



# SAFETY DATA SHEET

In accordance with EU regulations:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision Date 21/Aug/2019

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

**Product Name** **TRADELINE RESIN**  
**Product Code(s):** 37390 ; 37391; 37689; 195699  
**Chemical Family** Polyester Resin

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

**Recommended Use** Laminating Resin  
**Uses advised against** No information available

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

#### **Supplier**

CFSNET Ltd  
United Downs Industrial Park  
St Day  
Redruth  
Cornwall  
TR16 5HY

### 1.4. Emergency contact

**CFSNET Ltd:**  
Tel: +44 (0)1209 821028  
Email: sales@cfsnet.co.uk  
Web: www.cfsnet.co.uk

## 2. HAZARDS IDENTIFICATION

### 2.1. - Classification of the substance or mixture

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

Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Reproductive toxicity	Category 2 - (H361)

Specific target organ toxicity — single exposure  
 Specific target organ toxicity — repeated exposure  
 Chronic aquatic toxicity  
 Flammable liquid

Category 3 - (H335)  
 Category 1 - (H372)  
 Category 3 - (H412)  
 Category 3 - (H226)

**2.2. Label Elements**

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



Signal word

Danger

Contains Styrene, Cobalt bis(2-ethylhexanoate)

**Hazard statements**

H315 - Causes skin irritation  
 H319 - Causes serious eye irritation  
 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

EUH208 - Contains Cobalt bis(2-ethylhexanoate). May produce an allergic reaction.

**Precautionary Statements - EU (§28, 1272/2008)**

P201 - Obtain special instructions before use  
 P202 - Do not handle until all safety precautions have been read and understood  
 P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking  
 P260 - Do not breathe mist/vapours/spray  
 P308 + P313 - IF exposed or concerned: Get medical advice/attention  
 P314 - Get medical advice/attention if you feel unwell  
 P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
 P501 - Dispose of contents/ container to an approved waste disposal plant

**2.3. Other hazards**

No information available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	EC No	CAS No	Weight-%	EU - GHS Substance Classification	REACH Reg. No
Styrene	202-851-5	100-42-5	30 - 50	STOT SE 3 (H335) STOT RE 1 (H372) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Repr. 2 (H361d) Acute Tox. 4 (H332) Flam Liq. 3 (H226) Aquatic Ch. 3 (H412)	01-2119457861-32
Cobalt bis(2-ethylhexanoate)	205-250-6	136-52-7	<0.1	Skin Sens. 1A (H317) Repr. Cat. 1B (H360Fd) Aquatic Acute 1 (H400) Aquatic Chronic 3(H412)	01-2119524678-29

				Eye Irritant Cat 2 (H319)	
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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 reuse.

#### **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. FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

Carbon dioxide (CO<sub>2</sub>), 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 mixtures 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 skin, eyes or clothing. Take off contaminated clothing and wash it before reuse. 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)**

#### **Other Guidelines**

No information available.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1. Control parameters**

#### **Exposure Limits**

Components with workplace control parameters.

#### **Styrene**

<b>Austria</b>	80 ppm STEL 340 mg/m <sup>3</sup> STEL 20 ppm TWA 85 mg/m <sup>3</sup> TWA
<b>Belgium</b>	25 ppm TWA 108 mg/m <sup>3</sup> TWA (skin) 80 ppm STEL 346 mg/m <sup>3</sup> STEL
<b>Bulgaria</b>	85.0 mg/m <sup>3</sup> TWA 215.0 mg/m <sup>3</sup> STEL
<b>Croatia</b>	(skin) 250 ppm STEL KGV1 1080 mg/m <sup>3</sup> STEL KGV1 100 ppm TWA GVI 430 mg/m <sup>3</sup> TWA GVI
<b>Czech Republic</b>	400 mg/m <sup>3</sup> Ceiling 100 mg/m <sup>3</sup> TWA (skin)
<b>Denmark</b>	25 ppm Ceiling 105 mg/m <sup>3</sup> Ceiling (skin)

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<b>Estonia</b>	20 ppm TWA 90 mg/m <sup>3</sup> TWA 50 ppm STEL 200 mg/m <sup>3</sup> STEL (skin)
<b>Finland</b>	20 ppm TWA 86 mg/m <sup>3</sup> TWA 100 ppm STEL 430 mg/m <sup>3</sup> STEL
<b>France</b>	23.3 ppm TWA 100 mg/m <sup>3</sup> TWA 1000 mg/m <sup>3</sup> TWA 46.6 mg/m <sup>3</sup> 200 ppm 1500 mg/m <sup>3</sup> (skin)
<b>Germany</b>	20 ppm TWA 86 mg/m <sup>3</sup> TWA
<b>Greece</b>	100 ppm TWA 425 mg/m <sup>3</sup> TWA 250 ppm STEL 1050 mg/m <sup>3</sup> STEL
<b>Hungary</b>	50 mg/m <sup>3</sup> TWA AK 50 mg/m <sup>3</sup> STEL CK
<b>Ireland</b>	85 mg/m <sup>3</sup> TWA 20 ppm TWA 40 ppm STEL 170 mg/m <sup>3</sup> STEL
<b>Italy</b>	20 ppm TWA 85 mg/m <sup>3</sup> TWA 40 ppm STEL 170 mg/m <sup>3</sup> STEL
<b>Latvia</b>	10 mg/m <sup>3</sup> TWA 30 mg/m <sup>3</sup> STEL
<b>Lithuania</b>	20 ppm TWA (IPRD) 90 mg/m <sup>3</sup> TWA (IPRD) 10 ppm TWA (IPRD) 50 ppm STEL (TPRD) 200 mg/m <sup>3</sup> STEL (TPRD) (skin)
<b>Norway</b>	25 ppm TWA 105 mg/m <sup>3</sup> TWA M 37.5 ppm STEL 131.25 mg/m <sup>3</sup> STEL
<b>Poland</b>	100 mg/m <sup>3</sup> STEL 50 mg/m <sup>3</sup> TWA
<b>Portugal OELs Data</b>	20 ppm 40 ppm STEL
<b>Romania</b>	12 ppm TWA 50 mg/m <sup>3</sup> TWA 35 ppm STEL 150 mg/m <sup>3</sup> STEL
<b>Russia</b>	10 mg/m <sup>3</sup> TWA () 30 mg/m <sup>3</sup> STEL (2410)
<b>Slovakia</b>	20 ppm TWA 86 mg/m <sup>3</sup> TWA 200 mg/m <sup>3</sup> Ceiling
<b>Slovenia</b>	20 ppm TWA 86 mg/m <sup>3</sup> TWA 80 ppm STEL 344 mg/m <sup>3</sup> STEL
<b>Spain</b>	20 ppm TWA 86 mg/m <sup>3</sup> TWA 40 ppm STEL

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<b>Sweden</b>	172 mg/m <sup>3</sup> STEL 10 ppm TLV 43 mg/m <sup>3</sup> TLV 20 ppm Indicative STEL 86 mg/m <sup>3</sup> Indicative STEL (skin)
<b>Switzerland</b>	40 ppm STEL 170 mg/m <sup>3</sup> STEL 20 ppm TWA 85 mg/m <sup>3</sup> TWA
<b>United Kingdom</b>	100 ppm TWA 430 mg/m <sup>3</sup> TWA 250 ppm STEL 1080 mg/m <sup>3</sup> STEL
<b>ACGIH - TLV</b>	20 ppm TWA 40 ppm STEL
<b>Cobalt bis(2-ethylhexanoate)</b>	
<b>Austria</b>	(skin)
<b>Czech Republic</b>	0.1 mg/m <sup>3</sup> Ceiling 0.05 mg/m <sup>3</sup> TWA
<b>Greece</b>	0.1 mg/m <sup>3</sup> TWA
<b>Ireland</b>	0.1 mg/m <sup>3</sup> TWA 0.3 mg/m <sup>3</sup> STEL
<b>Norway</b>	0.02 mg/m <sup>3</sup> TWA 0.06 mg/m <sup>3</sup> STEL
<b>Switzerland</b>	(skin)
<b>United Kingdom</b>	0.05 mg/m <sup>3</sup> TWA 0.1 mg/m <sup>3</sup> 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****Chemical Name****Styrene****Bulgaria**

BEI: 600 mg/g Creatinine, DETERMINANT: Mandelic acid and Phenylglyoxylic acid - total 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: in the morning after a working day, NOTE: MAPGA equals sum of urinary Mandelic and Phenylglyoxylic acids

**France**

BEI: 0.02 mg/L, DETERMINANT: Styrene in venous blood, SAMPLING TIME: Before the beginning of the next shift, NOTE: Semi-quantitative (ambiguous interpretation)

BEI: 0.04 mg/L, DETERMINANT: Styrene in urine, SAMPLING TIME: end of shift, NOTE:

BEI: 400 mg/g creatinine, DETERMINANT: Mandelic acid and Phenylglyoxyl in urine, SAMPLING TIME: end of shift, preferably at end of workweek, NOTE:

BEI: 300 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: Before the beginning of the next shift, NOTE: Non-specific (observed after the exposure to other substances)

BEI: 0.55 mg/L, DETERMINANT: Styrene in venous blood, SAMPLING TIME: end of 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: 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 next shift

BEI: 100 mg/g Creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: end of 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 next 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:

Chemical Name	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/m <sup>3</sup> (68 ppm)	Fresh water Value: 0.028 mg/l Assessment factor: 10
	End Use: Workers Exposure Route: Inhalation Exposure Type: Acute, local effects Value: 306 mg/m <sup>3</sup> (72 ppm)	Sea water Value: 0.0028 mg/l Assessment factor: 100
	End Use: Workers Exposure Route: Inhalation Exposure Type: Long term, systemic effects Value: 85 mg/m <sup>3</sup> (20 ppm)	Water Value: 0.04 mg/l Intermittent Releases Assessment factor: 100
	End Use: Workers Exposure Route: Dermal Exposure Type: Long term, systemic effects Value: 406 mg/kg bw/day	Fresh water sediment Value: 0.614 mg/kg dw
	End Use: General Population Exposure Route: Inhalation Exposure Type: Acute, systemic effects Value: 174.25 mg/m <sup>3</sup> (41 ppm)	Sea sediment Value: 0.0614 mg/kg dw
	End Use: General Population Exposure Route: Inhalation Exposure Type: Acute, local effects Value: 182.75 mg/m <sup>3</sup> (43 ppm)	Sewage Treatment Plant Value: 5 mg/l Assessment factor: 100
	End Use: General Population Exposure Route: Inhalation Exposure Type: Long term, systemic effects Value: 10.2 mg/m <sup>3</sup> (2.4 ppm)	Soil Value: 0.2 mg/kg dw
	End Use: General Population Exposure Route: Dermal Exposure Type: Long term, systemic	

	effects Value: 343 mg/kg bw/day	
<b>Cobalt bis(2-ethylhexanoate)</b>	End Use: Workers Exposure Route: Inhalation Exposure Type: Long term, local effects Value: 235 ug/m <sup>3</sup>	Fresh water Value: 0.51 ug Co/L
	End Use: General Population Exposure Route: Oral Exposure Type: Long term, systemic effects Value: 55.8 ug/kg bw/day	Marine water Value: 2.36 ug Co/L
	End Use: General Population Exposure Route: Inhalation Exposure Type: Long term, local effects Value: 37 ug/m <sup>3</sup>	Sediment Value: 9.5 mg Co/kg sed. dw
		Soil Value: 7.9 mg Co/kg Soil dw
		Sewage Treatment Plant Value: 0.37 mg Co/l

**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**

<b>Appearance</b>	Yellow
<b>Physical State</b>	Liquid
<b>Odour</b>	Pungent
<b>Odour threshold</b>	0.2 ppm (Styrene)

		Remarks	Method
<b>pH</b>	Not applicable	None known	
<b>Melting point / freezing point</b>	-30°C (Styrene)	None known	
<b>Boiling point / boiling range</b>	146°C (Styrene)	None known	



<b>Flash point</b>	32 °C	Seta closed cup
<b>Evaporation rate</b>	0.49 (BuAc = 1) (Styrene)	None known
<b>Flammability Limit in Air</b>		
<b>Upper flammability limit:</b>	6.1% (Styrene)	
<b>Lower flammability limit</b>	1.1% (Styrene)	
<b>Vapour pressure</b>	6.7 hPa (Styrene) @ 20°C	None known
<b>Vapour density</b>	3.6 (Air = 1) (Styrene)	None known
<b>Specific Gravity</b>	1.1 ±0.03 @23°C	None known
<b>Solubility(ies)</b>	Insoluble (Water) Insoluble in water	None known
<b>Partition coefficient</b>	No information available	None known
<b>Autoignition temperature</b>	490°C (Styrene)	None known
<b>Decomposition temperature</b>	No information available	None known
<b>Viscosity</b>	900 - 1100 mPa.s @ 23°C	Brookfield Test Method
<b>Explosive properties</b>	No information available	
<b>Oxidising Properties</b>	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 temperature.

**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 (CO<sub>2</sub>). Thermal decomposition can lead to release of irritating and toxic gases and vapours.**11. TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects****Acute toxicity****Styrene**

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

**Inhalation**

Harmful by inhalation. May cause irritation of respiratory tract. Inhalation of high vapor concentrations can cause central nervous system depression and narcosis.

**Ingestion**

Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

<b>Skin Contact</b>	Causes skin irritation. Prolonged skin contact may defat the skin and produce dermatitis. May cause sensitisation by skin contact.
<b>Eye Contact</b>	Irritating to eyes.
<b>Irritation</b>	Irritating to eyes and skin.
<b>Corrosivity</b>	Not corrosive.
<b>Sensitisation</b>	Not sensitizing. May cause sensitization of susceptible persons by skin contact.
<b>Carcinogenic Effects</b>	There is no convincing evidence that styrene possesses significant carcinogenic potential in humans.
<b>Repeated dose toxicity</b>	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.
<b>Mutagenic effects</b>	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.
<b>Target organ effects</b>	Liver, Central nervous system (CNS), Respiratory system.

#### Numerical measures of toxicity - Product Information

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

<b>ATEmix (oral)</b>	8379 mg/kg
<b>ATEmix (dermal)</b>	3880 mg/kg
<b>ATEmix (inhalation-vapour)</b>	25 mg/l

## 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects:** .

#### **Styrene**

Algae/aquatic plants	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 EC50 3.3 - 7.4 mg/L (Daphnia magna) (48h)
Aquatic Invertebrates	

#### **Cobalt bis(2-ethylhexanoate)**

Algae/aquatic plants	EC50 = 0.639 mg/L
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### 12.2. Persistence and degradability

No information available

#### **Styrene**

Biodegradation	Inherently biodegradable
abiotic degradation	Half-life 7.4 hours

#### **Cobalt bis(2-ethylhexanoate)**

Biodegradation	Readily biodegradable (60% after 10 days)
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### 12.3. Bioaccumulative potential

Not likely to bioaccumulate

#### **Styrene**

Partition coefficient	2.95
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Bioconcentration factor (BCF) 13.5 fish

#### 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, bio-accumulating nor toxic (PBT) 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 Number	UN1866
UN proper shipping name	RESIN SOLUTION
Transport hazard class(es)	3
Packing Group	III
Environmental hazard	None
Classification Code	F1
Hazard identification number (Kemler No.)	30
Tunnel restriction code	D/E

#### IMDG/IMO

UN Number	UN1866
Proper shipping name	RESIN SOLUTION
Transport hazard class(es)	CLASS 3
Packing Group	PG III
Environmental hazard	None
EmS-No.	F-E, S-E

Transport in bulk according to Annex II of MARPOL and the IBC Code

No information available

#### IATA

UN Number	UN1866
Proper shipping name	RESIN SOLUTION
Transport hazard class(es)	3
Packing Group	III
Environmental hazard	None
Packing Instructions	355; 366

15. REGULATORY INFORMATION
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**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**

Chemical Name	Status
Styrene (CAS #: 100-42-5)	Present
Cobalt bis(2-ethylhexanoate) (CAS #: 136-52-7)	Present (Cobalt compounds)

**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

Chemical Name	Carcinogen	Mutagenic	Reproductive toxicant
Styrene (CAS #: 100-42-5)			Development Category 2

No information available

**Water Hazard Class**

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

**International Inventories**

**TSCA Inventory Status:** Not listed on TSCA.

**Canadian Inventory Status:** This material contains components that are NOT listed on the Canadian Domestic Substances List (DSL).

**Australian Inventory Status:** This product contains one or more chemicals currently not on the Australian Inventory of Chemical Substances.

**Korean Inventory Status:** This product contains one or more chemicals currently not on the Korean Chemical Substances List.

**Philippine Inventory:** This product contains one or more chemicals currently not on 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 one or more chemicals currently not on the New Zealand Inventory of Chemicals.

**Product Registrations**

Norway

Not applicable

<b>16. OTHER INFORMATION</b>
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**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

**Full text of H-Statements referred to under section 3**

H335 - May cause respiratory irritation  
H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H361d - Suspected of damaging the unborn child  
H332 - Harmful if inhaled  
H226 - Flammable liquid and vapour  
H412 - Harmful to aquatic life with long lasting effects  
H317 - May cause an allergic skin reaction  
H400 - Very toxic to aquatic life  
H360Fd - May damage fertility. Suspected of damaging the unborn child  
H372 - Causes damage to hearing through prolonged or repeated exposure if inhaled

**Key literature references and sources for data**

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

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**End of Safety Data Sheet**