

# SAFETY DATA SHEET



CrysticROOF Resin

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

### 1.1 Product identifier

**Product name** : CrysticROOF Resin  
**Product code** : R2012706  
**Product type** : Liquid.

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

Identified uses
Resins.

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

Scott Bader Co Ltd,  
Wollaston.  
Northants  
NN297RL  
United Kingdom  
+44 (0)1933663100

**e-mail address of person responsible for this SDS** : SDS@scottbader.com

### 1.4 Emergency telephone number

**Telephone number**  
**Telephone number (Hours of operation)** : +44 1865 407333 (NCEC) 24h

## 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  
Skin Sens. 1, H317  
Repr. 2, H361d (Unborn child)  
STOT SE 3, H335  
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.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

## SECTION 2: Hazards identification

**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.
- : H317 - May cause an allergic skin reaction.
- : 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.

**Precautionary statements**

**Prevention**

- : P201 - Obtain special instructions before use.
- : P280 - Wear protective gloves. Wear protective clothing. Wear eye/face protection.
- : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- : P273 - Avoid release to the environment.
- : P260 - Do not breathe vapour.

**Response**

- : P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- : P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

**Storage**

- : P405 - Store locked up.

**Disposal**

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

**Hazardous ingredients**

- : styrene
- : phthalic anhydride
- : cobalt bis(2-ethylhexanoate)

**Supplemental label elements**

- : Not applicable.

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

- : Not applicable.

**2.3 Other hazards**

**Other hazards which do not result in classification**

- : None known.

## SECTION 3: Composition/information on ingredients

**Substance/mixture**

: Mixture

Product/ingredient name	Identifiers	%	Classification	
			Regulation (EC) No. 1272/2008 [CLP]	Type

### SECTION 3: Composition/information on ingredients

styrene	REACH #: 01-2119457861-32 EC: 202-851-5 CAS: 100-42-5 Index: 601-026-00-0	≥25 - ≤50	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 STOT RE 1, H372 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
phthalic anhydride	REACH #: 01-2119457017-41 EC: 201-607-5 CAS: 85-44-9 Index: 607-009-00-4	≤0.3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335	[1] [2]
ethanediol	EC: 203-473-3 CAS: 107-21-1 Index: 603-027-00-1	≤0.3	Acute Tox. 4, H302 STOT RE 2, H373 (kidneys) (oral)	[1] [2]
cobalt bis (2-ethylhexanoate)	REACH #: 01-2119524678-29 EC: 205-250-6 CAS: 136-52-7	≤0.3	Eye Irrit. 2, H319 Skin Sens. 1A, H317 Repr. 2, H361f (Fertility) Aquatic Acute 1, H400 (M=1) Aquatic Chronic 3, H412	[1] [2]
(2-methoxymethylethoxy) propanol	REACH #: 01-2119450011-60 EC: 252-104-2 CAS: 34590-94-8	≤0.1	Not classified.	[2]
1-methoxy-2-propanol	REACH #: 01-2119457435-35 EC: 203-539-1 CAS: 107-98-2 Index: 603-064-00-3	≤0.1	Flam. Liq. 3, H226 STOT SE 3, H336	[1] [2]
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≤0.1	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315	[1] [2]
ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≤0.1	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
orthophosphoric acid	EC: 231-633-2 CAS: 7664-38-2	≤0.1	Skin Corr. 1B, H314 Eye Dam. 1, H318 <b>See Section 16 for the full text of the H statements declared above.</b>	[1] [2]

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.

#### Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

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** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. 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. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. 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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

### 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. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

#### 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

## SECTION 4: First aid measures

**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

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : 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. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. 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.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**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.

## 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.

## SECTION 6: Accidental release measures

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

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

- 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). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. 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

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. 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.

### Seveso Directive - Reporting thresholds (in tonnes)

#### Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b	5000	50000

## SECTION 7: Handling and storage

### 7.3 Specific end use(s)

**Recommendations** : Not available.

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

## SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
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.
phthalic anhydride	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitiser.</b> STEL: 12 mg/m <sup>3</sup> 15 minutes. TWA: 4 mg/m <sup>3</sup> 8 hours.
ethanediol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Particulate STEL: 104 mg/m <sup>3</sup> 15 minutes. Form: Vapour TWA: 52 mg/m <sup>3</sup> 8 hours. Form: Vapour STEL: 40 ppm 15 minutes. Form: Vapour TWA: 20 ppm 8 hours. Form: Vapour
cobalt bis(2-ethylhexanoate)	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitiser.</b> TWA: 0.1 mg/m <sup>3</sup> , (as Co) 8 hours.
(2-methoxymethylethoxy)propanol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> TWA: 308 mg/m <sup>3</sup> 8 hours. TWA: 50 ppm 8 hours.
1-methoxy-2-propanol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> STEL: 560 mg/m <sup>3</sup> 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m <sup>3</sup> 8 hours. TWA: 100 ppm 8 hours.
xylene	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> STEL: 441 mg/m <sup>3</sup> 15 minutes. TWA: 50 ppm 8 hours. TWA: 220 mg/m <sup>3</sup> 8 hours. STEL: 100 ppm 15 minutes.
ethylbenzene	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</b> STEL: 552 mg/m <sup>3</sup> 15 minutes. STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 441 mg/m <sup>3</sup> 8 hours.
orthophosphoric acid	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> STEL: 2 mg/m <sup>3</sup> 15 minutes. TWA: 1 mg/m <sup>3</sup> 8 hours.

## SECTION 8: Exposure controls/personal protection

**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 Dermal	406 mg/kg bw/day	Workers	Systemic
	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 Dermal	343 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	10.2 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Long term Oral	2.1 mg/kg bw/day	Consumers	Systemic
phthalic anhydride	DNEL	Long term Oral	5 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Oral	10 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	5 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Dermal	10 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	8.6 mg/m <sup>3</sup>	Consumers	Systemic
xylene	DNEL	Long term Inhalation	32.2 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Short term Inhalation	442 mg/m <sup>3</sup>	Workers	-
	DNEL	Short term Inhalation	289 mg/m <sup>3</sup>	Workers	-
	DNEL	Long term Inhalation	77 mg/m <sup>3</sup>	Workers	-
	DNEL	Long term Inhalation	221 mg/m <sup>3</sup>	Workers	-
	DNEL	Long term Dermal	3182 mg/kg bw/day	Workers	-
	DNEL	Long term Dermal	180 mg/kg bw/day	Workers	-
	DNEL	Short term Inhalation	260 mg/m <sup>3</sup>	Human via the environment	-
	DNEL	Long term Inhalation	65.3 mg/m <sup>3</sup>	Human via the environment	-



## SECTION 8: Exposure controls/personal protection

	DNEL	Dermal	1872 mg/ kg bw/day	Human via the environment	-
	DNEL	Long term Oral	12.5 mg/ kg bw/day	Human via the environment	-

### PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
styrene	Fresh water	0.028 mg/l	-
	Marine water	0.0028 mg/l	-
	Fresh water sediment	0.614 mg/kg dwt	-
	Marine water sediment	0.0614 mg/kg dwt	-
	Soil	0.2 mg/kg dwt	-
	Sewage Treatment Plant	5 mg/l	-
phthalic anhydride	Soil	0.153 mg/kg	-
	Sewage Treatment Plant	10 mg/l	-
	Fresh water sediment	0.826 mg/kg	-
	Marine water sediment	0.38 mg/kg dwt	Equilibrium Partitioning
	Marine water	0.1 mg/l	-
	Fresh water	1 mg/l	-
xylene	Marine water sediment	0.0826 mg/kg	-
	Fresh water	0.327 mg/l	-
	Marine water	0.327 mg/l	-
	Fresh water sediment	12.46 mg/kg	-
	Marine water sediment	12.46 mg/kg	-
	Soil	2.31 mg/kg	-
	Sewage Treatment Plant	6.58 mg/l	-
	Plant		

## 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

#### 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

## SECTION 8: Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : Liquid.
- Colour** : Translucent.
- Odour** : Solvent
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : Not available.
- Flash point** : Closed cup: 32°C
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Upper/lower flammability or explosive limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 1.1 to 1.2
- Solubility(ies)** : Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/ water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C): >0.4 cm<sup>2</sup>/s
- Explosive properties** : Not available.
- Oxidising properties** : Not available.

### 9.2 Other information

- Heat of combustion** : Not available.

CrysticROOF Resin

## SECTION 9: Physical and chemical properties

**Enclosed space ignition - Time equivalent** : Not applicable.

No additional information.

## SECTION 10: Stability and reactivity

**10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**10.2 Chemical stability** : The product is stable.

**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**10.4 Conditions to avoid** : 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.

**10.5 Incompatible materials** : Reactive or incompatible with the following materials:  
oxidizing materials

**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
styrene	LC50 Inhalation Gas.	Rat	2770 ppm	4 hours
	LC50 Inhalation Vapour	Rat	11800 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
phthalic anhydride	LD50 Oral	Rat	2650 mg/kg	-
	LD50 Dermal	Rabbit	>3160 mg/kg	-
ethanediol	LD50 Oral	Rat	1530 mg/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
cobalt bis(2-ethylhexanoate)	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
1-methoxy-2-propanol	LD50 Dermal	Rabbit	13 g/kg	-
	LD50 Oral	Rat	6600 mg/kg	-
xylene	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
ethylbenzene	LD50 Oral	Rat	3500 mg/kg	-
	LD50 Dermal	Rabbit	2740 mg/kg	-

**Conclusion/Summary** : Not available.

#### Acute toxicity estimates

Route	ATE value
Inhalation (gases)	6728.2 ppm
Inhalation (vapours)	28.66 mg/l

#### Irritation/Corrosion

## SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
styrene	Eyes - Mild irritant	Human	-	50 parts per million	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
ethanediol	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	1 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 milligrams	-
1-methoxy-2-propanol	Skin - Mild irritant	Rabbit	-	555 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
xylene	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-

**Conclusion/Summary** : Not available.

### Sensitisation

Product/ingredient name	Route of exposure	Species	Result
phthalic anhydride	skin	Guinea pig	Sensitising

**Conclusion/Summary** : Not available.

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
phthalic anhydride	OECD 479 Genetic Toxicology: In vitro Sister Chromatid Exchange Assay in Mammalian Cells	Subject: Mammalian-Animal	Negative

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

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## SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
styrene	Category 3	Not applicable.	Respiratory tract irritation
phthalic anhydride	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	Not determined	hearing organs

### Aspiration hazard

Product/ingredient name	Result
styrene	ASPIRATION HAZARD - Category 1

**Information on likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

### 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

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.

## SECTION 11: Toxicological information

**Potential delayed effects** : Not available.

### Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
styrene	Chronic NOAEL Dermal Chronic NOAEL Inhalation Gas.	Rat Rat	615 mg/kg 20 ppm	- 8 hours
phthalic anhydride	Chronic NOAEL Oral	Rat	500 mg/kg	-

**Conclusion/Summary** : Not available.

**General** : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**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.

**Other information** : Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
styrene	Acute EC50 1400 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 33 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 4700 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 52 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 4020 µg/l Fresh water	Fish - Pimephales promelas	96 hours
phthalic anhydride	Chronic NOEC 1.01 mg/l	Daphnia	21 days
	NOEC 16 mg/l	Daphnia	21 days
	Acute EC50 >640 mg/l Fresh water	Daphnia	48 hours
	Acute EC50 >1000 mg/l	Micro-organism	3 hours
	Acute NOEC 32 mg/l	Algae	72 hours
	Acute NOEC >100 mg/l	Algae	72 hours
ethanediol	Acute LC50 6900000 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 41000000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
xylene	Acute LC50 8050000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
ethylbenzene	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 4.6 mg/l	Algae	72 hours
	Acute EC50 2.96 to 4.4 mg/l	Daphnia	48 hours
	Acute LC50 4.2 mg/l	Fish	96 hours
orthophosphoric acid	Acute EC50 105 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 138 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours

**Conclusion/Summary** : Not available.

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
phthalic anhydride	-	85.2 % - 28 days	-	-

**Conclusion/Summary** : Not available.

## SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
styrene	-	-	Readily
phthalic anhydride	-	-	Readily
cobalt bis(2-ethylhexanoate)	-	-	Not readily
xylene	-	-	Readily
ethylbenzene	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
styrene	0.35	13.49	low
phthalic anhydride	1.6	3.4	low
ethanediol	-1.36	-	low
cobalt bis(2-ethylhexanoate)	-	15600	high
(2-methoxymethylethoxy) propanol	0.004	-	low
1-methoxy-2-propanol	<1	-	low
xylene	3.12	8.1 to 25.9	low
ethylbenzene	3.6	-	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.

**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. Vapour 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.

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## SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN1866	UN1866	UN1866
14.2 UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION	Resin solution
14.3 Transport hazard class(es)	3 	3 	3 
14.4 Packing group	III	III	III
14.5 Environmental hazards	No.	No.	No.
Additional information	<b>Hazard identification number</b> 30 <b>Limited quantity</b> 5 L <b>Special provisions</b> 640E <b>Tunnel code</b> (D/E)	<b>Emergency schedules</b> F-E, _S-E_ <b>Special provisions</b> 223, 955	<b>Quantity limitation</b> Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355. Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344. <b>Special provisions</b> A3

**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 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.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Other EU regulations**



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## SECTION 15: Regulatory information

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
styrene	-	-	Repr. 2, H361d (Unborn child)	-
cobalt bis(2-ethylhexanoate)	-	-	-	Repr. 2, H361f (Fertility)

### Seveso Directive

This product is controlled under the Seveso Directive.

### Danger criteria

#### Category

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b

### 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

Listed on inventory. : Not determined

### 15.2 Chemical safety assessment

: This product contains substances for which Chemical Safety Assessments are still required.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DMEL = Derived Minimal Effect Level  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PBT = Persistent, Bioaccumulative and Toxic  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number  
 vPvB = Very Persistent and Very Bioaccumulative

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

Classification	Justification
Flam. Liq. 3, H226	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 2, H361d (Unborn child)	Calculation method
STOT SE 3, H335	Calculation method
STOT RE 1, H372	Calculation method
Aquatic Chronic 3, H412	Calculation method

**Full text of abbreviated H statements** : H225 Highly flammable liquid and vapour.  
 H226 Flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H312 Harmful in contact with skin.  
 H314 Causes severe skin burns and eye damage.  
 H315 Causes skin irritation.

**SECTION 16: Other information**

- 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.
- H361f Suspected of damaging fertility.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure if (oral) swallowed.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS]**

- : Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
- Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4
- Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
- Aquatic Acute 1, H400 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
- Aquatic Chronic 3, H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
- Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1
- Eye Dam. 1, H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
- Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
- Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2
- Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3
- Repr. 2, H361d REPRODUCTIVE TOXICITY (Unborn child) - Category 2
- Repr. 2, H361f REPRODUCTIVE TOXICITY (Fertility) - Category 2
- Resp. Sens. 1, H334 RESPIRATORY SENSITISATION - Category 1
- Skin Corr. 1B, H314 SKIN CORROSION/IRRITATION - Category 1B
- Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
- Skin Sens. 1, H317 SKIN SENSITISATION - Category 1
- Skin Sens. 1A, H317 SKIN SENSITISATION - Category 1A
- STOT RE 1, H372 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
- STOT RE 2, H373 (oral) SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (oral) - Category 2
- STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
- STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
- STOT SE 3, H336 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3

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