Safety Data Sheet

Revision Date: 17/Apr/2013

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Description: **POLYLITE® 721-800**

SAP ID(s): 45448 ; 45449; 45450; 132947; 181403; 193944; 200861

Chemical Family Polyester Resin

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

Intended Use Laminating Resin

Sector of Uses [SU]
SU3 - Industrial uses
SU12 - Manufacture of plastics products, including compounding and conversion
SU22 - Professional uses

Product categories [PC] PC32 - Polymer preparations and compounds

Process categories [PROC]
PROC3 - Use in closed batch process (synthesis or formulation)
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
PROC7 - Industrial spraying
PROC8a - Transfer of substance or mixture (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC 8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC10 - Roller application or brushing
PROC11 - Non industrial spraying
PROC13 - Treatment of articles by dipping and pouring
PROC14 - Production of mixtures or articles by tabletting, compression, extrusion, pelletization
PROC15 - Use as a laboratory reagent

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Manufacturer
Reichhold UK Ltd.
54 Willow Road
Mitcham, Surrey
United Kingdom
CR4 4NA
+44 208 648 4684

E-mail address prodsafety@reichhold.com

1.4. Emergency telephone number

(CareChem24) +44(0)1235 239670

Poison Information Center Telephone Number: United Kingdom - Contact CareChem24

2. Hazards Identification

2.1. - Classification of the substance or mixture

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

Acute toxicity - Inhalation (Vapours) Category 4

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Chronic aquatic toxicity	Category 3
flammable liquid	Category 3

Classification according to Directive 67/548/EEC or 1999/45/EC
R10 - Xn;R48/20 - Xn;R20 - Xi;R36/37/38 - Repr. Cat. 3; R63

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

signal word Danger

Contains Styrene

Hazard Statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H361d - Suspected of damaging the unborn child
H372 - Causes damage to hearing through prolonged or repeated exposure if inhaled
H412 - Harmful to aquatic life with long lasting effects

H226 - Flammable liquid and vapour

56% of the mixture consists of ingredient(s) of unknown toxicity.
56.2% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking
P260 - Do not breathe dust/mist
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

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2.3. Other hazards
No information available.

3. Composition/information on Ingredients

Component	EC No	CAS No	weight-%	Classification	EU - GHS Substance Classification	REACH Reg. No

Styrene	202-851-5	100-42-5	40-44	Repr.Cat3; R63 Xn; R20-48/20 Xn; R65 Xi; R36/37/38 R10	Skin Irrit. 2 (H315) Flam. Liq. 3 (H226) Eye Irrit. 2 (H319) Acute Tox. 4 (H332) STOT SE 3 (H335) STOT RE 1 (H372) Repr. 2 (H361d) Asp. Tox. 1 (H304) Aquatic Chronic 3 (H412)	01-2119457861-32
Alpha-Methyl Styrene	202-705-0	98-83-9	1.0-2.0	R10 Xi; R36/37 N; R51-53	Flam. Liq. 3 (H226) STOT SE 3 (H335) Eye Irrit. 2 (H319) Aquatic Chronic 2 (H411)	01-2119513231-58

For the full text of the R phrases mentioned in this Section, see Section 16

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

4. First aid measures

4.1. Description of first aid measures

Eye Contact
Immediately flush eyes for at least 15 minutes. Get medical attention.

Skin Contact
Wash off with warm water and soap. Remove contaminated clothing and shoes. If skin irritation persists, call a doctor. Wash contaminated clothing before re-use.

Ingestion
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Inhalation
In case of unconsciousness bring patient into stable side position for transport. Remove to fresh air. Keep patient warm and at rest. If breathing is laboured, administer oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

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

Irritating to eyes, respiratory system and skin. Harmful by inhalation, in contact with skin and if swallowed.

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

Notes to Physician
Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media
Carbon dioxide (CO2), Foam, Dry chemical, Water spray

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
flammable. Vapours may form explosive mixture with air. Vapours may travel to areas away from work site before igniting/flashing back to vapour source. Combustion may produce carbon monoxide, carbon dioxide, irritating or toxic vapors and gases. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

5.3. Advice for firefighters

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective suit.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Remove all sources of ignition. Evacuate personnel to safe areas. Avoid contact with skin and eyes. Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
All equipment used when handling the product must be grounded.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up
A vapour suppressing foam may be used to reduce vapours. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Use clean non-sparking tools to collect absorbed material.

6.4. Reference to other sections
See Section 12 for more information

7. Handling and Storage

7.1. Precautions for safe handling
Handling
Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Take off contaminated clothing and wash before re-use. Ensure adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed. Do not use compressed air for filling, discharging or handling.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Keep away from heat and sources of ignition. No smoking. Protect from direct sunlight. Store away from incompatible materials. Keep containers tightly closed in a cool, well-ventilated place. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 25°C.

7.3. Specific end use(s)

Exposure scenario	No information available
Other Guidelines	No information available

8. Exposure Controls/Personal Protection

8.1. Control parameters
Exposure Limits
Components with workplace control parameters.

Styrene

Austria	80 ppm STEL
	340 mg/m³ STEL
	20 ppm TWA
	85 mg/m³ TWA

Belgium	40 ppm TWA 173 mg/m³ TWA (skin) 80 ppm STEL 346 mg/m³ STEL
Bulgaria	85.0 mg/m³ TWA 215.0 mg/m³ STEL
Croatia	250 ppm STEL KGVI 1080 mg/m³ STEL KGVI 100 ppm TWA GVI 430 mg/m³ TWA GVI
Czech Republic	400 mg/m³ Ceiling 100 mg/m³ TWA (skin)
Denmark	25 ppm Ceiling 105 mg/m³ Ceiling (skin)
Estonia	20 ppm TWA 90 mg/m³ TWA 50 ppm STEL 200 mg/m³ STEL (skin)
Finland	20 ppm TWA 86 mg/m³ TWA 100 ppm STEL 430 mg/m³ STEL
France	50 ppm TWA 215 mg/m³ TWA 1000 mg/m³ TWA 1500 mg/m³
Germany	20 ppm TWA 86 mg/m³ TWA
Greece	100 ppm TWA 425 mg/m³ TWA 250 ppm STEL 1050 mg/m³ STEL
Hungary	50 mg/m³ TWA AK 50 mg/m³ STEL CK
Ireland	20 ppm TWA 85 mg/m³ TWA 40 ppm STEL 170 mg/m³ STEL
Latvia	10 mg/m³ TWA 30 mg/m³ STEL
Lithuania	20 ppm TWA (IPRD) 90 mg/m³ TWA (IPRD) 10 ppm TWA (IPRD) 50 ppm STEL (TPRD) 200 mg/m³ STEL (TPRD) (skin)
Norway	25 ppm TWA 105 mg/m³ TWA M 37.5 ppm STEL 131.25 mg/m³ STEL
Poland	200 mg/m³ STEL 50 mg/m³ TWA
Portugal OELs Data	20 ppm 40 ppm STEL
Romania	12 ppm TWA 50 mg/m³ TWA 35 ppm STEL 150 mg/m³ STEL

Russia	10 mg/m³ TWA (vapor)
	30 mg/m³ STEL (vapor)
Slovakia	20 ppm TWA
	86 mg/m³ TWA
	200 mg/m³ Ceiling
Slovenia	20 ppm TWA
	86 mg/m³ TWA
	80 ppm STEL
	344 mg/m³ STEL
Spain	20 ppm TWA
	86 mg/m³ TWA
	40 ppm STEL
	172 mg/m³ STEL
Sweden	10 ppm LLV
	43 mg/m³ LLV
	20 ppm STV
	86 mg/m³ STV
	(skin)
Switzerland	40 ppm STEL
	170 mg/m³ STEL
	20 ppm TWA
	85 mg/m³ TWA
United Kingdom	100 ppm TWA
	430 mg/m³ TWA
	250 ppm STEL
	1080 mg/m³ STEL
ACGIH - TLV	20 ppm TWA
	40 ppm STEL

Alpha-Methyl Styrene

European Union	100 ppm Indicative
	492 mg/m³ Indicative
	50 ppm Indicative
	246 mg/m³ Indicative
Austria	100 ppm STEL
	492 mg/m³ STEL
	50 ppm TWA
	246 mg/m³ TWA
Belgium	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL
Bulgaria	240 mg/m³ TWA
	485 mg/m³ STEL
Croatia	100 ppm STEL KGVI
	492 mg/m³ STEL KGVI
	50 ppm TWA GVI
	246 mg/m³ TWA GVI
Cyprus	100 ppm STEL
	492 mg/m³ STEL
	50 ppm TWA
	246 mg/m³ TWA
Czech Republic	500 mg/m³ Ceiling
	250 mg/m³ TWA
Denmark	50 ppm
	246 mg/m³
Estonia	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL

Finland	50 ppm TWA
	250 mg/m³ TWA
	100 ppm STEL
	490 mg/m³ STEL
France	25 ppm TWA
	123 mg/m³ TWA
	100 ppm
	492 mg/m³
Germany	50 ppm TWA
	250 mg/m³ TWA
Greece	100 ppm TWA
	480 mg/m³ TWA
	150 ppm STEL
	720 mg/m³ STEL
Hungary	246 mg/m³ TWA AK
	492 mg/m³ STEL CK
Ireland	50 ppm TWA
	246 mg/m³ TWA
	492 mg/m³ STEL
	100 ppm STEL
Italy	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL
Latvia	5 mg/m³ TWA
	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL
Lithuania	50 ppm TWA (IPRD)
	246 mg/m³ TWA (IPRD)
	100 ppm STEL (TPRD)
	492 mg/m³ STEL (TPRD)
Luxembourg	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL
The Netherlands	20 mg/m³ TWA
Norway	50 ppm TWA
	240 mg/m³ TWA
	75 ppm STEL
	300 mg/m³ STEL
Poland	480 mg/m³ STEL
	240 mg/m³ TWA
Portugal OELs Data	50 ppm
	246 mg/m³
	100 ppm STEL
	492 mg/m³ STEL
Romania	50 ppm TWA
	246 mg/m³ TWA 51 ppm TWA
	250 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL
Russia	5 mg/m³ MAC (vapor)
Slovakia	50 ppm TWA
	246 mg/m³ TWA
	492 mg/m³ Ceiling
Slovenia	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL

Spain	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL
Sweden	20 ppm LLV
	98 mg/m³ LLV
	50 ppm STV
	245 mg/m³ STV
Switzerland	100 ppm STEL
	500 mg/m³ STEL
	50 ppm TWA
	250 mg/m³ TWA
Turkey	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	492 mg/m³ STEL
United Kingdom	50 ppm TWA
	246 mg/m³ TWA
	100 ppm STEL
	491 mg/m³ STEL
ACGIH - TLV	10 ppm TWA

Legend
ACGIH (American Conference of Governmental Industrial Hygienists)
TLV® (Threshold Limit Value)
TWA (time-weighted average)
STEL (Short Term Exposure Limit)
MAK - Maximum Occupational Exposure Limits
SKIN: Skin Absorption

Biological occupational exposure limits

Component **Styrene**

Bulgaria
BEI: 600 mg/g Creatinine, DETERMINANT: Mandelic acid and Phenylglyoxylic acid - together in urine, SAMPLING TIME: at the end of exposure or end of shift, in remote exposure - after several shifts
Finland
BEI: 1.2 mmol/L, DETERMINANT: MAPGA in urine, SAMPLING TIME: prior to shift, NOTE: MAPGA equals sum of urinary Mandelic and Phenylglyoxylic acids
France
BEI: 0.55 mg/L, DETERMINANT: Styrene in venous blood, SAMPLING TIME: end of shift, NOTE: Semi-quantitative (ambiguous interpretation)
BEI: 0.02 mg/L, DETERMINANT: Styrene in venous blood, SAMPLING TIME: prior to shift, NOTE: Semi-quantitative (ambiguous interpretation)
BEI: 800 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: end of shift, NOTE: Non-specific (observed after the exposure to other substances)
BEI: 300 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: prior to shift, NOTE: Non-specific (observed after the exposure to other substances)
BEI: 240 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: end of shift, NOTE: Non-specific (observed after the exposure to other substances)
BEI: 100 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: prior to shift, NOTE:
Germany
BEI: 600 mg/g, DETERMINANT: Mandelic acid plus Phenylglyoxylic acid in urine, SAMPLING TIME: end of shift, NOTE: measured as mg/g Creatinine
BEI: 600 mg/g, DETERMINANT: Mandelic acid plus Phenylglyoxylic acid in urine, SAMPLING TIME: end of several shifts, NOTE: measured as mg/g Creatinine; for long-term exposures
Latvia
BEI: 0.8 g/g Creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: end of shift
BEI: 0.55 mg/l, DETERMINANT: Styrene in blood, SAMPLING TIME: end of shift

Romania
BEI: 800 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: end of shift
BEI: 300 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: beginning of second shift
BEI: 100 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: end of shift
BEI: 100 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: beginning of second shift
BEI: 0.55 mg/L, DETERMINANT: Styrene in blood, SAMPLING TIME: end of shift
BEI: 0.02 mg/L, DETERMINANT: Styrene in blood, SAMPLING TIME: beginning of second shift
Slovakia
BEI: 600 mg/g creatinine, DETERMINANT: Mandelic acid and phenylglycolic acid in urine, SAMPLING TIME: after all work shifts, NOTE: for long-term exposure
BEI: 600 mg/g creatinine, DETERMINANT: Mandelic acid and phenylglycolic acid in urine, SAMPLING TIME: end of exposure or work shift, NOTE:

Component	Derived No Effect Level (DNEL)	Predicted No Effect Concentration (PNEC)
Styrene	End Use: Workers Exposure Route: Inhalation Exposure Type: Acute, systemic effects Value: 289 mg/m³ (68 ppm) End Use: Workers Exposure Route: Inhalation Exposure Type: Acute, local effects Value: 306 mg/m³ (72 ppm) End Use: Workers Exposure Route: Inhalation Exposure Type: Long term, systemic effects Value: 85 mg/m³ (20 ppm) End Use: Workers Exposure Route: Dermal Exposure Type: Long term, systemic effects Value: 406 mg/kg bw/day End Use: General Population Exposure Route: Inhalation Exposure Type: Acute, systemic effects Value: 174.25 mg/m³ (41 ppm) End Use: General Population Exposure Route: Inhalation Exposure Type: Acute, local effects Value: 182.75 mg/m³ (43 ppm) End Use: General Population Exposure Route: Inhalation Exposure Type: Long term, systemic effects Value: 10.2 mg/m³ (2.4 ppm) End Use: General Population Exposure Route: Dermal Exposure Type: Long term, systemic effects Value: 343 mg/kg bw/day	Fresh water Value: 0.028 mg/l Assessment factor: 10 Sea water Value: 0.0028 mg/l Assessment factor: 100 Water Value: 0.04 mg/l Intermittent Releases Assessment factor: 100 Fresh water sediment Value: 0.614 mg/kg dw Sea sediment Value: 0.0614 mg/kg dw Sewage Treatment Plant Value: 5 mg/l Assessment factor: 100 Soil Value: 0.2 mg/kg dw

8.2. Exposure controls

Engineering controls Use general ventilation to maintain airborne concentrations to levels that are below regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations.

Personal Protective Equipment

Eye Protection Safety glasses with side-shields conforming to EN166. If splashes are likely to occur:. Tightly fitting safety goggles (EN166). Ensure that eyewash stations and safety showers are close to the workstation location.

Skin protection Impervious clothing.

Hand Protection Protective gloves complying with EN 374. Wear protective nitrile rubber or Viton™ gloves. Gloves made of nitrile rubber or polyvinyl chloride (PVC) may be used for splash protection and brief or intermittent contact with styrenated polyester resin. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Respiratory protection None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Wear an approved air-purifying respirator with organic vapor cartridges and particulate filters where airborne concentrations may exceed exposure limits in Section 8 and/or there is exposure to dust or mists due to sanding, grinding, cutting, or spraying. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Recommended Filter type: Type A (EN141) and Type P2 (EN143)

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	blue	**Physical State**	Liquid
Odour	Pungent	**Odour Threshold**	0.2 ppm (Styrene) 0.05 ppm - 13 ppm (alpha-Methyl Styrene)

		Remarks Method
pH	Not applicable	None known
Melting point / Freezing point	-23°C - -30°C	None known
Boiling point / boiling range	146°C - 165°C	None known
Flash Point	32 °C	None known
Evaporation Rate	0.49 (BuAc = 1) (Styrene)	None known
Flammability Limit in Air		None known
Upper	6.6%	
Lower	0.9%	
Vapour Pressure	2.9 - 6.7 hPa @ 20°C	None known
Vapour Density	3.6 - 4.1 (Air = 1)	None known
specific gravity	1.1 @ 20°C	None known
Solubility	Insoluble (Water)	None known
Partition coefficient: n-octanol/water	No information available	None known
Autoignition Temperature	490°C - 574°C	None known
Decomposition temperature	No information available	None known
Viscosity	900 - 1100 mPas @ 23°C	Brookfield Test Method
Explosive properties	No information available	
Oxidising properties	No information available	

9.2. OTHER INFORMATION

No information available

10. Stability and Reactivity

10.1. Reactivity
Unstable upon depletion of inhibitor.

10.2. Chemical stability
Stable under normal conditions. Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
Polymerisation can occur. Hazardous polymerization will occur if contaminated with peroxides, metal salts and polymerization catalysts. Hazardous polymerization may occur upon depletion of inhibitor - may cause heat and pressure build-up in closed containers. Product will undergo hazardous polymerization at temperatures above 150 F (65 C).

10.4. Conditions to Avoid
Heat, flames and sparks. Contamination by those materials referred to under Incompatible materials. Unstable upon depletion of inhibitor. Elevated temperatures.

10.5. incompatible materials
Strong acids. Strong oxidising agents. Metal salts. Polymerization initiators. Copper. Copper alloys. Brass.

10.6. Hazardous Decomposition Products
Hydrocarbons. Carbon monoxide. Carbon dioxide (CO2). Thermal decomposition can lead to release of irritating and toxic gases and vapours.

11. Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Inhalation	Harmful by inhalation. May cause irritation of respiratory tract. Inhalation of high vapor concentrations can cause CNS depression and narcosis.
Eye Contact	Irritating to eyes.
Skin Contact	Causes skin irritation. Prolonged skin contact may defat the skin and produce dermatitis.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Styrene

Oral LD50	= 5000 mg/kg (Rat)
dermal LD50	> 2000 mg/kg (Rat)
Inhalation LC50	= 11.8 mg/l (4 H) (Rat)

Alpha-Methyl Styrene

Oral LD50	= 4900 mg/kg (Rat)

Irritation	Irritating to eyes and skin.
corrosivity	Not corrosive.
Sensitisation	Not sensitizing.
Carcinogenic effects	There is no convincing evidence that styrene possesses significant carcinogenic potential in humans.
Repeated dose toxicity	In humans, styrene may cause a transient decrease in color discrimination and effects on hearing. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to defatting properties of the product. May cause damage to the liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled.
Mutagenic effects	Styrene has given mixed positive and negative results in a number of mutagenicity tests. Styrene was not mutagenic without metabolic activation but gave negative and positive mutagenic results with metabolic activation.
Target organ(s)	Liver, Central Nervous System (CNS), Respiratory system.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 56% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	5045 mg/kg
ATEmix (dermal)	2092 mg/kg
ATEmix (inhalation-vapour)	12.3 mg/l

12. Ecological Information

12.1. Toxicity

Styrene

Algae	EC50 = 1.4 mg/L (Pseudokirchneriella subcapitata) (72h)
	EC50 0.46 - 4.3 mg/L (Pseudokirchneriella subcapitata) (72h)
Fish	LC50 3.24 - 4.99 mg/L (Pimephales promelas) (96 h) flow-through
	LC50 19.03 - 33.53 mg/L (Lepomis macrochirus) (96 h) static
	LC50 6.75 - 14.5 mg/L (Pimephales promelas) (96 h) static
	LC50 58.75 - 95.32 mg/L (Poecilia reticulata) (96 h) static
Aquatic Invertebrates	EC50 3.3 - 7.4 mg/L (Daphnia magna) (48h)

Alpha-Methyl Styrene

Algae	EC50 52.6 mg/l (Pseudokirchneriella subcapitata) (72 h)
Fish	LC50 15 mg/l (Oryzias latipes) (96 h)
Aquatic Invertebrates	EC50 54 mg/l (Daphnia magna) (48 h)

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely.

Styrene

log Kow 2.95

Bioconcentration factor (BCF) 74

Alpha-Methyl Styrene

log Kow 3.265

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Waste from residues/unused products This material and its container must be disposed of as hazardous waste. Dispose of contents/containers in accordance with local regulations. Can be incinerated, when in compliance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

EWC Waste Disposal No

07 00 00 WASTES FROM ORGANIC CHEMICAL PROCESSES
07 02 00 Wastes from MFSU of plastics, synthetic rubber and man-made fibres
07 02 99 Wastes not otherwise specified

14. Transport information

ADR/RID

UN-No	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	3
Packing group	III
Environmental hazard	None
Classification code	F1
Hazard identification number (Kemler No.)	30
Tunnel restriction code	D/E
ADR Exception	This material meets the viscosity criteria specified in ADR 2.2.3.1.5 and may be classed as "not dangerous" when packaged in containers of less than 450 liters.

IMDG/IMO

UN-No	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	CLASS 3
Packing group	PG III
Environmental hazard	None
EmS-No	F-E, S-E
IMDG Exception	This material meets the viscosity criteria specified in IMDG Code 2.3.2.5 and may be exempt from the marking, labelling and package testing requirements if transported in containers of 30 liters or less.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

IATA

UN-No	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	3
Packing group	III
Environmental hazard	None
Packing Instructions	355, 366

15. Regulatory Information

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

Denmark

List of substances and processes that are considered to be carcinogenic

Component	Status
Styrene (CAS #: 100-42-5)	Present

Additional information
Must not be used by youngsters under the age of 18, ref. the notification from the Ministry of Labour regarding work by youngsters. The user must have undergone special training approved by the Labour Inspection Authority (AT) in order to work with products containing carcinogenic substances.

Germany

WGK Classification (VwVwS)
Hazardous to water/Class 2

Netherlands

List of Carcinogens, Mutagens and Reproductive Toxins
No information available

Water Hazard Class
10-May cause long-term adverse effects in the aquatic environment.

International Inventories

TSCA Inventory Status:	All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.
Canadian Inventory Status:	All components of this material are listed on the Canadian Domestic Substances List (DSL).
Australian Inventory Status:	This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances.
Korean Inventory Status:	This product contains only chemicals which are currently listed on the Korean Chemical Substances List.
Philippine Inventory:	All components of this material are listed on or are exempt from the Philippine Inventory of Chemicals and Chemical Substances.
Japan ENCS:	This product contains one or more chemicals currently not on the Japanese Inventory of Existing and New Chemical Substances.
Chinese IECS:	This product contains only chemicals that are currently listed on the Chinese Inventory of Existing Chemical Substances.
New Zealand Inventory:	This product contains only chemicals which are currently listed on the New Zealand Inventory of Chemicals.

Product Registrations

Norway	PRN-Number: 34089

16. Other Information

Classification procedure:

Acute toxicity - Inhalation (Vapours)	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Reproductive Toxicity	Weight of evidence
Specific target organ toxicity (single exposure)	Calculation method
Specific target organ toxicity (repeated exposure)	Calculation method
Chronic aquatic toxicity	Calculation method
flammable liquid	On basis of test data

Text of R phrases mentioned in Section 3
R10 - Flammable
R20 - Harmful by inhalation
R63 - Possible risk of harm to the unborn child
R65 - Harmful: may cause lung damage if swallowed
R36/37 - Irritating to eyes and respiratory system
R36/37/38 - Irritating to eyes, respiratory system and skin
R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under sections 2 and 3
H226 - Flammable liquid and vapour
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H361d - Suspected of damaging the unborn child
H372 - Causes damage to hearing through prolonged or repeated exposure if inhaled
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

Denmark Arbejdstilsynet Order no. 908 of 27 September 2005 with subsequent amendments

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End of Safety Data Sheet