

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830 - United Kingdom (UK)

# SAFETY DATA SHEET



Crystic 471PALV

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

### 1.1 Product identifier

**Product name** : Crystic 471PALV  
**Product code** : R2012300  
**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

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**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 |
|                         |             |   |                                     |      |

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

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

|                                     |  |              |   |         |
|-------------------------------------|--|--------------|---|---------|
| styrene                             | REACH #:<br>01-2119457861-32<br>EC: 202-851-5<br>CAS: 100-42-5<br>Index: 601-026-00-0  | ≥25 -<br>≤50 | Flam. Liq. 3, H226<br>Acute Tox. 4, H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Repr. 2, H361d (Unborn child)<br>STOT SE 3, H335<br>STOT RE 1, H372 (hearing organs)<br>Asp. Tox. 1, H304<br>Aquatic Chronic 3, H412                   | [1] [2] |
| phthalic anhydride                  | REACH #:<br>01-2119457017-41<br>EC: 201-607-5<br>CAS: 85-44-9<br>Index: 607-009-00-4   | ≤0.3         | Acute Tox. 4, H302<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317<br>STOT SE 3, H335   | [1] [2] |
| cobalt bis<br>(2-ethylhexanoate)    | REACH #:<br>01-2119524678-29<br>EC: 205-250-6<br>CAS: 136-52-7                         | ≤0.3         | Eye Irrit. 2, H319<br>Skin Sens. 1A, H317<br>Repr. 2, H361f (Fertility)<br>Aquatic Acute 1, H400 (M=1)<br>Aquatic Chronic 3, H412   | [1] [2] |
| (2-methoxymethylethoxy)<br>propanol | REACH #:<br>01-2119450011-60<br>EC: 252-104-2<br>CAS: 34590-94-8                       | ≤0.1         | Not classified.   | [2]     |
| 1,4-dihydroxybenzene                | REACH #:<br>1-2119524016-51-0<br>EC: 204-617-8<br>CAS: 123-31-9<br>Index: 604-005-00-4 | <0.1         | Acute Tox. 4, H302<br>Eye Dam. 1, H318<br>Skin Sens. 1B, H317<br>Muta. 2, H341<br>Carc. 2, H351<br>Aquatic Acute 1, H400 (M=10)<br>Aquatic Chronic 1, H410 (M=1)<br><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.

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 4: First aid measures**

- 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
- 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.

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

## 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.

### 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.

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 6: Accidental release measures**

**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 spill 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                   |

**7.3 Specific end use(s)**

**Recommendations** : Not available.

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

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**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><br>STEL: 250 ppm 15 minutes.<br>TWA: 100 ppm 8 hours.<br>TWA: 430 mg/m <sup>3</sup> 8 hours.<br>STEL: 1080 mg/m <sup>3</sup> 15 minutes. |
| phthalic anhydride              | <b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitiser.</b><br>STEL: 12 mg/m <sup>3</sup> 15 minutes.<br>TWA: 4 mg/m <sup>3</sup> 8 hours.                                    |
| cobalt bis(2-ethylhexanoate)    | <b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitiser.</b><br>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><br>TWA: 308 mg/m <sup>3</sup> 8 hours.<br>TWA: 50 ppm 8 hours.  |
| 1,4-dihydroxybenzene            | <b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b><br>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 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 |



**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 8: Exposure controls/personal protection**

|                      |      |                      |                        |                           |          |
|----------------------|------|----------------------|------------------------|---------------------------|----------|
| 1,4-dihydroxybenzene | 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 |
|                      | DNEL | Long term Inhalation | 32.2 mg/m <sup>3</sup> | Workers                   | Systemic |
|                      | DNEL | Long term Dermal     | 128 mg/kg bw/day       | Workers                   | Systemic |
|                      | 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     | 64 mg/kg bw/day        | Human via the environment | Systemic |
|                      | DNEL | Long term Inhalation | 1.74 mg/m <sup>3</sup> | Human via the environment | Systemic |
|                      | DNEL | Long term Inhalation | 0.5 mg/m <sup>3</sup>  | Human via the environment | Local    |

**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 |
| 1,4-dihydroxybenzene    | Marine water           | 0.1 mg/l         | -                        |
|                         | Fresh water            | 1 mg/l           | -                        |
|                         | Marine water sediment  | 0.0826 mg/kg     | -                        |
|                         | Fresh water            | 0.114 µg/l       | -                        |
|                         | Marine water           | 0.0114 µg/l      | -                        |
|                         | Fresh water sediment   | 0.00098 mg/kg    | -                        |
|                         | Marine water sediment  | 0.000097 mg/kg   | -                        |
|                         | Soil                   | 0.000129 mg/kg   | -                        |
|                         | Sewage Treatment Plant | 0.71 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.



**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 8: Exposure controls/personal protection**

- Eyeface 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.
- 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

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 9: Physical and chemical properties**

- 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.
- 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             | -        |
| cobalt bis(2-ethylhexanoate) | LD50 Oral              | Rat     | 1530 mg/kg              | -        |
|                              | LD50 Dermal            | Rabbit  | >5 g/kg                 | -        |
| 1,4-dihydroxybenzene         | LD50 Oral              | Rat     | >2000 mg/kg             | -        |
|                              | LD50 Oral              | Rat     | >375 mg/kg              | -        |

**Conclusion/Summary** : Not available.

Acute toxicity estimates

| Route                | ATE value  |
|----------------------|------------|
| Inhalation (gases)   | 6931.4 ppm |
| Inhalation (vapours) | 29.53 mg/l |

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 11: Toxicological information**

**Irritation/Corrosion**

| 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          | -           |
|                         | Skin - Moderate irritant | Rabbit  | -     | 100 Percent             | -           |

**Conclusion/Summary** : Not available.

**Sensitisation**

| Product/ingredient name                    | Route of exposure | Species    | Result          |
|--|-------------------|------------|-----------------|
| phthalic anhydride<br>1,4-dihydroxybenzene | skin              | Guinea pig | Sensitising     |
|  | skin              | Mouse      | Sensitising     |
|  | skin              | Guinea pig | Not sensitizing |

**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 |
| 1,4-dihydroxybenzene    | -  | Experiment: In vivo<br>Subject: Mammalian-Animal | Positive |
|                         | -  | Experiment: In vivo<br>Subject: Bacteria         | 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)**

| 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**

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 11: Toxicological information**

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

**Potential chronic health effects**

| Product/ingredient name                    | Result                        | Species | Dose        | Exposure |
|--|-------------------------------|---------|-------------|----------|
| styrene                                    | Chronic NOAEL Dermal          | Rat     | 615 mg/kg   | -        |
|  | Chronic NOAEL Inhalation Gas. | Rat     | 20 ppm      | 8 hours  |
| phthalic anhydride<br>1,4-dihydroxybenzene | Chronic NOAEL Oral            | Rat     | 500 mg/kg   | -        |
|  | Sub-chronic NOAEL Oral        | Rat     | 20 mg/kg    | 90 days  |
|  | Sub-chronic NOAEL Dermal      | Rat     | >73.9 mg/kg | 90 days  |

**Conclusion/Summary** : Not available.

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 11: Toxicological information**

- 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 |
|                         | Chronic NOEC 1.01 mg/l           | Daphnia                                 | 21 days  |
| phthalic anhydride      | 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 |
| 1,4-dihydroxybenzene    | Acute NOEC >100 mg/l             | Algae                                   | 72 hours |
|                         | Acute EC50 0.134 mg/l            | Daphnia                                 | 48 hours |
|                         | Acute LC50 0.638 mg/l            | Fish                                    | 96 hours |
|                         | Chronic EC50 0.33 mg/l           | Aquatic plants                          | 72 hours |
|                         | Chronic NOEC 0.019 mg/l          | Aquatic plants                          | 72 hours |
|                         | Chronic NOEC 0.0057 mg/l         | Daphnia                                 | 21 days  |

**Conclusion/Summary** : Not available.

**12.2 Persistence and degradability**

| Product/ingredient name | Test | Result                   | Dose | Inoculum |
|-------------------------|------|--------------------------|------|----------|
| phthalic anhydride      | -    | 85.2 % - 28 days         | -    | -        |
| 1,4-dihydroxybenzene    | -    | 70 % - Readily - 14 days | -    | -        |

**Conclusion/Summary** : Not available.

| Product/ingredient name      | Aquatic half-life | Photolysis | Biodegradability |
|------------------------------|-------------------|------------|------------------|
| styrene                      | -                 | -          | Readily          |
| phthalic anhydride           | -                 | -          | Readily          |
| cobalt bis(2-ethylhexanoate) | -                 | -          | Not readily      |
| 1,4-dihydroxybenzene         | -                 | -          | 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       |
| cobalt bis(2-ethylhexanoate) | -                  | 15600 | high      |
| (2-methoxymethylethoxy)      | 0.004              | -     | low       |
| propanol                     | -                  | -     | -         |
| 1,4-dihydroxybenzene         | 0.59               | 3.162 | low       |

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 12: Ecological information**

**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.

**SECTION 14: Transport information**

|  | <b>ADR/RID</b>   | <b>IMDG</b>  | <b>IATA</b>  |
|--|--|--|--|
| <b>14.1 UN number</b>                  | UN1866   | UN1866   | UN1866   |
| <b>14.2 UN proper shipping name</b>    | RESIN SOLUTION   | RESIN SOLUTION   | Resin solution   |
| <b>14.3 Transport hazard class(es)</b> | 3<br> | 3<br> | 3<br> |
| <b>14.4 Packing group</b>              | III  | III  | III  |
| <b>14.5 Environmental hazards</b>      | No.  | No.  | No.  |

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 14: Transport information**

|                               |  |  |  |
|-------------------------------|--|--|--|
| <b>Additional information</b> | <b>Hazard identification</b><br>number 30<br><b>Limited quantity</b> 5 L<br><b>Special provisions</b> 640E<br><b>Tunnel code</b> (D/E) | <b>Emergency schedules</b> F-E,<br>_S-E_<br><b>Special provisions</b> 223, 955 | <b>Quantity limitation</b><br>Passenger and Cargo Aircraft:<br>60 L. Packaging instructions:<br>355. Cargo Aircraft Only: 220<br>L. Packaging instructions: 366.<br>Limited Quantities -<br>Passenger Aircraft: 10 L.<br>Packaging instructions: Y344.<br><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** : Not applicable.

**on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles**

**Other EU regulations**

| 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) |
| 1,4-dihydroxybenzene          | Carc. 2, H351        | Muta. 2, H341     | -                             | -                          |

**Seveso Directive**

This product is controlled under the Seveso Directive.

**Danger criteria**

|   |
|---|
| <b>Category</b>   |
| 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.          | -     |



**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 15: Regulatory information**

**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** :

- 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.
- H341 Suspected of causing genetic defects.
- H351 Suspected of causing cancer.
- H361d Suspected of damaging the unborn child.
- H361f Suspected of damaging fertility.
- H372 Causes damage to organs through prolonged or repeated exposure.
- 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.

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

- ✔ Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
- Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
- Aquatic Acute 1, H400 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
- Aquatic Chronic 1, H410 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
- Aquatic Chronic 3, H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
- Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1
- Carc. 2, H351 CARCINOGENICITY - Category 2

**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)**

Crystic 471PALV

**SECTION 16: Other information**

|                     |  |
|---------------------|--|
| Eye Dam. 1, H318    | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1   |
| Eye Irrit. 2, H319  | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2   |
| Flam. Liq. 3, H226  | FLAMMABLE LIQUIDS - Category 3   |
| Muta. 2, H341       | GERM CELL MUTAGENICITY - Category 2  |
| 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 Irrit. 2, H315 | SKIN CORROSION/IRRITATION - Category 2   |
| Skin Sens. 1, H317  | SKIN SENSITISATION - Category 1  |
| Skin Sens. 1A, H317 | SKIN SENSITISATION - Category 1A   |
| Skin Sens. 1B, H317 | SKIN SENSITISATION - Category 1B   |
| STOT RE 1, H372     | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1                              |
| STOT SE 3, H335     | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 |

**Date of printing** : 08/06/2018

**Date of issue/ Date of revision** : 08/06/2018

**Date of previous issue** : 23/08/2017

**Version** : 3.01

**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.