

## 1. IDENTIFICATION OF PREPARATION & OF COMPANY

Product:	Vinyl Ester Resin
Manufacturer:	Chemco International Ltd East Shawhead Industrial Estate Coatbridge ML5 4XD Scotland United Kingdom
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## 2. COMPOSITION INFORMATION ON INGREDIENTS

Chemicals	Classification	Risk phrases
Styrene monomer	Xi, Xn	R10, R20, R36, R38

## 3. HAZARDS IDENTIFICATION

Acute effects:	Flammable. Harmful by inhalation. Irritating to eyes and skin.
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## 4. FIRST AID MEASURES

Inhalation:	Move to fresh air if effects occur. Seek medical attention. Immediately give plenty of water (if possible charcoal slurry). Seek medical attention immediately. Do not induce vomiting. Fully trained personnel can use oxygen or artificial respiration if required.
Ingestion:	
Eyes:	Rinse with flowing water immediately for at least 15 minutes. Seek medical attention.
Skin:	Remove contaminated clothing. Flush with flowing water for at least 15 minutes. Wash affected area with soap and water. Seek medical attention if irritation persists. Launder clothes before use.

## 5. FIRE-FIGHTING MEASURES

Extinguishing media:	Water spray, dry powder, foam, carbon dioxide.
Hazardous decomposition products:	Burning produces obnoxious and toxic fumes. Carbon oxides.
Specific fire or explosion hazards:	Do not release chemically contaminated water into drains, soil or surface water.
Special fire-fighting protection:	Wear self-contained breathing apparatus and full protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Do not breathe vapours/dust. Keep away from sources of ignition. No smoking. Avoid contact with skin, eyes and clothing.
Environmental precautions:	Avoid subsoil penetration. Prevent product from entering drains. Do not contaminate surface water.
Methods for cleaning up:	For large amounts, dike spilled product with liquid absorbing material and pump off. For smaller amounts, soak up with inert absorbent material such as sand and dispose of as hazardous waste.

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## 7. HANDLING & STORAGE

Handling:	Provide sufficient air exchange and/or exhaust in work rooms. Ensure adequate ventilation. Handle and open container with care.
Storage:	Avoid direct sunlight and keep resin temperature below 25°C. (Polymerisation may be initiated at a resin temperature of >28°C). Keep away from food, drink and animal feeding stuffs. Keep container tightly closed and store at room temperature.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Technical measures/controls:	Adequate ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.
Exposure controls:	Do not breathe vapours. Ensure atmospheric levels are maintained below exposure guidelines. Use an approved air-purifying respirator when required for specific operations.
Exposure limits:	Maximum: LTEL 100ppm. STEL 250ppm.
Respiratory protection:	Normally not required. Wear self-contained breathing apparatus when spraying.
Eye protection:	Chemical safety glasses, splash-proof eye goggles with a full-face shield. Contact lenses should not be worn.
Skin/body protection:	Protective suit, rubber or plastic gloves and safety shoes.
Hand protection:	Nitrile rubber gloves or butyl rubber gloves. Gauntlet type.
Protective measures:	Keep away from sources of ignition. No smoking. Avoid contact with skin, eyes and clothing.

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## 9. PHYSICAL & CHEMICAL PROPERTIES

Physical state:	Viscous liquid.
Colour:	Straw yellow.
Odour:	Pungent styrene odour.
Boiling point:	146°C (styrene).
Flash point:	35°C (ASTM 3278/ISO 3679).
Specific gravity:	1.025 - 1.075
Flammability:	LFL 0.88. UFL 6.80 (styrene).
Autoignition temperature:	Base - 490°C (styrene).
Vapour pressure:	7mmHg
Solubility:	Insoluble.
Density:	3.6 (styrene).

## 10. STABILITY & REACTIVITY

Chemical stability:	Stable under normal storage conditions.
Materials to avoid:	Strong acids, bases and oxidising agents.
Conditions to avoid:	Avoid direct sunlight and keep resin temperature below 30°C. Polymerisation may be initiated at a resin temperature of > 28°C. Take necessary action to avoid static electricity discharge.
Hazardous decomposition products:	Burning produces obnoxious and toxic fumes. Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

Acute toxicity:		
Oral LD50:	> 4,000mg.kg	(rat).
Acute toxicity (irritation, sensitisation, etc):		
Eye:	Irritating.	(rabbit).
Skin:	Irritating.	(dermal-rabbit).
Sensitisation:	Causes sensitisation (dermal-guinea pig).	

## 12. ECOLOGICAL INFORMATION

The base resin is expected to be relatively stable in the environment.  
The following information is applicable to the styrene component:

Ecotoxicity:	Material slightly toxic to fish on a static acute basis, ie. LC50 for fish is 10 - 100mg/l. Static acute LC for daphnids (Daphnia magna) is 255mg/l. Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100mg/l).
Partitioning:	Log air/water partition coefficient (log Kaw) is 3.06. Log soil organic carbon partition coefficient (log Koc) is 2.84. Potential for mobility in soil is low (Koc = 500 - 2000).
Degradation:	Biodegradation reached in closed bottle test after 20 days is 53.9%. Degradation is expected in the soil environment within days to weeks.
Additional ecological information:	Avoid subsoil penetration. Do not let product enter drains. Do not contaminate surface water.

## 13. DISPOSAL CONSIDERATIONS

Product:	Resin may be disposed of through burning in an adequate incinerator or burying in an approved landfill in accordance with local regulations.
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## 14. TRANSPORT INFORMATION

Proper shipping name: Resin solution

Road, Rail & Barge  
ADR/RID Loaded: 3-31(C) Empty: 3-41 Label : 3  
Barge ADNR Loaded: 3-3 Empty: 3-6 Label : 2A  
Kemler Code: 30 PENOS Code: S  
Trem Card No: CEFIC 30GF1-III Classification code: F1  
UN No: UN 1866 Packing Group: III

Sea  
IMO/IMDG Class: 3 Label: 3  
EMS: 3-05 MFAG: 310  
Marine Pollutant: N Packing Group: III  
UN No: UN 1866

Air  
IATA/ICAO Class: 3 Packing Group: III  
UN No: UN 1866  
Packaging Instruction (Pass & Cargo): 309 Packaging Instruction (Cargo): 310

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## 15. REGULATORY INFORMATION

Chemical name: Contains styrene.  
Labelling: According to EEC directives relating to packaging and labelling of dangerous substances and UK Chemicals Hazard Information and Packaging for Supply (CHIPS) legislation.  
Symbols: (Xi) Irritant.  
Risk phrases: (Xn) Harmful.  
R10, Flammable.  
R20, Harmful by inhalation.  
R36/38, Irritating to eyes and skin.  
Safety phrases: S23, Do not breathe vapours.  
S51, Use only in well ventilated areas.

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## 16. OTHER INFORMATION

The information contained in this data sheet is based on present state of knowledge and current national legislation (CHIPS). It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for the particular applications.