

SAFETY DATA SHEET



Crestomer 1153PA

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

1.1 Product identifier

Product name : Crestomer 1153PA
Product code : OL109000
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

Supplier

Telephone number (Hours of operation) : +44 (0) 1933 663399 (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 RE 1, H372
Aquatic Chronic 3, H412

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

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

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

Classification : R10
Repr. Cat. 3; R63
T; R24
Xn; R20, R48/20
Xi; R36/38
R43

SECTION 2: Hazards identification

- Physical/chemical hazards** : Flammable.
- Human health hazards** : Possible risk of harm to the unborn child. Toxic in contact with skin. Harmful by inhalation. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Irritating to eyes and skin. May cause sensitisation by skin contact.

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

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

2.2 Label elements**Hazard pictograms****Signal word**

: Danger

Hazard statements

: H226 - Flammable liquid and vapour.
 H332 - Harmful if inhaled.
 H319 - Causes serious eye irritation.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H361d - Suspected of damaging the unborn child.
 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 eye or face protection. Wear protective clothing.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
 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 or shower.

Storage

: P235 - Keep cool.

Disposal

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

Hazardous ingredients

: styrene
 2-hydroxyethyl acrylate
 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		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
styrene	REACH #: 01-2119457861-32 EC: 202-851-5 CAS: 100-42-5 Index: 601-026-00-0	≥25 - ≤50	R10 Repr. Cat. 3; R63 Xn; R20, R48/20 Xi; R36/38	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d (Unborn child) STOT RE 1, H372 (hearing organs) Not classified.	[1] [2]
Silica, amorphous, fumed, cryst.-free	REACH #: 01-2119379499-16 CAS: 112945-52-5	≤10	Not classified.		[2]
2-hydroxyethyl acrylate	EC: 212-454-9 CAS: 818-61-1 Index: 607-072-00-8	≤3	T; R24 C; R34 R43 N; R50	Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Corr. 1B, H314 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411	[1]
N,N-dimethylaniline	EC: 204-493-5 CAS: 121-69-7 Index: 612-016-00-0	≤0.25	Carc. Cat. 3; R40 T; R23/24/25 N; R51/53	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Carc. 2, H351 Aquatic Chronic 2, H411	[1] [2]
cobalt bis (2-ethylhexanoate)	REACH #: 01-2119524678-29 EC: 205-250-6 CAS: 136-52-7	≤0.3	Repr. Cat. 3; R62 Xi; R36 R43 N; R50/53	Eye Irrit. 2, H319 Skin Sens. 1, H317 Repr. 2, H361f (Fertility) Aquatic Acute 1, H400 (M=1) Aquatic Chronic 3, H412	[1] [2]
1,4-dihydroxybenzene	REACH #: 1-2119524016-51-0 EC: 204-617-8 CAS: 123-31-9 Index: 604-005-00-4	<0.1	Carc. Cat. 3; R40 Muta. Cat. 3; R68 Xn; R22 Xi; R41 R43 N; R50/53	Acute Tox. 4, H302 Eye Dam. 1, H318 Skin Sens. 1, H317 Muta. 2, H341 Carc. 2, H351 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1)	[1] [2]
1,4-naphthoquinone	EC: 204-977-6 CAS: 130-15-4	<0.1	T+; R26 T; R24/25 C; R34 Xi; R37 R43 N; R50	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 1, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]
			See Section 16 for the full text of the R-phrases declared above.	See Section 16 for the full text of the H statements declared above.	

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

SECTION 3: Composition/information on ingredients

- [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

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.
- 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:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

SECTION 4: First aid measures

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

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO₂, 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. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

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".

SECTION 6: Accidental release measures

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.

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**

SECTION 7: Handling and storage

Category	Notification and MAPP threshold	Safety report threshold
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b	5000	50000
C2: Toxic	50	200
C6: Flammable (R10)	5000	50000

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	EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 250 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 430 mg/m ³ 8 hours. STEL: 1080 mg/m ³ 15 minutes.
Silica, amorphous, fumed, cryst.-free	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 6 mg/m ³ 8 hours. Form: inhalable dust TWA: 2.4 mg/m ³ 8 hours. Form: respirable dust
N,N-dimethylaniline	EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 50 mg/m ³ 15 minutes. STEL: 10 ppm 15 minutes. TWA: 5 ppm 8 hours. TWA: 25 mg/m ³ 8 hours.
cobalt bis(2-ethylhexanoate)	EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitiser. TWA: 0.1 mg/m ³ , (as Co) 8 hours.
1,4-dihydroxybenzene	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 0.5 mg/m ³ 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 ³	Workers	Systemic
	DNEL	Short term Inhalation	306 mg/m ³	Workers	Local
	DNEL	Long term Dermal	406 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	85 mg/m ³	Workers	Systemic

SECTION 8: Exposure controls/personal protection

1,4-dihydroxybenzene	DNEL	Short term Inhalation	174.25 mg/m ³	Consumers	Systemic
	DNEL	Short term Inhalation	182.75 mg/m ³	Consumers	Local
	DNEL	Long term Dermal	343 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	10.2 mg/m ³	Consumers	Systemic
	DNEL	Long term Oral	2.1 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Dermal	128 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	7 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m ³	Workers	Local
	DNEL	Long term Dermal	64 mg/kg bw/day	Human via the environment	Systemic
	DNEL	Long term Inhalation	1.74 mg/m ³	Human via the environment	Systemic
	DNEL	Long term Inhalation	0.5 mg/m ³	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	-
	1,4-dihydroxybenzene	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	-

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

SECTION 8: Exposure controls/personal 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 to 1.1
- 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 cm²/s
- Explosive properties** : Not available.

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SECTION 9: Physical and chemical properties

Oxidising properties : Not available.

VOC content (% by weight) : Not available.

9.2 Other information

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 ³	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
2-hydroxyethyl acrylate	LD50 Oral	Rat	2650 mg/kg	-
	LD50 Dermal	Rabbit	298 mg/kg	-
	LD50 Oral	Rat	548 mg/kg	-
N,N-dimethylaniline	LC50 Inhalation Vapour	Rat	>5.1 mg/l	4 hours
	LD50 Dermal	Rabbit	1700 mg/kg	-
	LD50 Oral	Rat	1120 mg/kg	-
cobalt bis(2-ethylhexanoate)	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>375 mg/kg	-
1,4-dihydroxybenzene	LD50 Oral	Rat	>375 mg/kg	-
	LC50 Inhalation Vapour	Rat	0.046 mg/l	4 hours
	LD50 Dermal	Rat	202 mg/kg	-
1,4-naphthoquinone	LD50 Oral	Rat	190 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

Route	ATE value
Oral	14656.8 mg/kg
Dermal	10486.4 mg/kg
Inhalation (gases)	6267.3 ppm
Inhalation (vapours)	26.23 mg/l

Irritation/Corrosion

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
styrene 2-hydroxyethyl acrylate	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	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	1 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
Skin - Moderate irritant	Rabbit	-	500 milligrams	-	

Conclusion/Summary : Not available.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
1,4-dihydroxybenzene	skin skin	Mouse Guinea pig	Sensitising Not sensitizing

Conclusion/Summary : Not available.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
1,4-dihydroxybenzene	-	Experiment: In vivo Subject: Mammalian-Animal	Positive
	-	Experiment: In vivo 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
1,4-naphthoquinone	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

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

SECTION 11: Toxicological information

- Inhalation** : Harmful if inhaled.
- 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:
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
1,4-dihydroxybenzene	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.
- 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 52000 µg/l Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
2-hydroxyethyl acrylate	Acute LC50 4020 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 1.01 mg/l	Daphnia	21 days
	Acute LC50 4800 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
N,N-dimethylaniline	Acute EC50 5 mg/l	Daphnia - Daphnia magna	48 hours
	Acute IC50 340 mg/l	Algae - Desmodesmus subspicatus	96 hours
1,4-dihydroxybenzene	Acute LC50 65.6 mg/l	Fish - Pimephales promelas	96 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
1,4-naphthoquinone	Acute IC50 0.011 mg/l	Algae	72 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
1,4-dihydroxybenzene	-	70 % - Readily - 14 days	-	-
1,4-naphthoquinone	-	35 % - 5 days	-	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
styrene	-	-	Readily
cobalt bis(2-ethylhexanoate)	-	-	Not readily
1,4-dihydroxybenzene	-	-	Readily
1,4-naphthoquinone	-	-	Inherent

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
styrene	0.35	13.49	low
2-hydroxyethyl acrylate	-0.17	-	low
N,N-dimethylaniline	2.31	16	low
cobalt bis(2-ethylhexanoate)	-	15600	high
1,4-dihydroxybenzene	0.59	3.162	low
1,4-naphthoquinone	1.71	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : 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

	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	<p>Hazard identification number 30</p> <p>Limited quantity 5 L</p> <p>Special provisions 640E</p> <p>Tunnel code (D/E)</p>	<p>Emergency schedules (EmS) F-E, _S-E_</p> <p>Special provisions 223, 955</p>	<p>Passenger and Cargo AircraftQuantity limitation: 60 L Packaging instructions: 355</p> <p>Cargo Aircraft OnlyQuantity limitation: 220 L Packaging instructions: 366</p> <p>Limited Quantities - Passenger AircraftQuantity limitation: 10 L Packaging instructions: Y344</p> <p>Special provisions A3</p>

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

SECTION 14: Transport information

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

Priority List Chemicals (793/93/EEC) : Not determined

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
styrene	-	-	Repr. 2, H361d (Unborn child)	-
N,N-dimethylaniline	Carc. 2, H351	-	-	-
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

Category
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b C2: Toxic C6: Flammable (R10)

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. : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Turkey 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 RE 1, H372	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

- : H226 Flammable liquid and vapour.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H331 Toxic if inhaled.
- H332 Harmful 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.
(Unborn child)
- H361f Suspected of damaging fertility.
(Fertility)
- H372 Causes damage to organs through prolonged or repeated exposure.
(hearing organs)
- 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.
- H411 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. 1, H330 ACUTE TOXICITY (inhalation) - Category 1
- Acute Tox. 3, H301 ACUTE TOXICITY (oral) - Category 3
- Acute Tox. 3, H311 ACUTE TOXICITY (dermal) - Category 3
- Acute Tox. 3, H331 ACUTE TOXICITY (inhalation) - Category 3
- Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
- Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
- Aquatic Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1
- Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1
- Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2
- Aquatic Chronic 3, H412 LONG-TERM AQUATIC HAZARD - Category 3
- Carc. 2, H351 CARCINOGENICITY - Category 2
- 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

SECTION 16: Other information

Repr. 2, H361d (Unborn child)	TOXIC TO REPRODUCTION (Unborn child) - Category 2
Repr. 2, H361f (Fertility)	TOXIC TO REPRODUCTION (Fertility) - Category 2
Skin Corr. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1
STOT RE 1, H372 (hearing organs)	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 1
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

Full text of abbreviated R phrases

: R10- Flammable.
R40- Limited evidence of a carcinogenic effect.
R68- Possible risk of irreversible effects.
R62- Possible risk of impaired fertility.
R63- Possible risk of harm to the unborn child.
R26- Very toxic by inhalation.
R24- Toxic in contact with skin.
R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
R24/25- Toxic in contact with skin and if swallowed.
R20- Harmful by inhalation.
R22- Harmful if swallowed.
R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R34- Causes burns.
R41- Risk of serious damage to eyes.
R36- Irritating to eyes.
R37- Irritating to respiratory system.
R36/38- Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
R50- Very toxic to aquatic organisms.
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD]

: Carc. Cat. 3 - Carcinogen category 3
Muta. Cat. 3 - Mutagen category 3
Repr. Cat. 3 - Toxic to reproduction category 3
T+ - Very toxic
T - Toxic
C - Corrosive
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment

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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.