

# SILVERSEEL

## BASECOAT RESIN

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

#### 1.1. Product identifier

Product name **SILVERSEEL**  
Chemical Name **Unsaturated polyester resin**  
Pure substance/mixture **Mixture**

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

Identified uses Resins for composites. Contact us before using for food contact application.

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

Supplier CFSNET LTD  
CFS Works  
United Down Ind. Park  
St Day, Redruth, UK TR16 5HY  
Tel : (+44)1209 821028

#### For further information, please contact

E-mail address [sales@cfsnet.co.uk](mailto:sales@cfsnet.co.uk)  
Internet Address [www.silverseel.co.uk](http://www.silverseel.co.uk)

#### 1.4. Emergency telephone number

Tel : (+44)1209 821028

#### Poison Information Centre telephone number

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

### SECTION 2: Hazards identification

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

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

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Reproductive Toxicity	Category 2
Specific Target Organ Toxicity (Single Exposure)	Category 3

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Specific target organ toxicity - repeated exposure	Category 1
Chronic Aquatic Toxicity	Category 3
Flammable liquids	Category 3

## 2.2. Label elements

Contains Styrene



**Signal word**

**Danger**

**Hazard statements**

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

Physical hazards

**EU H -Phrases**

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

**Precautionary statements**

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

## 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

**Hazardous components**

Chemical Name	EC-No	REACH Registration Number	CAS-No	Weight percent	GHS Classification
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Styrene	202-851-5	01-2119457861-32	100-42-5	~ 39	Flam. Liq. 3 (H226) Repr. 2 (H361d) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Asp. Tox. 1 (H304) STOT SE 3 (H335) STOT RE 1 (H372) Aquatic Chronic 3 (H412)
phthalic anhydride	201-607-5	01-2119457017-41	85-44-9	< 1	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) STOT SE 3 (H335)
Silica, amorphous, fumed, crystalline-free	231-545-4	01-2119379499-16	112945-52-5	< 1	-
Naphtha (petroleum), hydrodesulfurized heavy	265-185-4	01-2119490979-12	64742-82-1	~ 0.1	Flam. Liq. 3 (H226) Asp. Tox. 1 (H304) STOT SE 3 (H336) Aquatic Chronic 2 (H411)

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

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

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

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

<b>Eye Contact</b>	Irritating to eyes
<b>Skin contact</b>	Irritating to skin May produce an allergic reaction.
<b>Inhalation</b>	Harmful: danger of serious damage to health by prolonged exposure through inhalation Irritating to respiratory system May produce an allergic reaction.

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

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

**Notes to physician** No information available

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

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

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

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

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

## **SECTION 6: Accidental release measures**

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

#### **For non-emergency personnel**

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

#### **For emergency responders**

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

### **6.2. Environmental precautions**

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

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

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

### **6.4. Reference to other sections**

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

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

<b>Precautions for safe handling</b>	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
<b>Prevention of fire and explosion</b>	Keep away from open flames, hot surfaces and sources of ignition Do not use compressed air for filling, discharging or handling. Empty containers may contain flammable or explosive vapours
<b>Hygiene measures</b>	When using, do not eat, drink or smoke Provide regular cleaning of equipment, work area and clothing Wash hands before breaks and at the end of workday.

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

<b>Technical measures/Storage conditions</b>	Keep in a dry, cool and well-ventilated place. Keep at temperature not exceeding 30°C Keep away from heat and sources of ignition.
<b>Materials to avoid</b>	Strong oxidizing agents, Peroxides, Reducing agents
<b>Packaging material</b>	metallic GRP Tanks (Reinforced Glass Polyester)
<b>Unsuitable materials for containers</b>	copper, Copper alloys, Bronze, Zinc

### 7.3. Specific end use(s)

<b>Specific use(s)</b>	No information available
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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational Exposure limits

Chemical Name	European Union	ACGIH OEL (Ceiling)	The United Kingdom	Ireland
Styrene 100-42-5	-	TLV-8h TWA: 20 ppm - 85 mg/m <sup>3</sup> TLV-15min STEL: 40 ppm - 170 mg/m <sup>3</sup>	STEL 250 ppm STEL 1080 mg/m <sup>3</sup> TWA 100 ppm TWA 430 mg/m <sup>3</sup>	TWA 20 ppm TWA 85 mg/m <sup>3</sup> STEL 40 ppm STEL 170 mg/m <sup>3</sup>
phthalic anhydride 85-44-9		TWA 1 ppm	STEL 12 mg/m <sup>3</sup> TWA 4 mg/m <sup>3</sup> Sen+	TWA 4 mg/m <sup>3</sup> STEL 12 mg/m <sup>3</sup> Sensitizer

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

#### Biological standards

#### Derived No Effect Level (DNEL)

Derived No Effect Level (DNEL)				
Styrene (100-42-5)				
Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect		406 mg/Kg bw/day	85 mg/m <sup>3</sup>	
Workers - Acute Short Term - Local effect			306 mg/m <sup>3</sup>	

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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>	

## phthalic anhydride (85-44-9)

Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect		10 mg/kg bw/day	32.2 mg/m <sup>3</sup>	
General Population - Long Term - Systemic effect	5 mg/kg bw/day	5 mg/kg bw/day	8.6 mg/m <sup>3</sup>	

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

Type	DNEL oral	DNEL dermal	DNEL inhalation	Remark
Workers - Long Term - Systemic effect			4 mg/m <sup>3</sup>	

## 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

## phthalic anhydride (85-44-9)

Exposure	Type	PNEC
Fresh water	PNEC Aqua	1 mg/L
Marine water	PNEC Aqua	0.1 mg/L
Intermittent use/release	PNEC Aqua	5.6 mg/L
	PNEC STP	10 mg/L
Fresh water	PNEC Sediment	3.8 mg/kg sediment dw
Marine water	PNEC Sediment	0.38 mg/kg sediment dw
Terrestrial Compartment	PNEC Soil	0.173 mg/kg soil dw

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

Exposure	Type	PNEC
Secondary Poisoning	PNEC Oral	60000 mg/kg

## 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.

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<b>Respiratory protection</b>	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) If exposure limits are likely to be exceeded / In case of insufficient ventilation wear suitable respiratory equipment : Breathing apparatus with filter Type A ( Organic gases and vapours filter conforming to EN 14387 , APF 40 < 1 hour, APF 200 > 1 hour) / Type A(2)/P3 in combination with Particulates filter conforming to EN 143 , if exposed to dust
<b>Eye protection</b>	Safety glasses with side-shields. Do not wear contact lenses.
<b>Skin and body protection</b>	Antistatic boots. Protective shoes or boots. Wear fire/flame resistant/retardant clothing.
<b>Hand protection</b>	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Glove material : Neoprene , Nitriles , Viton (R) or Polyvinyl alcohol Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

## Environmental exposure controls

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

## **SECTION 9: Physical and chemical properties**

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

<u>Property</u>	<u>Values</u>	<u>Remark</u>
<b>Appearance</b>	pink	
<b>Physical state</b>	Liquid	
<b>Particle size</b>		no data available
<b>Odour</b>	Styrene	
<b>Odour Threshold</b>	0.15 ppm	Values related to styrene
<b>pH</b>		no data available
<b>pH (as aqueous solution)</b>		no data available
<b>Melting point/range</b>	- 30 °C	Values related to styrene
<b>Freezing Point</b>		no data available
<b>Boiling point</b>	145 °C	Values related to styrene
<b>Flash point</b>	31 °C	Values related to styrene
<b>Evaporation rate</b>		no data available
<b>Flammability Limits in Air</b>		
<b>upper</b>	6,1 - 6,8%	Values related to styrene
<b>lower</b>	0,9 -1,1%	Values related to styrene
<b>Vapour pressure</b>	6 hPa	20°C
<b>Vapour density</b>	3.6	Values related to styrene
<b>Density</b>	1.1 - 1.15 g/cm <sup>3</sup>	20°C
<b>Water solubility</b>	Insoluble in water	
<b>Partition coefficient: n-octanol/water</b>	3	Values related to styrene
<b>Autoignition temperature</b>	490 °C	Values related to styrene
<b>Decomposition temperature</b>		no data available
<b>Viscosity, kinematic</b>	409 - 591 mm <sup>2</sup> /s	23°C (Brookfield RVT)
<b>Viscosity, dynamic</b>	450 - 650 mPa.s	23°C (Brookfield RVT)
<b>Explosive properties</b>		not applicable
<b>Oxidizing properties</b>		not applicable

### 9.2. Other information

<u>Property</u>	<u>Values</u>	<u>Remark</u>
<b>Solubility in other solvents</b>	Soluble in most organic solvents	

## **SECTION 10: Stability and reactivity**

### 10.1. Reactivity

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

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## 10.2. Chemical stability

**Stability** Stable under recommended storage conditions.

## 10.3. Possibility of hazardous reactions

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

**Hazardous polymerisation** Polymerisation can occur.

## 10.4. Conditions to avoid

**Conditions to avoid** Heat, flames and sparks.  
Exposure to light.  
Take precautionary measures against static charges.

## 10.5. Incompatible materials

**Materials to avoid** 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

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity

**Inhalation** Harmful: danger of serious damage to health by prolonged exposure through inhalation  
Irritating to respiratory system May produce an allergic reaction.

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

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation	Read-across (Analogy)
Styrene 100-42-5	5000 mg/kg (Rat)	> 2000 mg/kg bw (Rat) 24h OECD 402	11.8 mg/L (Rat) 4h CSR	
phthalic anhydride 85-44-9	1530 mg/kg bw (Rat)	> 3160 mg/kg bw (Rabbit)	> 2.14 mg/L (Rat) 4h OECD 403	
Silica, amorphous, fumed, crystalline-free 112945-52-5	> 5000 mg/kg bw (Rat) OECD 401	> 5000 mg/kg (Rabbit)	> 0.14 mg/L air (Rat) 4h (analytical) OECD 403	

#### Skin corrosion/irritation

Chemical Name	Skin corrosion/irritation	Read-across (Analogy)
Styrene 100-42-5	Irritating to skin in vivo assay rabbit	
phthalic anhydride 85-44-9	Irritating to skin in vivo assay rabbit OECD 404	
Silica, amorphous, fumed, crystalline-free 112945-52-5	No skin irritation rabbit OECD 404	

#### 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	
phthalic anhydride 85-44-9	Irritating to eyes in vivo assay rabbit Draize Test	



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Silica, amorphous, fumed, crystalline-free 112945-52-5	No eye irritation rabbit OECD 405	
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**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 respiratory sensitization CSR	
phthalic anhydride 85-44-9	May cause sensitisation by inhalation and skin contact in vivo assay guinea pig OECD 406	
Silica, amorphous, fumed, crystalline-free 112945-52-5	Does not cause skin sensitization Does not cause respiratory sensitization	

## Mutagenic Effects

### in vitro study

Chemical Name	Ames test	Read-across (Analogy)
Styrene 100-42-5	Ambiguous In vitro gene mutation study in bacteria (S. typhimurium G46, TA1530, TA 1535, TA100, TA98, TA1538, TA 1537) OECD 471	
phthalic anhydride 85-44-9	negative In vitro gene mutation study in bacteria (S. typhimurium TA 1535, TA 1537, TA 98, TA100 and TA 102) (Escherichia coli WP2 uvrA) OECD 471	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative In vitro gene mutation study in bacteria OECD 471	

Chemical Name	In vitro Mammalian Cell Gene Mutation Test	Read-across (Analogy)
Styrene 100-42-5	Ambiguous In vitro gene mutation study in mammalian cells hamster OECD 476	
phthalic anhydride 85-44-9	negative In vitro gene mutation study in mammalian cells hamster OECD 476	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative In vitro gene mutation study in mammalian cells OECD 476	

Chemical Name	In vitro Mammalian Chromosome Aberration Test	Read-across (Analogy)
Styrene 100-42-5	positive Chromosome aberration test in vitro OECD 473 OECD 479	
phthalic anhydride 85-44-9	Ambiguous Chromosome aberration test in vitro hamster OECD 473	
Silica, amorphous, fumed, crystalline-free 112945-52-5	negative Chromosome aberration test in vitro OECD 473	

### in vivo assay

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

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Silica, amorphous, fumed, crystalline-free 112945-52-5	negative rat	
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## Carcinogenicity

Carcinogenicity				
Styrene (100-42-5)				
Exposure routes	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

## phthalic anhydride (85-44-9)

phthalic anhydride (85-44-9)				
Exposure routes	Method	Species	Dose	Evaluation
Oral	No information available	mouse	NOAEL (carcinogenicity, male) = 3570 mg/kg bw/day (72w) NOAEL (carcinogenicity, female) = 1785 mg/kg bw/day (72w)	negative
Oral	No information available	rat	NOAEL (carcinogenicity) = 1000 mg/kg bw/day (105w)	negative

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

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

## Reproductive toxicity

Reproductive toxicity				
Styrene (100-42-5)				
Exposure routes	Method	Species	Dose	Evaluation
Inhalation	No information available	rat	NOAEL/LOAEL (fertility) 60d = 100 - 200 mg/kg bw/day	positive
Oral	OECD 422	rat	NOAEL/LOAEL (fertility) 60d = 200 - 400 mg/kg bw/day	positive
Inhalation	OECD 416	rat	NOAEC (P, F1) = 0.64 mg/L air LOAEC (P, F1) = 2.13 mg/L air NOAEC (F2) = 0.21 mg/L air LOAEC (F2) = 0.64 mg/L air (70d)	negative

## phthalic anhydride (85-44-9)

phthalic anhydride (85-44-9)				
Exposure routes	Method	Species	Dose	Evaluation
Oral	No information available	mouse	NOAEL (reproductive, male) = 3570 mg/kg bw/day (72w) NOAEL (reproductive, female) = 1785 mg/kg bw/day (72w)	negative
Oral	No information available	rat	NOAEL (reproductive, female) = 1000 mg/kg bw/day (105w)	negative

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

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

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

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

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

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

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

<b>STOT - repeated exposure</b>				
<b>Styrene (100-42-5)</b>				
Exposure routes	Method	Species	Dose	Remarks
Inhalation	OECD 412	rat mouse	NOAEC male (28d) = 3.47 mg/L air NOAEC (ototoxicity) 28d = 2.13 mg/L air NOAEC (28d) = 0.181 mg/L air NOAEC (28d) = 0.688 mg/L air	
Inhalation	No information available	rat	NOAEC (nasal tract) = 0.85 mg/L air NOAEC (overall) = 2.13 mg/L air NOAEC (ototoxicity) = 0.85 mg/L air LOAEC (ototoxicity) = 3.41 mg/L air NOAEC (overall) = 2.13 mg/L air	

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Oral	No information available	rat	NOAEL (toxicity) = 1000 mg/kg bw/day LOAEL (toxicity) = 2000 mg/kg bw/day	
Oral	No information available	mouse	NOAEL (toxicity) = 150 mg/kg bw /day LOAEL (toxicity) = 300 mg/kg bw /day	
Inhalation	OECD 453	rat	LOAEC local (toxicity) = 0.21 mg/L air	

phthalic anhydride (85-44-9)				
Exposure routes	Method	Species	Dose	Remarks
Oral	No information available	rat	NOAEL = 1250 mg/kg bw/day LOAEL = 2500 mg/kg bw/day 7 weeks	
Oral	No information available	rat	NOAEL (105 weeks) = 500 mg/kg bw/day	
Oral	No information available	mouse	LOAEL (male) = 2340 mg/kg bw/day LOAEL (female) = 1717 mg/kg bw/day 72 weeks	

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

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

**Other information** None

## SECTION 12: Ecological information

### 12.1. Toxicity

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

#### Acute aquatic toxicity - Component Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates.	Toxicity to fish	Toxicity to microorganisms
Styrene 100-42-5	LC50 (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
phthalic anhydride 85-44-9	EC50 (72h) = 68 mg/L, NOEC (72h) = 32 mg/L (Pseudokirchnerella subcapitata) OECD 201	EC50 (48h) = 71 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 99 mg/L (Oryzias latipes) OECD 203	EC50 (3h) > 1000 mg/L (Activated sludge), ISO 8192 EC50 (16h) = 13 mg/L (Pseudomonas putida), ISO 10712

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Silica, amorphous, fumed, crystalline-free 112945-52-5		EL50 (24h) $\geq$ 1000 mg/L (Daphnia magna) OECD 202	LC50 (96h) > 10000 mg/L (Brachydanio rerio) OECD 203	
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## 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) LOEC (21d) = 2.06 mg/L (Daphnia magna) EC50 (21d) = 1.88 mg/L (Daphnia magna) OECD 203		
phthalic anhydride 85-44-9		NOEC (reproduction) 21d = 16 mg/L, EC50 (reproduction) 21d = 42 mg/L (Daphnia magna) OECD 211	LC50 (7d) = 560 mg/L (Danio rerio), OECD 210 LOEC (total embryotoxicity) 60d = 32 mg/L, NOEC (mortality, length, weight, embryotoxicity) 60d = 10 mg/L, OECD 210	

## Effects on terrestrial organisms - Component Information

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

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

## 12.2. Persistence and degradability

Chemical Name	Biodegradation	Evaluation
Styrene 100-42-5	87% (20d) similar to OECD 301D	Readily biodegradable
phthalic anhydride 85-44-9	68 % (10d), 74 % (30d) OECD 301 D	Readily biodegradable

## 12.3. Bioaccumulative potential

Bioconcentration factor (BCF)		
Styrene (100-42-5)		
Method	Species	Bioconcentration factor (BCF)
Calculation method		74
phthalic anhydride (85-44-9)		
Method	Species	Bioconcentration factor (BCF)
Calculation method		3.16 - 3.4

Chemical Name	log Pow

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Styrene 100-42-5	3
phthalic anhydride 85-44-9	1.6

## 12.4. Mobility in soil

Chemical Name	LogKoc	Koc
Styrene 100-42-5	2.55	352
phthalic anhydride 85-44-9	-	31

## 12.5. Results of PBT and vPvB assessment

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).
phthalic anhydride 85-44-9	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bioaccumulating (vPvB).
Silica, amorphous, fumed, crystalline-free 112945-52-5	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).	This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

## 12.6. Autres effets néfastes

None known.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Waste from Residues/Unused Products</b>	Dispose of in accordance with the European Directives on waste and hazardous waste. Do not flush into surface water or sanitary sewer system
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>Other information</b>	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

## SECTION 14: Transport information

### 14.1. UN number

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

### 14.2. UN proper shipping name

#### ADR/RID

Resin solution  
UN1866, RESIN SOLUTION, 3, PG III, (D/E)

#### IMDG/IMO

Resin solution  
UN1866, RESIN SOLUTION, 3, PG III, (31°C c.c.)

#### ICAO/IATA

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UN1866, RESIN SOLUTION, 3, PG III

## ADN

Resin solution

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

#### ADN

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

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

## SECTION 15: Regulatory information

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP]

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

European Union

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

### National regulatory information

#### The United Kingdom

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

#### Ireland

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

## 15.2. Chemical safety assessment

not applicable

## SECTION 16: Other information

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

H226 - Flammable liquid and vapour  
H302 - Harmful if swallowed  
H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H319 - Causes serious eye irritation  
H332 - Harmful if inhaled  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H361d - Suspected of damaging the unborn child  
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled  
H411 - Toxic to aquatic life with long lasting effects  
H412 - Harmful to aquatic life with long lasting effects  
EUH208 - May produce an allergic reaction

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

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

**Former date** 02-Aug-2017  
**Revision date** 21-Nov-2017  
**Revision Note** SDS sections updated : 3 , 11 , 12

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

### Disclaimer

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

End of Safety Data Sheet