

# SAFETY DATA SHEET



## SYNOLITE 3720-L-1

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

#### 1.1 Product identifier

Product name : SYNOLITE 3720-L-1  
 Internal code : 011942WW23379  
 Chemical product name : Polyester resin  
 Chemical formula : Not applicable.

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

Recommended use : Resins system used in the production of fibre reinforced plastics or non-reinforced filled products.

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

Supplier : DSM Composite Resins AG  
 Stettemerstrasse 28  
 CH-8207 Schaffhausen  
 Switzerland  
 Tel: +41 52 6441212  
 www.dsm.com/drs

e-mail address of person responsible for this SDS : DSMRESINS.SDS@dsm.com (Communication in English only please)

#### 1.4 Emergency telephone number

Emergency telephone number : Netherlands: +31 38 4569289

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Product definition : Mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 3, H226  
 Acute Tox. 4, H332  
 Skin Irrit. 2, H315  
 Eye Irrit. 2, H319  
 Repr. 2, H361d (Unborn child)  
 STOT SE 3, H335 (Respiratory tract irritation)  
 STOT RE 1, H372  
 Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

##### Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : R10  
 Xn; R20  
 Xi; R36/38

See Section 16 for the full text of the R-phrases declared above.

#### 2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 - Flammable liquid and vapour.  
 H332 - Harmful if inhaled.  
 H319 - Causes serious eye irritation.  
 H315 - Causes skin irritation.  
 H361d - Suspected of damaging the unborn child.  
 H335 - May cause respiratory irritation.  
 H372 - Causes damage to organs through prolonged or repeated exposure.  
 H412 - Harmful to aquatic life with long lasting effects.

**Supplemental label elements** : Contains cobalt bis(2-ethylhexanoate). May produce an allergic reaction.

**Precautionary statements**

**Prevention** : P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P280 - Wear protective gloves: 4 - 8 hours (breakthrough time): fluor rubber (Viton) (0.70 mm); < 1 hour (breakthrough time): Chloroprene , Nitril rubber (0.2 mm). Wear eye or face protection.  
 Wear protective clothing.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.  
 P242 - Use only non-sparking tools.  
 P243 - Take precautionary measures against static discharge.  
 P233 - Keep container tightly closed.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P273 - Avoid release to the environment.  
 P260 - Do not breathe vapour.  
 P270 - Do not eat, drink or smoke when using this product.  
 P264 - Wash hands thoroughly after handling.

**Response** : P314 - Get medical attention if you feel unwell.  
 P308 + P313 - IF exposed or concerned: Get medical attention.  
 P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
 P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.  
 P332 + P313 - If skin irritation occurs: Get medical attention.  
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337 + P313 - If eye irritation persists: Get medical attention.

**Storage** : P235 - Keep cool.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazardous ingredients** : Styrene

**2.3 Other hazards**

**Other hazards which do not result in classification** : Gas/vapour is heavier than air and may travel along the floor to a source of ignition and flash back.

**SECTION 3: Composition/information on ingredients**

**3.1 Substances / 3.2 Mixtures** : Mixture

Product/ingredient name	Identifiers	%	Classification	
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]
Styrene	REACH #: 01-2119457861-32 EC: 202-851-5 CAS: 100-42-5 Index: 601-026-00-0	>=35 - <50	R10  Xn; R20 Xi; R36/38	Flam. Liq. 3, H226  Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d (Unborn child) STOT SE 3, H335 (Respiratory tract irritation) STOT RE 1, H372 (ears) (inhalation) Asp. Tox. 1, H304 Aquatic Chronic 3, H412 Not classified.
silicon dioxide	EC: 231-545-4 CAS: 7631-86-9	>=1 - <5	Not classified.	Not classified.
cobalt bis(2-ethylhexanoate)	REACH #: 01-2119524678-29 EC: 205-250-6 CAS: 136-52-7	<0.25	Repr. Cat. 3; R62  Xi; R36 R43 N; R50/53	Eye Irrit. 2, H319  Skin Sens. 1, H317 Repr. 2, H361f (Fertility) Aquatic Acute 1, H400 Aquatic Chronic 3, H412 Acute Tox. 4, H302
1,4-dihydroxybenzene	REACH #: 01-2119524016-51	<0.1	Carc. Cat. 3; R40	

	EC: 204-617-8 CAS: 123-31-9 Index: 604-005-00-4		Muta. Cat. 3; R68 Xn; R22 Xi; R41 R43 N; R50  <b>See Section 16 for the full text of the R-phrases declared above.</b>	Eye Dam. 1, H318 Skin Sens. 1, H317 Muta. 2, H341 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410  <b>See Section 16 for the full text of the H statements declared above.</b>
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There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** :  Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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

#### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** :  Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations
- Skin contact** :  Adverse symptoms may include the following:  
irritation  
redness  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
 reduced foetal weight  
 increase in foetal deaths  
 skeletal malformations

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

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Small fire

**Suitable** : Use dry chemical powder, CO<sub>2</sub> or alcohol-resistant foam. Cover with vermiculite or other non-combustible material.

**Not suitable** : Do not use water jet.

#### Large fire

**Suitable** : Alcohol-resistant foam.

**Not suitable** : Do not use water jet.

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

**Hazards from the substance or mixture** : Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. Gas/vapour is heavier than air and may travel along the floor to a source of ignition and flash back.

**Hazardous combustion products** : In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, (dense) black smoke, aldehydes, organic acids.

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Additional information** : None.

## SECTION 6: Accidental release measures

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

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

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

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**7.2 Conditions for safe storage, including any incompatibilities** : Do not store above the following temperature: 30°C (86°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ventilation required along the floor. Store in original container, protected from direct sunlight.  
Do not store above the following temperature: 30 °C.

Keep away from heat and direct sunlight.

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker or exposure or environmental releases.

### 8.1 Control parameters

#### Occupational exposure limits

styrene	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> STEL: 250 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 430 mg/m <sup>3</sup> 8 hours. STEL: 1080 mg/m <sup>3</sup> 15 minutes.
silicon dioxide	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 6 mg/m <sup>3</sup> 8 hours. Form: inhalable dust TWA: 2.4 mg/m <sup>3</sup> 8 hours. Form: respirable dust
cobalt bis(2-ethylhexanoate)	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Skin sensitizer.</b> TWA: 0.1 mg/m <sup>3</sup> , (as Co) 8 hours.
1,4-dihydroxybenzene	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 0.5 mg/m <sup>3</sup> 8 hours.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
styrene	DNEL	Short term Inhalation	289 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Short term Inhalation	306 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	85 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Short term Inhalation	174.25 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Short term Inhalation	182.75 mg/m <sup>3</sup>	Consumers	Local
	DNEL	Long term Inhalation	10.2 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Long term Dermal	406 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	343 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Oral	2.1 mg/kg bw/day	Consumers	Systemic
	cobalt bis(2-ethylhexanoate)	DNEL	Long term Inhalation	0.2351 mg/m <sup>3</sup>	Workers
DNEL		Long term Inhalation	0.037 mg/m <sup>3</sup>	Consumers	Local
DNEL		Long term Oral	0.0558 mg/kg bw/day	Consumers	Systemic
1,4-dihydroxybenzene	DNEL	Long term Inhalation	7 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Dermal	128 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1.74 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Long term Inhalation	0.5 mg/m <sup>3</sup>	Consumers	Local
	DNEL	Long term Dermal	64 mg/kg bw/day	Consumers	Systemic

#### PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail	
styrene	Fresh water	0.028 mg/l	Assessment Factors	
	Marine water	0.014 mg/l	Assessment Factors	
	Fresh water sediment	0.614 mg/kg dwt	-	
	Marine water sediment	0.307 mg/kg dwt	-	
	Sewage Treatment Plant	5 mg/l	Assessment Factors	
	Soil	0.2 mg/kg dwt	-	
	cobalt bis(2-ethylhexanoate)	Intermittent releases.	0.04 mg/l	Assessment Factors
		Fresh water	0.51 µg/l	-
		Marine water	2.36 µg/l	-
		Sewage Treatment Plant	0.37 mg/l	-
Fresh water sediment		9.5 mg/kg	-	
Marine water sediment		9.5 mg/kg	-	
1,4-dihydroxybenzene	Soil	7.9 mg/kg	-	
	Fresh water	0.114 µg/l	Assessment Factors	

	Marine water	0.0114 µg/l	Assessment Factors
	Intermittent releases.	1.34 µg/l	Assessment Factors
	Sewage Treatment Plant	0.71 mg/l	Assessment Factors
	Fresh water sediment	0.98 µg/kg	Equilibrium Partitioning
		dwt	
	Marine water sediment	0.097 µg/kg	Equilibrium Partitioning
		dwt	
	Soil	0.129 µg/kg	Equilibrium Partitioning
		dwt	

## 8.2 Exposure controls

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** :  Safety glasses with side shields.

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 4 - 8 hours (breakthrough time): fluor rubber (Viton) (0.70 mm)  
< 1 hour (breakthrough time): Chloroprene, Nitril rubber (0.2 mm)

**Skin and body** : Chemical-resistant protective suit.

**Respiratory protection** :  Wear filter mask, filtertype A.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Remarks** : Replace damaged gloves.

**Advice on personal protection is applicable for high exposure levels. Select proper personal protection based on a risk assessment of the actual exposure situation.**

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<b>Physical state</b>	: Liquid. [Hazy liquid.]
<b>Colour</b>	: Pink.
<b>Odour</b>	: Characteristic.
<b>Odour threshold</b>	: 0.15 to 25 ppm
<b>pH</b>	: Not available.
<b>Melting point/freezing point</b>	: Not available.
<b>Initial boiling point and boiling range</b>	: >145 °C
<b>Softening range</b>	: Not available.
<b>Flash point</b>	: 33 °C (estimate) Closed cup ISO 1523
<b>Evaporation rate</b>	: 12.4 (compared with butyl acetate)
<b>Flammability (solid, gas)</b>	: Combustible when exposed to heat or flame.
<b>Upper/lower flammability or explosive limits</b>	: Lower: 1.1% Upper: 6.1%
<b>Vapour pressure</b>	: 0.67 kPa
<b>Vapour density</b>	: 3.6 (Air = 1)
<b>Relative density</b>	: 1 to 1.2 (Water = 1)
<b>Density ( g/cm<sup>3</sup> )</b>	: 1 to 1.2 g/cm <sup>3</sup> (23°C)
<b>Bulk density</b>	: Not available.
<b>Solubility</b>	: Insoluble in the following materials: cold water and hot water.
<b>Solubility in water</b>	: Not available.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: 490 °C
<b>Decomposition temperature</b>	: Not available.

<b>Viscosity</b>	: Dynamic (room temperature): 450 to 520 mPa·s (450 to 520 cP) Kinematic (room temperature): >3.75 cm <sup>2</sup> /s (>375 cSt) Kinematic (40°C): >0.205 cm <sup>2</sup> /s (>20.5 cSt)
<b>Explosive properties</b>	: None.
<b>Oxidising properties</b>	: None.

## 9.2 Other information

### SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: The product is stable. Stable under recommended storage and handling conditions (see Section 7).
<b>10.3 Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
<b>10.5 Incompatible materials</b>	: Reactive or incompatible with the following materials: oxidizing materials
<b>10.6 Hazardous decomposition products</b>	: No specific data.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Styrene	LC50 Inhalation Vapour	Rat	10 to 20 mg/l	4 hours
cobalt bis(2-ethylhexanoate) 1,4-dihydroxybenzene	LD50 Oral	Rat	>5000 mg/kg	-
	LDLo Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Female	3129 mg/kg	-
	LD50 Dermal	Mammal	5970 mg/kg	-
	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat	302 mg/kg	-

**Conclusion/Summary** : Not available.

##### Acute toxicity estimates

Route	ATE value
Inhalation (gases) Inhalation (vapours) Inhalation (dusts and mists)	9706.8 ppm 23.73 mg/l 3.236 mg/l

##### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
cobalt bis(2-ethylhexanoate)	Eyes - Irritant	Rabbit	-	-	-

##### Conclusion/Summary

**Eyes** : Not available.

**Skin** : Not available.

**Respiratory** : Not available.

##### Sensitisation

Product/ingredient name	Route of exposure	Species	Result
1,4-dihydroxybenzene	skin	Mouse	Sensitising

##### Conclusion/Summary

**Skin** : Not available.

**Respiratory** : Not available.

#### Mutagenicity

Product/ingredient name	Test	Experiment	Result
1,4-dihydroxybenzene	-	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: with and without	Positive
	OECD 483 Mammalian Spermatogonial Chromosome Aberration Test	Experiment: In vivo  Subject: Mammalian-Animal	Positive

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

#### Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
1,4-dihydroxybenzene	Negative - Oral	Rat	-	-

**Conclusion/Summary** : Not available.

#### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Styrene	Category 3	Not applicable.	Respiratory tract irritation

#### Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Styrene	Category 1	Inhalation	ears

#### Aspiration hazard

Product/ingredient name	Result
Styrene	ASPIRATION HAZARD - Category 1

#### Potential acute health effects

**Eye contact** : Causes serious eye irritation.

**Inhalation** : Harmful if inhaled. May cause respiratory irritation.

**Skin contact** : Causes skin irritation.

**Ingestion** : Irritating to mouth, throat and stomach.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

**Potential chronic health effects**

Product/ingredient name	Result	Species	Dose	Exposure
Styrene  1,4-dihydroxybenzene	Chronic NOAEL Oral	Rat - Male, Female	1000 mg/kg	-
	Chronic LOAEL Oral	Rat - Male, Female	2000 mg/kg	-
	Chronic NOAEC Inhalation Vapour	Rat - Male, Female	0.21 mg/l	104 weeks
	Sub-acute LOAEC Inhalation Vapour	Rat - Male	500 ppm	6 hours
	Sub-acute NOAEC Inhalation Vapour	Rat - Male	150 ppm	6 hours
	Chronic NOAEL Oral	Rat - Male, Female	25 mg/kg	-
	Sub-chronic NOAEL Dermal	Rat - Male, Female	73.9 mg/kg	-

**Conclusion/Summary** : Not available.

**General** : Causes damage to organs through prolonged or repeated exposure.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : Suspected of damaging the unborn child.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Classification**

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Styrene	A4	2B	-	-	Reasonably anticipated to be a human carcinogen.	-
Silicon dioxide (amorphous)	-	3	-	-	-	-
Cobalt bis(2-ethylhexanoate)	-	2B	-	-	-	-
1,4-dihydroxybenzene	A3	3	-	-	-	-

**SECTION 12: Ecological information****12.1 Toxicity**

Product/ingredient name	Result	Species	Exposure	Effects
Styrene  cobalt bis(2-ethylhexanoate)	Acute EC50 4.9 mg/l Fresh water	Algae	72 hours	-
	Acute EC50 4.7 mg/l Fresh water	Daphnia	48 hours	-
	Acute LC50 10 mg/l Fresh water	Fish	96 hours	-
	Chronic NOEC 1.01 mg/l Fresh water	Daphnia	21 days	-
	EC50 0.144 mg/l Fresh water	Algae	72 hours	(growth rate)
	EC50 71.314 mg/l Marine water	Algae	96 hours	(growth rate)
	EC <sub>10</sub> 11.961 mg/l Marine water	Algae	96 hours	(growth rate)
	NOEC 4.6718 mg/l Marine water	Algae	96 hours	(growth rate)
	NOEC 0.0201 mg/l Fresh water	Daphnia	7 days	Reproduction
	NOEC 0.0864 mg/l Fresh water	Daphnia	7 days	Mortality
	Chronic EC <sub>10</sub> 0.023 mg/l Fresh water	Algae	72 hours	(growth rate)
	Chronic EC <sub>10</sub> 0.0197 mg/l Fresh water	Daphnia	7 days	Reproduction
	Chronic EC <sub>10</sub> 2.03 mg/l Fresh water	Fish	33 days	-
	Chronic EC <sub>10</sub> 5.8 mg/l Fresh water	Fish	33 days	-
	Chronic EC <sub>10</sub> 1.09 mg/l Fresh water	Fish	33 days	-
	Chronic NOEC 0.0322 mg/l Fresh water	Algae	72 hours	(growth rate)
	Chronic NOEC 1.02 mg/l Fresh water	Fish	33 days	-

1,4-dihydroxybenzene	Chronic NOEC 2.14 mg/l Fresh water	Fish	33 days	-
	Acute EC50 0.33 mg/l Fresh water	Algae - Pseudokirshnerella subcapitata	72 hours	(growth rate)
	Acute EC50 130 µg/l Fresh water	Daphnia - Daphnia magna - LARVAE	48 hours	Intoxication
	Acute LC50 44 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours	Mortality
	Acute NOEC 0.019 mg/l Fresh water	Algae - Pseudokirshnerella subcapitata	72 hours	-
	Chronic NOEC 0.0057 mg/l Fresh water	Daphnia	21 days	Reproduction

**Conclusion/Summary** : Not available.

## 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Styrene	-	73.2 % - 28 days	-	-

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Styrene	-	-	Readily
cobalt bis(2-ethylhexanoate)	-	-	Readily
1,4-dihydroxybenzene	-	-	Readily

## 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Styrene	3	13.49	low
cobalt bis(2-ethylhexanoate)	-	156	low
1,4-dihydroxybenzene	0.59	40	low

## 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

## 12.5 Results of PBT and vPvB assessment

**PBT** : Not applicable.

**vPvB** : Not applicable.

**12.6 Other adverse effects** : No known significant effects or critical hazards.

# SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

## 13.1 Waste treatment methods

### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN1866	UN1866	UN1866	UN1866
14.2 UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION	Resin solution
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	No.	Yes.	No.	No.
Additional information	<p><b>Hazard identification number</b> 30</p> <p><b>Limited quantity</b> 5 L</p> <p><b>Special provisions</b> 640E</p> <p><b>Viscous substance exemption</b> This class 3 material can be considered non hazardous in packagings up to 450 L. Exempted according to 2.2.3.1.5 (Viscous substance exemption)</p> <p><b>Tunnel code</b> (D/E)</p>	<p>The product is only regulated as an environmentally hazardous substance when transported in tank vessels.</p> <p><b>Special provisions</b> 640E</p>	<p><b>Emergency schedules (EmS)</b> F-E, _S-E_</p> <p><b>Special provisions</b> 223, 955</p> <p><b>Viscous substance exemption</b> This class 3 material can be considered non hazardous in packagings up to 30 L. Exempted according to 2.3.2.5 (Viscous substance exemption)</p>	<p><b>Passenger and Cargo Aircraft</b> Quantity limitation: 60 L Packaging instructions: 355</p> <p><b>Cargo Aircraft Only</b> Quantity limitation: 220 L Packaging instructions: 366</p> <p><b>Limited Quantities - Passenger Aircraft</b> Quantity limitation: 10 L Packaging instructions: Y344</p> <p><b>Special provisions</b> A3</p>

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

**Annex XIV**

None of the components are listed.

**Substances of very high concern**

None of the components are listed.

#### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

#### Other EU regulations

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Styrene	=	=	<u>Repr. 2, H361d (Unborn child)</u>	=
cobalt bis(2-ethylhexanoate)	=	=	=	<u>Repr. 2, H361f (Fertility)</u>
1,4-dihydroxybenzene	<u>Carc. 2, H351</u>	<u>Muta. 2, H341</u>	=	=

#### National regulations

Product/ingredient name	List name	Name on list	Classification	Notes
cobalt bis(2-ethylhexanoate)	UK Occupational Exposure Limits EH40 - WEL	cobalt compounds	Carc.	-

#### International regulations

##### Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

##### Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

##### Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

##### Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

##### UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

**15.2 Chemical Safety Assessment** : No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

#### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d (Unborn child) STOT SE 3, H335 (Respiratory tract irritation) STOT RE 1, H372 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements		
	Flam. 226	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 (inhalation)	Harmful if inhaled.
	H335 (Respiratory tract irritation)	May cause respiratory irritation. (Respiratory tract irritation)

	H341	Suspected of causing genetic defects.
	H351	Suspected of causing cancer.
	H361d (Unborn child)	Suspected of damaging the unborn child.
	H361f (Fertility)	Suspected of damaging fertility.
	H372	Causes damage to organs through prolonged or repeated exposure.
	H372 (ears) (inhalation)	Causes damage to organs through prolonged or repeated exposure if inhaled. (ears)
	H400	Very toxic to aquatic life.
	H410	Very toxic to aquatic life with long lasting effects.
	H412	Harmful to aquatic life with long lasting effects.
<b>Full text of classifications [CLP/GHS]</b>	<input checked="" type="checkbox"/> Acute Tox. 4, H302 <input checked="" type="checkbox"/> Acute Tox. 4, H332 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Aquatic Chronic 3, H412 Asp. Tox. 1, H304 Carc. 2, H351 Eye Dam. 1, H318 Eye Irrit. 2, H319 Flam. Liq. 3, H226 Muta. 2, H341 Repr. 2, H361d (Unborn child) Repr. 2, H361f (Fertility) Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT RE 1, H372  STOT RE 1, H372 (ears) (inhalation) STOT SE 3, H335 (Respiratory tract irritation)	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 ACUTE AQUATIC HAZARD - Category 1 LONG-TERM AQUATIC HAZARD - Category 1 LONG-TERM AQUATIC HAZARD - Category 3 ASPIRATION HAZARD - Category 1 CARCINOGENICITY - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 3 GERM CELL MUTAGENICITY - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2  TOXIC TO REPRODUCTION (Fertility) - Category 2 SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (ears) (inhalation) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
<b>Full text of abbreviated R phrases</b>	<input checked="" type="checkbox"/> 10- Flammable. R40- Limited evidence of a carcinogenic effect. R68- Possible risk of irreversible effects. R62- Possible risk of impaired fertility. R20- Harmful by inhalation. R22- Harmful if swallowed. R41- Risk of serious damage to eyes. R36- Irritating to eyes. R36/38- Irritating to eyes and skin. R43- May cause sensitisation by skin contact. R50- Very toxic to aquatic organisms. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
<b>Full text of classifications [DSD/DPD]</b>	<input checked="" type="checkbox"/> Carc. Cat. 3 - Carcinogen category 3 <input checked="" type="checkbox"/> Muta. Cat. 3 - Mutagen category 3 <input checked="" type="checkbox"/> Repr. Cat. 3 - Toxic to reproduction category 3 Xn - Harmful Xi - Irritant N - Dangerous for the environment	
<b>Alterations compared to the previous version</b>	: Alterations compared to the previous version are marked with a little (blue) triangle.	
<b>Abbreviations and acronyms</b>	: <ul style="list-style-type: none"> <li>ATE = Acute Toxicity Estimate</li> <li>CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]</li> <li>DMEL = Derived Minimal Effect Level</li> <li>DNEL = Derived No Effect Level</li> <li>EUH statement = CLP-specific Hazard statement</li> <li>PBT = Persistent, Bioaccumulative and Toxic</li> <li>PNEC = Predicted No Effect Concentration</li> <li>RRN = REACH Registration Number</li> <li>vPvB = Very Persistent and Very Bioaccumulative</li> </ul>	
<b>Sources of key data</b>	: Literature data and/or investigation reports are available through the manufacturer.	
<b>Internal code</b>	: 011942WW23379	
<b>Training advice</b>	: Handling of this substance or preparation is restricted to skilled personnel only.	
<b>Notice to reader</b>		

The information contained in the Safety Data Sheet is based on our data available on the date of publication. The information is intended to aid the user in controlling the handling risks; it is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.

The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the product's intended purpose. In case of any unclarity we advise consulting the supplier or an expert.

**History**

**Date of printing** : 28 January 2015.

**Date of issue** : 28 January 2015

**Version** : 5