5 | 01-2119457861-32             | 100-42-5   | 25 - 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) |                     |                       |                             |
| Methyl methacrylate                                                    | 201-297-1 | 01-2119452498-28             | 80-62-6    | 1 - 10            | Flam. Liq. 2 (H225)<br>STOT SE 3 (H335)<br>Skin Irrit. 2 (H315)<br>Skin Sens. 1 (H317)                                                                                                                 |                     |                       |                             |
| Propylidynetrimethanol                                                 | 201-074-9 | 01-2119486799-10             | 77-99-6    | 0.1 - < 1         | Repr. 2 (H361fd)                                                                                                                                                                                       |                     |                       |                             |
| alpha-methyl styrene                                                   | 202-705-0 | 01-2119472426-35             | 98-83-9    | 0.1 - < 1         | Flam. Liq. 3 (H226)<br>Asp. Tox. 1 (H304)<br>Skin Sens. 1B (H317)<br>Eye Irrit. 2 (H319)<br>STOT SE 3 (H335)<br>Repr. 2 (H361d)<br>Aquatic Chronic 2 (H411)                                            |                     |                       | STOT SE 3 ::<br>C>=25%      |
| Quaternary ammonium compounds, benzyl-C12-16-alkyldi methyl, chlorides | 270-325-2 | 01-2119983287-23             | 68424-85-1 | 0.1 - < 1         | Acute Tox. 4 (H302)<br>Skin Corr. 1B (H314)<br>Eye Dam. 1 (H318)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)                                                                                 | 10                  | 1                     |                             |
| cobalt octoate                                                         | 205-250-6 | 01-2119524678-29             | 136-52-7   | 0.01 - < 0.1      | Skin Sens. 1A (H317)<br>Eye Irrit. 2 (H319)<br>Repr. 1B (H360Fd)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 3 (H412)                                                                                 | 1                   |                       |                             |

**Additional information** Acute Toxicity Estimate See Section 11 for more information

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

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

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

Notes to physician

No information available

## 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 substance or mixture

**Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:**

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) 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.

## 6. Accidental Release Measures

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

#### For non-emergency personnel

|                             |                                                                                                                                                                                       |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions</b> | Remove all sources of ignition<br>Heat, flames and sparks.<br>Take precautionary measures against static charges.<br>Ensure adequate ventilation<br>Use personal protective equipment |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                 |                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>For emergency responders</b> | 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

|                                  |                                                                                                                                        |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental precautions</b> | 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

|                                |                                                                                                                                                                                                                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Methods for cleaning up</b> | 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)<br>Use clean non-sparking tools to collect absorbed material |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 6.4. Reference to other sections

### Reference to other sections

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

## 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.

#### Materials to avoid

Strong oxidizing agents, Peroxides, Reducing agents  
metallic GRP Tanks (Reinforced Glass Polyester)

#### Packaging material

#### Unsuitable materials for containers

copper, Copper alloys, Bronze, Zinc

## 7.3. Specific end use(s)

Specific use(s)

No information available

## 8. Exposure Controls/Personal Protection

### 8.1. Control Parameters

#### Occupational Exposure Limits

| Chemical Name                | European Union                                                               | ACGIH OEL (Ceiling)                                                                                                                                                            | The United Kingdom                                                                | Ireland                                                                       |
|------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Styrene 100-42-5             | -                                                                            | ACGIH (2020):<br>TLV-TWA: 10 ppm<br>TLV-STEL/C: 20 ppm Notes:<br>OTO, A3, BEI<br>Critical effects: CNS and hearing impairment, URT irr, peripheral neuropathy visual disorders | 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> |
| Methyl methacrylate 80-62-6  |                                                                              | TWA 50 ppm, STEL 100 ppm (2007)                                                                                                                                                | STEL 100 ppm STEL 416 mg/m <sup>3</sup> TWA 50 ppm TWA 208 mg/m <sup>3</sup>      | TWA 50 ppm STEL 100 ppm                                                       |
| alpha-methyl styrene 98-83-9 | TWA 50 ppm TWA 246 mg/m <sup>3</sup> STEL 100 ppm STEL 492 mg/m <sup>3</sup> | TWA 50 ppm                                                                                                                                                                     | STEL 100 ppm STEL 491 mg/m <sup>3</sup> TWA 50 ppm TWA 246 mg/m <sup>3</sup>      | TWA 50 ppm TWA 246 mg/m <sup>3</sup> STEL 100 ppm STEL 490 mg/m <sup>3</sup>  |
| cobalt octoate 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> |        |

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|                                                         |                  |                  |                         |  |
|---------------------------------------------------------|------------------|------------------|-------------------------|--|
| 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>  |  |

## Methyl methacrylate (80-62-6)

| Type                                                 | DNEL oral | DNEL dermal            | DNEL inhalation        | Remark |
|------------------------------------------------------|-----------|------------------------|------------------------|--------|
| Workers - Long Term - Systemic effect                |           | 13.67 mg/kg bw/day     | 208 mg/m <sup>3</sup>  |        |
| Workers - Long Term - Local effect                   |           | 1.5 mg/cm <sup>2</sup> | 208 mg/m <sup>3</sup>  |        |
| Workers - Acute Short Term - Local effect            |           | 1.5 mg/cm <sup>2</sup> |                        |        |
| General Population - Long Term - Systemic effect     |           | 8.2 mg/kg bw/day       | 74.3 mg/m <sup>3</sup> |        |
| General Population - Long Term - Local effect        |           | 1.5 mg/cm <sup>2</sup> | 104 mg/m <sup>3</sup>  |        |
| General Population - Acute Short Term - Local effect |           | 1.5 mg/cm <sup>2</sup> |                        |        |

## Propylidynetrimethanol (77-99-6)

| Type                                             | DNEL oral         | DNEL dermal       | DNEL inhalation        | Remark |
|--------------------------------------------------|-------------------|-------------------|------------------------|--------|
| Workers - Long Term - Systemic effect            |                   | 0.94 mg/kg bw/day | 3.3 mg/m <sup>3</sup>  |        |
| General Population - Long Term - Systemic effect | 0.34 mg/kg bw/day | 0.34 mg/kg bw/day | 0.58 mg/m <sup>3</sup> |        |

## alpha-methyl styrene (98-83-9)

| Type                                             | DNEL oral        | DNEL dermal              | DNEL inhalation        | Remark |
|--------------------------------------------------|------------------|--------------------------|------------------------|--------|
| Workers - Long Term - Systemic effect            |                  | 2.8 mg/kg bw/day         | 246 mg/m <sup>3</sup>  |        |
| Workers - Acute Short Term - Local effect        |                  |                          | 492 mg/m <sup>3</sup>  |        |
| Workers - Long Term - Local effect               |                  | 0.105 mg/cm <sup>2</sup> |                        |        |
| General Population - Long Term - Systemic effect | 0.1 mg/kg bw/day | 1.4 mg/kg bw/day         | 4.83 mg/m <sup>3</sup> |        |
| General Population - Long Term - Local effect    |                  | 0.052 mg/cm <sup>2</sup> |                        |        |

## cobalt octoate (136-52-7)

| Type | DNEL oral | DNEL dermal | DNEL inhalation | Remark |
|------|-----------|-------------|-----------------|--------|
|------|-----------|-------------|-----------------|--------|

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|                                                  |                  |  |                         |  |
|--------------------------------------------------|------------------|--|-------------------------|--|
| 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      |
| 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         |

|                               |               |                        |
|-------------------------------|---------------|------------------------|
| Methyl methacrylate (80-62-6) |               |                        |
| Exposure                      | Type          | PNEC                   |
| Fresh water                   | PNEC Aqua     | 0.94 mg/L              |
| Marine water                  | PNEC Aqua     | 0.94 mg/L              |
| Intermittent use/release      | PNEC Aqua     | 0.94 mg/L              |
| Fresh water                   | PNEC Sediment | 5.74 mg/kg sediment dw |
| Terrestrial Compartment       | PNEC Soil     | 1.47 mg/kg soil dw     |
|                               | PNEC STP      | 10 mg/L                |

|                                |           |            |
|--------------------------------|-----------|------------|
| alpha-methyl styrene (98-83-9) |           |            |
| Exposure                       | Type      | PNEC       |
| Fresh water                    | PNEC Aqua | 0.008 mg/L |

|                          |               |                          |
|--------------------------|---------------|--------------------------|
| Marine water             | PNEC Aqua     | 0.001 mg/L               |
| Intermittent use/release | PNEC Aqua     | 0.01645 mg/L             |
| Fresh water              | PNEC Sediment | 0.583 mg/kg sediment dw  |
| Marine water             | PNEC Sediment | 0.0583 mg/kg sediment dw |
|                          | PNEC Soil     | 0.112 mg/kg soil dw      |
|                          | PNEC STP      | 66.15 mg/L               |

|                           |               |                        |
|---------------------------|---------------|------------------------|
| 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

Use personal protective equipment.

##### Respiratory protection

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 :

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Breathing apparatus with filter Type A ( Organic gases and vapours filter conforming to EN 14387 , APF 40 < 1 hour, APF 200 > 1 hour)

## Eye protection

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

## Skin and body protection

Antistatic boots. Protective shoes or boots. Wear fire/flame 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.

## 9. Physical and Chemical Properties

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

| Property                 | Values           | Remark                              |
|--------------------------|------------------|-------------------------------------|
| Physical state           | Liquid           |                                     |
| Colour                   | blue green clear |                                     |
| Appearance               |                  | No data available                   |
| Particle size            |                  | No data available                   |
| Odour                    | Pungent          |                                     |
| Odour Threshold          | 0.15 ppm         | (styrene) 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                   |

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|                                        |                                      |                                       |
|----------------------------------------|--------------------------------------|---------------------------------------|
| Softening point                        |                                      | No data available                     |
| Boiling point                          | 100 - 146 °C                         |                                       |
| Flash point                            | 26 °C                                | Seta closed cup (ISO 3679)            |
| Flammability                           |                                      | No data available                     |
| Flammability Limit in Air              |                                      |                                       |
| Upper                                  | 12.5%                                | (styrene)                             |
| Lower                                  | 1.1%                                 | (styrene)                             |
| Vapour pressure                        | 1 hPa kPa                            | @20 °C 25°C Values related to styrene |
| Vapour density                         | 3.6 - 3.94 (Air = 1)                 |                                       |
| Density                                | 1.1 - 1.14 g/cm <sup>3</sup>         | 23°C                                  |
| Specific Gravity                       |                                      | No data available                     |
| Bulk density                           |                                      | No data available                     |
| Water solubility                       | insoluble Insoluble in water (Water) |                                       |
| Solubility in other solvents           |                                      | No data available                     |
| Partition coefficient: n-octanol/water | 3                                    | Values related to styrene             |
| Autoignition temperature               | 430 - 490 °C                         | (DIN 51794)                           |
| Decomposition temperature              |                                      | No data available                     |
| Viscosity, kinematic                   | 273 - 364 mm <sup>2</sup> /s         | No data available                     |
| Viscosity, dynamic                     | 300 - 400 cps                        | 23 °C Cone & Plate                    |

## 9.2. Other Information

Information with regards to physical hazard classes

| Property                                                                   | Values | Remark            |
|----------------------------------------------------------------------------|--------|-------------------|
| Explosives                                                                 |        | No data available |
| Flammable gases                                                            |        | No data available |
| Aerosols                                                                   |        | No data available |
| Oxidising gases                                                            |        | No data available |
| Gases under pressure                                                       |        | No data available |
| Flammable liquids                                                          |        | No data available |
| Flammable solids                                                           |        | No data available |
| Pyrophoric liquids                                                         |        | No data available |
| Pyrophoric solids                                                          |        | No data available |
| Self-heating substances and mixtures                                       |        | No data available |
| Substances and mixtures which, in contact with water, emit flammable gases |        | No data available |
| Oxidising liquids                                                          |        | No data available |
| Oxidising solids                                                           |        | No data available |
| Oxidising Properties                                                       |        | No data available |

|                         |                   |
|-------------------------|-------------------|
| Organic peroxides       | No data available |
| Corrosive to metals     | No data available |
| Desensitised explosives | No data available |

## Other safety characteristics

|                                                                 |                     |
|-----------------------------------------------------------------|---------------------|
| Sensitivity to Mechanical Impact                                | No data available   |
| SAPT (self-accelerating polymerisation temperature)             | No data available   |
| Formation of explosible dust/air mixtures Acid/alkaline reserve | No data available   |
| Evaporation rate                                                | 0.49-3.1 (BuAc = 1) |
| Miscible                                                        | No data available   |
| Conductivity                                                    | No data available   |
| Corrosiveness Gas group                                         | No data available   |
| Redox potential                                                 | No data available   |
| Photocatalytic properties                                       | No data available   |

## 10. Stability and Reactivity

### 10.1. Reactivity

|                   |                                                                       |
|-------------------|-----------------------------------------------------------------------|
| <b>Reactivity</b> | Product may ignite and burn at temperatures exceeding the flash point |
|-------------------|-----------------------------------------------------------------------|

### 10.2. Chemical stability

|                  |                                             |
|------------------|---------------------------------------------|
| <b>Stability</b> | Stable under recommended storage conditions |
|------------------|---------------------------------------------|

### 10.3. Possibility of hazardous reactions

|                                 |                                                          |
|---------------------------------|----------------------------------------------------------|
| <b>Hazardous reactions</b>      | In use, may form flammable/explosive vapour-air mixture. |
| <b>Hazardous polymerization</b> | Polymerisation can occur                                 |

### 10.4. Conditions to avoid

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

## 10.5. Incompatible materials

**Incompatible materials**

**Strong oxidizing agents, 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

## 11. Toxicological Information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Acute toxicity**

**Inhalation Harmful:**

danger of serious damage to health by prolonged exposure through inhalation  
Irritating to respiratory system

**Ingestion :**

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

| Chemical Name                                                                    | LD50 Oral                                | LD50 Dermal                                     | LC50 Inhalation                                                             | Read-across (Analogy) |
|----------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------|-----------------------|
| Styrene 100-42-5                                                                 | 5000 mg/kg (Rat)                         | > 2000 mg/kg bw (Rat) 24h<br>OECD 402           | 11.8 mg/L (Rat) 4h CSR                                                      |                       |
| Methyl methacrylate 80-62-6                                                      | > 5000 mg/kg bw (Rat)<br>OECD 401        | > 5000 mg/kg bw (Rabbit)<br>OECD 402            | 29.8 mg/L (7093 ppm)<br>(Rat) 4h (vapor)<br>OECD 403                        |                       |
| alpha-methyl styrene 98-83-9                                                     | 4900 mg/kg (Rat) OECD<br>GHS             | 14560 mg/kg bw (Rabbit)<br>OECD GHS             | 22.85 mg/L (Rat) 6h<br>Vapour 41600 mg/m <sup>3</sup> (Rat)<br>8h<br>Vapour |                       |
| Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides 68424-85-1 | 344 mg/kg bw (Rat) No guideline followed | 3340 mg/kg bw (Rabbit)<br>No guideline followed | 21500 mg/L (Rat) 1h No guideline followed                                   |                       |
| cobalt octoate 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) |
|------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------|
| Styrene 100-42-5             | Irritating to skin in vivo assay rabbit                                                                           |                       |
| Methyl methacrylate 80-62-6  | Irritating to skin rabbit<br>Draize Test                                                                          |                       |
| alpha-methyl styrene 98-83-9 | Mild skin irritation rabbit<br>Classification of corrosive hazards, Federal Register,<br>Vol 37, No 57, § 173.240 |                       |
| cobalt octoate 136-52-7      | No skin corrosion in vitro study OECD 431<br>EU Method B. 40                                                      |                       |

## Serious Eye Damage/Eye Irritation

| Chemical Name                | Serious Eye Damage/Eye Irritation                                                        | Read-across (Analogy) |
|------------------------------|------------------------------------------------------------------------------------------|-----------------------|
| Styrene 100-42-5             | Irritating to eyes in vivo assay rabbit                                                  |                       |
| Methyl methacrylate 80-62-6  | Mild eye irritation rabbit<br>Draize Test                                                |                       |
| alpha-methyl styrene 98-83-9 | Irritating to eyes rabbit                                                                |                       |
| cobalt octoate 136-52-7      | Moderate eye irritation OECD 437<br>EU Method B.47 Irritating to eyes rabbit<br>OECD 405 |                       |

## Respiratory or skin sensitisation

May produce an allergic reaction.

| Chemical Name                                                                          | Respiratory or skin sensitisation                                                    | Read-across (Analogy) |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------|
| Styrene 100-42-5                                                                       | Does not cause skin sensitization Does not cause<br>respiratory sensitization<br>CSR |                       |
| Methyl methacrylate 80-62-6                                                            | May cause sensitisation by skin contact mouse<br>OECD 429                            |                       |
| Propylidynetrimethanol 77-99-6                                                         | Does not cause skin sensitization in vivo assay<br>mouse<br>OECD 429                 |                       |
| alpha-methyl styrene 98-83-9                                                           | May cause sensitisation by skin contact mouse<br>OECD 429<br>EU Method B.42          |                       |
| Quaternary ammonium compounds,<br>benzyl-C12-16-alkyldimethyl,<br>chlorides 68424-85-1 | Does not cause skin sensitization in vivo assay<br>guinea pig<br>OECD 406            |                       |

# MATERIAL SAFETY DATA SHEET

|                         |                                                                            |  |
|-------------------------|----------------------------------------------------------------------------|--|
| cobalt octoate 136-52-7 | May cause sensitisation by skin contact in vivo assay<br>mouse<br>OECD 429 |  |
|-------------------------|----------------------------------------------------------------------------|--|

## Mutagenic Effects in vitro study

| Chemical Name                                                                          | Ames test                                                                                                                                                                     | Read-across (Analogy)          |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Styrene 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                                   |                                |
| Methyl methacrylate 80-62-6                                                            | negative<br>In vitro gene mutation study in bacteria OECD 471                                                                                                                 |                                |
| Propylidynetrimethanol 77-99-6                                                         | 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                        |                                |
| alpha-methyl styrene 98-83-9                                                           | 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>similar to OECD 471<br>OECD 472 |                                |
| Quaternary ammonium compounds,<br>benzyl-C12-16-alkyldimethyl,<br>chlorides 68424-85-1 | negative<br>In vitro gene mutation study in bacteria Salmonella sp.<br>OECD 471                                                                                               |                                |
| cobalt octoate 136-52-7                                                                | negative<br>In vitro gene mutation study in bacteria<br>(S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA<br>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><br>In vitro gene mutation study in mammalian cells<br><br>hamster<br><br>OECD 476 |                       |
| Propylidynetrimethanol<br>77-99-6 | negative<br><br>In vitro gene mutation study in mammalian cells<br><br>hamster<br><br>OECD 476  |                       |

# MATERIAL SAFETY DATA SHEET

|                                                                                        |                                                                                                  |                                                         |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| alpha-methyl styrene<br>98-83-9                                                        | negative<br>In vitro gene mutation study in mammalian cells<br>hamster<br>similar to<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                                                    | <b>Read-across (Analogy)</b>                            |
| Styrene<br>100-42-5                                                                    | positive<br>Chromosome aberration test in vitro<br>OECD 473<br>OECD 479                          |                                                         |
| Propylidynetrimethanol<br>77-99-6                                                      | negative<br>Chromosome aberration test in vitro<br>hamster<br>OECD 473                           |                                                         |
| alpha-methyl styrene<br>98-83-9                                                        | negative<br>Chromosome aberration test in vitro<br>hamster<br>similar to<br>OECD 473             |                                                         |
| Quaternary ammonium compounds,<br>benzyl-C12-16-alkyldimethyl, chlorides<br>68424-85-1 | negative<br>Chromosome aberration test in vitro<br>Human lymphocytes<br>OECD 473                 |                                                         |

## in vivo assay

|                  |                                     |                       |
|------------------|-------------------------------------|-----------------------|
| Chemical Name    | Unscheduled DNA Synthesis (UDS)     | Read-across (Analogy) |
| Styrene 100-42-5 | negative mouse OECD 486<br>OECD 474 |                       |

# MATERIAL SAFETY DATA SHEET

|                              |                                      |                                               |
|------------------------------|--------------------------------------|-----------------------------------------------|
| Methyl methacrylate 80-62-6  | negative mouse OECD 478              |                                               |
| alpha-methyl styrene 98-83-9 | negative mouse similar to OECD 474   |                                               |
| cobalt octoate 136-52-7      | negative 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) |                          |         |                                                                                                                |            |
| Routes of Exposure | Method                   | Species | Dose                                                                                                           | Evaluation |
| Inhalation         | OECD 453                 | rat     | NOAEC systemic (carcinogenicity) $\geq 4.34$ 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) $\geq 2000$ mg/kg bw /day                                                              | positive   |
| Oral               | No information available | mouse   | LOAEL (carcinogenicity) = 150 mg/kg bw /day                                                                    | positive   |

| Methyl methacrylate (80-62-6) |          |         |                                                                                                                                                                                                                                     |            |
|-------------------------------|----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Routes of Exposure            | Method   | Species | Dose                                                                                                                                                                                                                                | Evaluation |
| Inhalation                    | OECD 451 | mouse   | NOAEC (carcinogenicity, systemic toxicity) $\geq 4.1$ mg/L air (male/female)<br>LOAEC (local toxicity) = 2.05 mg/L air (male/female)                                                                                                | negative   |
| Inhalation                    | OECD 451 | rat     | NOAEC (carcinogenicity) $\geq 2.05$ mg/L air (female)<br>NOAEC (carcinogenicity) $\geq 4.1$ mg/L air (male)<br>NOAEC (systemic toxicity) $\geq 2.05$ mg/L air (male/female)<br>LOAEC (local toxicity) = 1.03 mg/L air (male/female) | negative   |

|                                |
|--------------------------------|
| alpha-methyl styrene (98-83-9) |
|--------------------------------|

# MATERIAL SAFETY DATA SHEET

| Routes of Exposure | Method              | Species   | Dose                                    | Evaluation |
|--------------------|---------------------|-----------|-----------------------------------------|------------|
| Inhalation         | similar to OECD 451 | mouse rat | LOAEC (male/female) 105 weeks = 100 ppm | negative   |

## Reproductive toxicity

| Reproductive toxicity |                          |         |                                                                                                                                  |            |
|-----------------------|--------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------|------------|
| Styrene (100-42-5)    |                          |         |                                                                                                                                  |            |
| Routes of Exposure    | 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   |

| Methyl methacrylate (80-62-6) |          |         |                                                                                                                                                                                                                          |            |
|-------------------------------|----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Routes of Exposure            | Method   | Species | Dose                                                                                                                                                                                                                     | Evaluation |
| Oral                          | OECD 416 | rat     | NOAEL (general, systemic toxicity) = 50 mg/kg bw/day (male/female)<br>NOAEL (fertility and reproductive performance) = 400 mg/kg bw/day (male/female)<br>NOAEL (developmental toxicity) = 400 mg/kg bw/day (male/female) | negative   |

| Propylidynetrimeethanol (77-99-6) |          |         |                                                                                |            |
|-----------------------------------|----------|---------|--------------------------------------------------------------------------------|------------|
| Routes of Exposure                | Method   | Species | Dose                                                                           | Evaluation |
| Oral                              | OECD 443 | rat     | NOAEL (general toxicity) = 740 ppm<br>NOAEL (reproductive toxicity) = 2200 ppm | positive   |
| Oral                              | OECD 421 | rat     | NOAEL (parental, reproduction & developmental toxicity) > 6000 ppm             | negative   |

# MATERIAL SAFETY DATA SHEET

| alpha-methyl styrene (98-83-9) |                     |         |                                                                                                           |            |
|--------------------------------|---------------------|---------|-----------------------------------------------------------------------------------------------------------|------------|
| Routes of Exposure             | Method              | Species | Dose                                                                                                      | Evaluation |
| Oral                           | OECD 422            | rat     | NOEL (parental females) = 200 mg/kg bw/day<br>NOEL (parental males) = 1000 mg/kg bw/day                   | negative   |
| Inhalation                     | similar to OECD 416 | rat     | NOAEC (systemic toxicity) male/female = 0.21 mg/L<br>NOAEC (reproductive toxicity) male/female = 2.1 mg/L | negative   |

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

## Developmental Toxicity

Suspected of damaging the unborn child

| Developmental Toxicity |                          |         |                                                                                      |            |
|------------------------|--------------------------|---------|--------------------------------------------------------------------------------------|------------|
| Styrene (100-42-5)     |                          |         |                                                                                      |            |
| Routes of Exposure     | 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   |

| Methyl methacrylate (80-62-6) |          |         |                                                                                                                            |            |
|-------------------------------|----------|---------|----------------------------------------------------------------------------------------------------------------------------|------------|
| Routes of Exposure            | Method   | Species | Dose                                                                                                                       | Evaluation |
| Inhalation                    | OECD 414 | rat     | LOEC (maternal toxicity) = 0.41 mg/L air<br>NOAEC (fetotoxicity) >= 8.3 mg/L air<br>NOAEC (teratogenicity) >= 8.3 mg/L air | negative   |

# MATERIAL SAFETY DATA SHEET

|      |          |        |                                                                                                     |          |
|------|----------|--------|-----------------------------------------------------------------------------------------------------|----------|
| Oral | OECD 414 | rabbit | NOAEL (maternal toxicity)<br>= 50 mg/kg bw/day<br>NOAEL (developmental toxicity) = 450 mg/kg bw/day | negative |
|------|----------|--------|-----------------------------------------------------------------------------------------------------|----------|

| Propylidynetrimethanol (77-99-6) |                                            |         |                                                                  |            |
|----------------------------------|--------------------------------------------|---------|------------------------------------------------------------------|------------|
| Routes of Exposure               | Method                                     | Species | Dose                                                             | Evaluation |
| Oral                             | OECD 414 EU Method B.31 EPA OPPTS 870.3700 | rabbit  | NOAEL (maternal & developmental toxicity)<br>>= 450 mg/kg bw/day | negative   |

| alpha-methyl styrene (98-83-9) |                                                            |            |                                                                                                                                                                                                                             |            |
|--------------------------------|------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Routes of Exposure             | Method                                                     | Species    | Dose                                                                                                                                                                                                                        | Evaluation |
| Inhalation                     | similar to OECD 414 Read-across (Analogy) Cas N°: 100-42-5 | rat rabbit | LOAEC (maternal toxicity) = 297 ppm<br>NOAEC (developmental toxicity) = 600 ppm<br>LOAEL (maternal toxicity) = 180 mg/kg bw/day<br>NOAEL (developmental toxicity) = 300 mg/kg bw/day<br>NOAEC (maternal toxicity) = 600 ppm | positive   |

## Specific target organ toxicity - single exposure:

May cause irritation of respiratory tract

| STOT - single exposure         |                          |         |              |         |
|--------------------------------|--------------------------|---------|--------------|---------|
| alpha-methyl styrene (98-83-9) |                          |         |              |         |
| Routes of Exposure             | Method                   | Species | Dose         | Remarks |
| Inhalation                     | No information available |         | C >= 600 ppm |         |

## Specific target organ toxicity - repeated exposure:

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

| STOT - repeated exposure |        |         |      |         |
|--------------------------|--------|---------|------|---------|
| Styrene (100-42-5)       |        |         |      |         |
| Routes of Exposure       | Method | Species | Dose | Remarks |
|                          |        |         |      |         |

# MATERIAL SAFETY DATA SHEET

|            |                          |           |                                                                                                                                                                                         |  |
|------------|--------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 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                                                                                                                                                  |  |

| Methyl methacrylate (80-62-6) |          |         |                                                                                                    |         |
|-------------------------------|----------|---------|----------------------------------------------------------------------------------------------------|---------|
| Routes of Exposure            | Method   | Species | Dose                                                                                               | Remarks |
| Oral                          | OECD 453 | rat     | NOAEL (male/female) >= 2000 ppm<br>NOAEL (male) >= 124.1 mg/kg bw/day<br>NOAEL >= 164 mg/kg bw/day |         |
| Inhalation                    | OECD 453 | rat     | NOAEC (90d) = 1000 ppm                                                                             |         |

| alpha-methyl styrene (98-83-9) |        |         |      |         |
|--------------------------------|--------|---------|------|---------|
| Routes of Exposure             | Method | Species | Dose | Remarks |

# MATERIAL SAFETY DATA SHEET

|            |                     |     |                                        |  |
|------------|---------------------|-----|----------------------------------------|--|
| Inhalation | similar to OECD 413 | rat | NOAEC (male/female) 14 weeks = 300 ppm |  |
|------------|---------------------|-----|----------------------------------------|--|

| cobalt octoate (136-52-7) |                                                                 |         |                              |         |
|---------------------------|-----------------------------------------------------------------|---------|------------------------------|---------|
| Routes of Exposure        | Method                                                          | Species | Dose                         | Remarks |
| Oral                      | Read-across (Analogy)<br>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.

## 11.2. Information on Other Hazards

**Endocrine disrupting properties** No information available

**Other information** None

## 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 100-42-5            | EC50 (72h) = 4.9 mg/L (Pseudokirchnerella subcapitata) EPA OTS 797.1050 | EC50 (48h) = 4.7 mg/L (Daphnia magna) NOEC = 1.9 mg/L (Daphnia magna) OECD 202 | LC50 (96h) = 4.02 - 10 mg/L (Pimephales promelas) OECD 203 | EC (30min) = 500 mg/L (Activated sludge of a predominantly domestic sewage) OECD 209 |
| Methyl methacrylate 80-62-6 | EC50 (72h) > 110 mg/L (Selenastrum capricornutum) OECD 201              | EC50 (48h) = 69 mg/L (Daphnia magna) OECD 202                                  | LC50 (96h) = 79 mg/L (Oncorhynchus mykiss) OECD 203        | EC3 (16h) = 100 mg/L (Pseudomonas putida) inhibition test, Bringmann-Kühn            |

# MATERIAL SAFETY DATA SHEET

|                                                                                        |                                                                                                                                                                                               |                                                                                                                                                                                                           |                                                                                                                                                          |                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| alpha-methyl styrene<br>98-83-9                                                        | EC50 (72h) = 11.441 mg/L<br>(Desmodesmus subspicatus)<br>NOEC (72h) = 2.26 mg/L<br>(Desmodesmus subspicatus)<br>LOEC (72h) = 8.3 mg/L<br>(Desmodesmus subspicatus)<br>OECD 201, EU Method C.3 | EC50 (48h) = 1.645 mg/L<br>(Daphnia magna)<br>EC10 (48h) = 0.99 mg/L<br>(Daphnia magna)<br>NOEC (48h) = 0.64 mg/L<br>(Daphnia magna)<br>LOEC (48h) = 1.21 mg/L<br>(Daphnia magna) OECD 202, EU Method C.2 | LC50 (96h) = 2.97 mg/L<br>(Danio rerio)<br>NOEC (96h) = 2.13 mg/L<br>(Danio rerio)<br>LOEC (96h) = 3.19 mg/L<br>(Danio rerio)<br>OECD 203, EU Method C.1 | EC10 (3h) = 661.5 mg/L<br>(Activated sludge of a predominantly domestic sewage)<br>EC50 (3h) > 2 000 mg/L<br>(Activated sludge of a predominantly domestic sewage)<br>OECD 209, EU Method C.11 |
| Quaternary ammonium compounds,<br>benzyl-C12-16-alkyldimethyl, chlorides<br>68424-85-1 | ErC50 (72h) = 0.049 mg/L<br>(Pseudokirchneriella subcapitata) OECD 201                                                                                                                        | EC50 (48h) = 0.016 mg/L<br>(Daphnia magna) OECD 202                                                                                                                                                       | LC50 (96h) = 0.28 mg/L<br>(Pimephales promelas)<br>US-EPA                                                                                                | EC50 = 7.75 mg/L<br>(Activated sludge) OECD 209                                                                                                                                                |
| cobalt octoate                                                                         | EC50 (72h) = 144 µg                                                                                                                                                                           |                                                                                                                                                                                                           | LC50 (96h) = 1.512 mg/L                                                                                                                                  | EC10 (30 min) = 3.73 mg/L                                                                                                                                                                      |
| 136-52-7                                                                               | Codiss./L                                                                                                                                                                                     |                                                                                                                                                                                                           | (Oncorhynchus mykiss)                                                                                                                                    | (Activated sludge)                                                                                                                                                                             |
|                                                                                        | (Pseudokirchneriella                                                                                                                                                                          |                                                                                                                                                                                                           | NOEC (96h) = 0.939 mg/L                                                                                                                                  | EC50 (30 min) = 120 mg/L                                                                                                                                                                       |
|                                                                                        | subcapitata)                                                                                                                                                                                  |                                                                                                                                                                                                           | (Oncorhynchus mykiss)                                                                                                                                    | (Activated sludge)                                                                                                                                                                             |
|                                                                                        | NOEC (72h) = 32.2 µg./L                                                                                                                                                                       |                                                                                                                                                                                                           | LOEC (96h) = 1.577 mg/L                                                                                                                                  | Read across with Cas N°:                                                                                                                                                                       |
|                                                                                        | (Pseudokirchneriella                                                                                                                                                                          |                                                                                                                                                                                                           | (Oncorhynchus mykiss)                                                                                                                                    | 7646-79-9                                                                                                                                                                                      |
|                                                                                        | subcapitata)                                                                                                                                                                                  |                                                                                                                                                                                                           | ASTM guideline (1996)                                                                                                                                    | OECD 209                                                                                                                                                                                       |
|                                                                                        | LOEC (72h) = 52.7 µg                                                                                                                                                                          |                                                                                                                                                                                                           |                                                                                                                                                          |                                                                                                                                                                                                |
|                                                                                        | Codiss./L                                                                                                                                                                                     |                                                                                                                                                                                                           |                                                                                                                                                          |                                                                                                                                                                                                |
|                                                                                        | (Pseudokirchneriella                                                                                                                                                                          |                                                                                                                                                                                                           |                                                                                                                                                          |                                                                                                                                                                                                |

# MATERIAL SAFETY DATA SHEET

|  |              |  |  |  |
|--|--------------|--|--|--|
|  | subcapitata) |  |  |  |
|  | OECD 201     |  |  |  |

## Chronic aquatic toxicity - Component Information

| Chemical Name                | Toxicity to algae                                                                                                        | Toxicity to daphnia and other aquatic invertebrates.                                                                                      | Toxicity to fish                                                     | Toxicity to microorganisms                                               |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------|
| Styrene 100-42-5             |                                                                                                                          | NOEC (21d) = 1.01 mg/L (Daphnia magna)<br>LOEC (21d) = 2.06 mg/L (Daphnia magna)<br>EC50 (21d) = 1.88 mg/L (Daphnia magna) OECD 203       |                                                                      |                                                                          |
| Methyl methacrylate 80-62-6  | NOEC (72h) = 49 mg/L (Selenastrum capricornutum) OECD 201                                                                | NOEC (21d) = 37 mg/L (Daphnia magna) OECD 211                                                                                             | NOEC (35d) = 9.4 mg/L, LOEC (35d) = 18.8 mg/L (Danio rerio) OECD 210 | NOEC (28d) > 1000 mg/kg soil dw<br>OECD Chemicals Testing Program UPEC/3 |
| alpha-methyl styrene 98-83-9 |                                                                                                                          | NOEC (21d) = 0.401 mg/L (Daphnia magna)<br>LC50 (21d) = 1.56 mg/L (Daphnia magna)<br>EC50 (21d) = 1.11 mg/L (Daphnia magna) OECD 211      |                                                                      |                                                                          |
| cobalt octoate 136-52-7      | EC50 (7d) = 90.1 µg/L (Lemna minor)<br>NOEC (7d) = 3.0 µg/L (Lemna minor)<br>LOEC (7d) = 8.8 µg/L (Lemna minor) OECD 221 | NOEC (21d) = 60.8 µg/L (Daphnia magna)<br>LC50 (21d) = 121.3 mg/L (Daphnia magna) LOEC (21d) = 93.3 µg Codiss./L (Daphnia magna) OECD 211 |                                                                      |                                                                          |

## Effects on terrestrial organisms - Component Information

| Acute toxicity                                                                     |             |                          |                                  |         |
|------------------------------------------------------------------------------------|-------------|--------------------------|----------------------------------|---------|
| Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides (68424-85-1) |             |                          |                                  |         |
| Acute toxicity                                                                     | Test Method | Species                  | Values                           | Remarks |
| Other plants                                                                       | OECD 208    | No information available | EC50 = 277 - 1900 mg/kg bw (14d) |         |

# MATERIAL SAFETY DATA SHEET

| 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 |         |

| Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides (68424-85-1) |          |                 |                            |         |
|------------------------------------------------------------------------------------|----------|-----------------|----------------------------|---------|
| Chronic toxicity                                                                   | Method   | Species         | Values                     | Remarks |
| Toxicity to soil dwelling organisms.                                               | OECD 216 | Soil            | EC50 > 1000 mg/kg bw (28d) |         |
| Toxicity to terrestrial organisms.                                                 | OECD 207 | Eisenia foetida | LC50 = 7070 mg/kg bw (14d) |         |

## 12.2. Persistence and degradability

| Chemical Name                  | Degradation                            | Evaluation |
|--------------------------------|----------------------------------------|------------|
| Propylidynetrimethanol 77-99-6 | DT50 > 1 year (25°C)                   | Stable     |
| alpha-methyl styrene 98-83-9   | Stable (pH = 4, 7, 9) 25°C<br>OECD III | Stable     |

| Chemical Name                                                                    | Biodegradation                                                                  | Evaluation                |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|
| Styrene 100-42-5                                                                 | 87% (20d) similar to OECD 301D                                                  | Readily biodegradable     |
| Methyl methacrylate 80-62-6                                                      | 94.3 % (14d)<br>OECD 301 C                                                      | Readily biodegradable     |
| Propylidynetrimethanol 77-99-6                                                   | 6% (28d)<br>Similar to OECD 301 E                                               | Not readily biodegradable |
| alpha-methyl styrene 98-83-9                                                     | 21% (28d)<br>OECD 301F, EU Method C.4-D 56% (28d)<br>OECD 301D, EU Method C.4-E | Not readily biodegradable |
| Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides 68424-85-1 | 95.5% (28d) OECD 301B                                                           | Readily biodegradable     |
| cobalt octoate 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                            |

|                               |         |                               |
|-------------------------------|---------|-------------------------------|
| Methyl methacrylate (80-62-6) |         |                               |
| Method                        | Species | Bioconcentration factor (BCF) |
| Calculation method QSAR       |         | 2.97                          |

|                                  |                 |                               |
|----------------------------------|-----------------|-------------------------------|
| Propylidynetrimethanol (77-99-6) |                 |                               |
| Method                           | Species         | Bioconcentration factor (BCF) |
| OECD 305 C                       | Cyprinus carpio | BCF < 17                      |

|                                |                 |                                                                                       |
|--------------------------------|-----------------|---------------------------------------------------------------------------------------|
| alpha-methyl styrene (98-83-9) |                 |                                                                                       |
| Method                         | Species         | Bioconcentration factor (BCF)                                                         |
| OECD 305 C                     | Cyprinus carpio | BCF (56d) = 15 - 140 (25°C) C = 0.3 mg/L<br>BCF (56d) = 12 - 113 (25°C) C = 0.03 mg/L |

|                                |         |
|--------------------------------|---------|
| Chemical Name                  | log Pow |
| Styrene 100-42-5               | 3       |
| Methyl methacrylate 80-62-6    | 1.38    |
| Propylidynetrimethanol 77-99-6 | -0.47   |
| alpha-methyl styrene 98-83-9   | 3.48    |

## 12.4. Mobility in soil

|                              |             |     |
|------------------------------|-------------|-----|
| Chemical Name                | LogKoc      | Koc |
| Styrene 100-42-5             | 2.55        | 352 |
| Methyl methacrylate 80-62-6  | 0.94 - 1.86 | -   |
| alpha-methyl styrene 98-83-9 | 2.84        | 892 |

## 12.5. Results of PBT and vPvB

| Chemical Name                  | PBT                                                                                 | vPvB                                                                                    |
|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Styrene 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). |
| Methyl methacrylate 80-62-6    | 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). |
| Propylidynetrimechanol 77-99-6 | 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). |
| alpha-methyl styrene 98-83-9   | 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. Endocrine disrupting properties

**Endocrine disrupting properties** No information available

## 12.7. Other Adverse Effects

None known.

## 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.

## 14. Transport Information

### 14.1. UN number or ID 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  | Hazard class 3 |
| IMDG/IMO |                |

Hazard class 3  
ICAO/IATA  
Hazard class 3  
AND  
Hazard class 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  
Classification Code F1  
Tunnel restriction code (D/E)  
Limited quantity 5 L

IMDG/IMO  
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. Maritime transport in bulk according to IMO instruments

Transport in bulk according to Annex II of MARPOL and the IBC Code not applicable

## 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. 2020/878

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): Column1, n°3; Column 1, n° 40.

#### European Union

#### 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.

## 16. Other Information

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

H225 - Highly flammable liquid and vapour  
H226 - Flammable liquid and vapour  
H302 - Harmful if swallowed  
H304 - May be fatal if swallowed and enters airways  
H314 - Causes severe skin burns and eye damage  
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  
H335 - May cause respiratory irritation  
H360Fd - May damage fertility. Suspected of damaging the unborn child  
H361d - Suspected of damaging the unborn child  
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child  
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H411 - Toxic to aquatic life with long lasting effects  
H412 - Harmful to aquatic life with long lasting effects  
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

## 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**