

# SAFETY DATA SHEET



## Atlac® 590

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

#### 1.1 Product identifier

Product name : Atlac® 590  
 Internal code : 002126WW17793  
 Chemical formula : Not applicable.

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

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

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

Supplier : Aliancys AG  
 Stettemerstrasse 28  
 CH-8207 Schaffhausen  
 Switzerland  
 Tel: +41 52 6441212  
 www.aliancys.com

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

#### 1.4 Emergency telephone number

Emergency telephone number : Switzerland +41 52 644 1222

### 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  
 Skin Irrit. 2, H315  
 Eye Irrit. 2, H319  
 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.

#### 2.2 Label elements

##### Hazard pictograms



Signal word : Danger

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

Supplemental label elements : Not applicable.

#### Precautionary statements

Prevention : P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P280 - Wear protective gloves: 4 - 8 hours (breakthrough time): fluor rubber (Viton) (0.70 mm); < 1 hour (breakthrough time): Chloroprene, neoprene (0.2 mm). Wear eye or face protection.  
 Wear protective clothing.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.  
 P242 - Use only non-sparking tools.  
 P243 - Take precautionary measures against static discharge.  
 P233 - Keep container tightly closed.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P273 - Avoid release to the environment.  
 P260 - Do not breathe vapour.  
 P270 - Do not eat, drink or smoke when using this product.  
 P264 - Wash hands thoroughly after handling.

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

**Storage** : P235 - Keep cool.

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

**Hazardous ingredients** : Styrene  
 methacrylic acid; 2-methylpropenoic acid

### 2.3 Other hazards

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

## SECTION 3: Composition/information on ingredients

**3.1 Substances / 3.2 Mixtures** : Mixture

Product/ingredient name	Identifiers	%	<u>Classification</u> 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 - <39	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d (Unborn child) STOT SE 3, H335 STOT RE 1, H372 (hearing organs) (inhalation) Asp. Tox. 1, H304 Aquatic Chronic 3, H412
methacrylic acid; 2-methylpropenoic acid	REACH #: 01-2119463884-26 EC: 201-204-4 CAS: 79-41-4 Index: 607-088-00-5	≥1 - <2	Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 4, H332 Skin Corr. 1A, H314 STOT SE 3, H335 <b>See Section 16 for the full text of the H statements declared above.</b>

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.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

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

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

##### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- 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.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Small fire

- Suitable** : Use dry chemical powder, CO<sub>2</sub> or alcohol-resistant foam. Cover with vermiculite or other non-combustible material.
- Not suitable** : Do not use water jet.

#### Large fire

- Suitable** : Alcohol-resistant foam.
- Not suitable** : Do not use water jet.

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

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

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

### 5.3 Advice for firefighters

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

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

**Additional information** : None.

## SECTION 6: Accidental release measures

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

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

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

### 6.2 Environmental precautions

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

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

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

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

### 6.4 Reference to other sections

: See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

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

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### Advice on general occupational hygiene

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

#### 7.2 Conditions for safe storage, including any incompatibilities

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

Do not store above the following temperature: 30 °C.

Keep away from heat and direct sunlight.

#### 7.3 Specific end use(s)

**Recommendations** : Not available.

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

## SECTION 8: Exposure controls/personal protection

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

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
Styrene	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> STEL: 250 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 430 mg/m <sup>3</sup> 8 hours. STEL: 1080 mg/m <sup>3</sup> 15 minutes.
methacrylic acid; 2-methylpropenoic acid	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> STEL: 143 mg/m <sup>3</sup> 15 minutes. STEL: 40 ppm 15 minutes. TWA: 72 mg/m <sup>3</sup> 8 hours. TWA: 20 ppm 8 hours.

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

#### DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Styrene	DNEL	Short term Inhalation	289 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Short term Inhalation	306 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	85 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Short term Inhalation	174.25 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Short term Inhalation	182.75 mg/m <sup>3</sup>	Consumers	Local
	DNEL	Long term Inhalation	10.2 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Long term Dermal	406 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	343 mg/kg bw/day	Consumers	Systemic

methacrylic acid; 2-methylpropenoic acid	DNEL	Long term Oral	2.1 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Dermal	4.25 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	29.6 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	88 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Dermal	2.55 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	6.3 mg/m <sup>3</sup>	Consumers	Systemic
	DNEL	Long term Inhalation	6.55 mg/m <sup>3</sup>	Consumers	Local

**PNECs**

Product/ingredient name	Compartment Detail	Value	Method Detail
Styrene	Fresh water	0.028 mg/l	Assessment Factors
	Marine water	0.014 mg/l	Assessment Factors
	Fresh water sediment	0.614 mg/kg dwt	-
	Marine water sediment	0.307 mg/kg dwt	-
	Sewage Treatment Plant	5 mg/l	Assessment Factors
	Soil	0.2 mg/kg dwt	-
methacrylic acid; 2-methylpropenoic acid	Intermittent releases.	0.04 mg/l	Assessment Factors
	Fresh water	0.82 mg/l	-
	Marine	0.82 mg/l	-
	Sewage Treatment Plant	10 mg/l	-
	Soil	1.2 mg/kg dwt	-

**8.2 Exposure controls**

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

**Individual protection measures**

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses with side shields.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 4 - 8 hours (breakthrough time): fluor rubber (Viton) (0.70 mm)  
< 1 hour (breakthrough time): Chloroprene, neoprene (0.2 mm)
- Skin and body** : Chemical-resistant protective suit.
- Respiratory protection** : Wear filter mask, filtertype A.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Remarks** : Replace damaged gloves.

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

## SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

- Physical state** : Liquid. [Clear.]
- Colour** : Yellow green.
- Odour** : Characteristic.
- Odour threshold** : 0.15 to 25 ppm
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : 145 °C
- Softening range** : Not available.
- Flash point** : 33 °C Closed cup, ISO 1523
- Evaporation rate** : 12.4 (compared with butyl acetate)
- Flammability (solid, gas)** : Combustible when exposed to heat or flame.

<b>Upper/lower flammability or explosive limits</b>	: Lower: 1.1% Upper: 6.1%
<b>Vapour pressure</b>	: 0.67 kPa
<b>Vapour density</b>	: 3.6 (Air = 1)
<b>Relative density</b>	: 1.08 (Water = 1)
<b>Density ( g/cm<sup>3</sup> )</b>	: 1.08 g/cm <sup>3</sup> (25°C)
<b>Bulk density</b>	: Not available.
<b>Solubility</b>	: Insoluble in the following materials: cold water and hot water.
<b>Solubility in water</b>	: Not available.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: 490 °C
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Dynamic (room temperature): 208 to 282 mPa·s (208 to 282 cP) Kinematic (room temperature): >1.92 cm <sup>2</sup> /s (>192 cSt) Kinematic (40°C): >0.205 cm <sup>2</sup> /s (>20.5 cSt)
<b>Explosive properties</b>	: None.
<b>Oxidising properties</b>	: None.

## 9.2 Other information

### SECTION 10: Stability and reactivity

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

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Styrene	LC50 Inhalation Vapour	Rat	10 to 20 mg/l	4 hours
	LD50 Oral	Rat	>5000 mg/kg	-
methacrylic acid; 2-methylpropenoic acid	LDLo Dermal	Rat - Male, Female	>2000 mg/kg	-
	LC50 Inhalation Vapour	Rat	7.1 mg/l Air	4 hours
	LD50 Dermal	Rabbit	500 mg/kg	-
	LD50 Dermal	Rabbit	500 to 1000 mg/kg	-
	LD50 Oral	Mouse - Male	1600 mg/kg	-
	LD50 Oral	Rat	1060 mg/kg	-
	LD50 Oral	Rat - Male	1320 mg/kg	-

**Conclusion/Summary** : Not available.

##### Acute toxicity estimates

Route	ATE value
Oral	41714.7 mg/kg
Dermal	19676.8 mg/kg
Inhalation (vapours)	21.77 mg/l

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
methacrylic acid; 2-methylpropenoic acid	Skin - Severe irritant	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-

**Conclusion/Summary**

**Eyes** : Not available.

**Skin** : Not available.

**Respiratory** : Not available.

**Sensitisation**

Product/ingredient name	Route of exposure	Species	Result
methacrylic acid; 2-methylpropenoic acid	skin	Guinea pig	Not sensitizing

**Conclusion/Summary**

**Skin** : Not available.

**Respiratory** : Not available.

**Mutagenicity**

**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
methacrylic acid; 2-methylpropenoic acid	Category 3	Not applicable.	Respiratory tract irritation

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

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

**Aspiration hazard**

Product/ingredient name	Result
Styrene	ASPIRATION HAZARD - Category 1

**Potential acute health effects**

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

**Inhalation** : May cause respiratory irritation.

**Skin contact** : Causes skin irritation.

**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

#### Potential chronic health effects

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

**Conclusion/Summary** : Not available.

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

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

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

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

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

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

#### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Styrene	A4	2B	-	-	Reasonably anticipated to be a human carcinogen.	-
1,4-dihydroxybenzene	A3	3	-	-	-	-

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure	Effects
Styrene  methacrylic acid; 2-methylpropenoic acid	Acute EC50 4.9 mg/l Fresh water	Algae	72 hours	-
	Acute EC50 4.7 mg/l Fresh water	Daphnia	48 hours	-
	Acute LC50 10 mg/l Fresh water	Fish	96 hours	-
	Chronic NOEC 1.01 mg/l Fresh water	Daphnia	21 days	-
	EC10 100 mg/l Fresh water	Micro-organism	16.5 hours	-
	EC50 20 mg/l Fresh water	Algae	72 hours	(biomass)
	EC50 45 mg/l Fresh water	Algae	72 hours	(growth rate)
	EC50 270 mg/l Fresh water	Micro-organism	16.5 hours	-
	NOEC 8.2 mg/l Fresh water	Algae	72 hours	-
	Acute EC50 >130 mg/l Fresh water	Daphnia	48 hours	-
	Acute LC50 85 mg/l Fresh water	Fish	96 hours	Mortality
	Acute NOEC 12 mg/l Fresh water	Fish	96 hours	Mortality
	Chronic LC50 42 mg/l Fresh water	Fish	35 days	-
	Chronic NOEC 53 mg/l Fresh water	Daphnia	21 days	-
	Chronic NOEC 53 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days	Reproduction
	Chronic NOEC 10 mg/l Fresh water	Fish	35 days	-

**Conclusion/Summary** : Not available.

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Styrene methacrylic acid; 2-methylpropenoic acid	- OECD 301 D	73.2 % - 28 days 86 % - Readily - 28 days	- -	- -

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Styrene methacrylic acid; 2-methylpropenoic acid	- -	- -	Readily Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Styrene methacrylic acid; 2-methylpropenoic acid	3 0.93	13.49 -	low low

### 12.4 Mobility in soil

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

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

**PBT** : Not applicable.

**vPvB** : Not applicable.

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

## SECTION 13: Disposal considerations

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

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. 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.





**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	ADN	IMDG	IATA
14.1 UN number	UN1866	UN1866	UN1866	UN1866
14.2 UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION	Resin solution
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	No.	Yes.	No.	No.
Additional information	<u>Hazard identification number</u> 30  <u>Limited quantity</u> 5 L  <u>Special provisions</u> 640E  <u>Tunnel code</u> (D/E)	The product is only regulated as an environmentally hazardous substance when transported in tank vessels.  <u>Special provisions</u> 640E	<u>Emergency schedules (EmS)</u> F-E, _S-E_  <u>Special provisions</u> 223, 955	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 60 L Packaging instructions: 355 <u>Cargo Aircraft Only</u> Quantity limitation: 220 L Packaging instructions: 366 <u>Limited Quantities - Passenger Aircraft</u> Quantity limitation: 10 L Packaging instructions: Y344  <u>Special provisions</u> 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 73/78 and the IBC Code : Not available.

## SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

### Annex XIV

None of the components are listed.

### Substances of very high concern

None of the components are listed.

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

Not applicable.

### Other EU regulations

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Styrene	-	-	Repr. 2, H361d (Unborn child)	-

## National regulations

International regulationsChemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

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

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

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

## SECTION 16: Other information

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

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

<b>Full text of abbreviated H statements</b>	: H226 H302 H304 H311 H314 H315 H319 H332 H332 (inhalation) H335 H361d (Unborn child) H372  H372 (hearing organs) (inhalation) H412	Flammable liquid and vapour. Harmful if swallowed. May be fatal if swallowed and enters airways. Toxic in contact with skin. Causes severe skin burns and eye damage. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. Harmful if inhaled. May cause respiratory irritation. Suspected of damaging the unborn child. Causes damage to organs through prolonged or repeated exposure. Causes damage to organs through prolonged or repeated exposure if inhaled. (hearing organs) Harmful to aquatic life with long lasting effects.
<b>Full text of classifications [CLP/GHS]</b>	: Acute Tox. 3, H311 Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412 Asp. Tox. 1, H304 Eye Irrit. 2, H319 Flam. Liq. 3, H226 Repr. 2, H361d (Unborn child) Skin Corr. 1A, H314 Skin Irrit. 2, H315 STOT RE 1, H372  STOT RE 1, H372 (hearing organs) (inhalation) STOT SE 3, H335	ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 LONG-TERM AQUATIC HAZARD - Category 3 ASPIRATION HAZARD - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 3 TOXIC TO REPRODUCTION (Unborn child) - Category 2  SKIN CORROSION/IRRITATION - Category 1A SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) (inhalation) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)

(Respiratory tract irritation) - Category 3

**Alterations compared to the previous version** : Alterations compared to the previous version are marked with a little (blue) triangle.

**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

**Sources of key data** : Literature data and/or investigation reports are available through the manufacturer.

**Internal code** : 002126WW17793

**Training advice** : Handling of this substance or preparation is restricted to skilled personnel only.

#### Notice to reader

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

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

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