MATERIAL SAFETY DATA SHEET

161 Voortrekker Road, Maitland,
Cape Town, 7405, South Africa
Tel: +27 21 511 3926
Email: info@alliedfibreglass.co.za
Website: www.alliedfibreglass.co.za

1. PRODUCT IDENTIFICATION / NAME

Product Name	Clear Polyester Casting Resin
Other Means of Identification	Unsaturated Polyester Resin
Recommended Use	In manufacture of filled or reinforced plastics composites.
Uses Advised Against	No Information Available
Emergency Telephone Number	+27 21 511 3926
Health Emergency Number	0861 555 777
Haz Chem Emergency Number	+27 11 331 2947

2. COMPOSITION / INFORMATION ON INGREDIENTS

Product Type	Resin Solution
Substance / Mixture	No Information Available
Chemical Family	Styrene
Formula	No Information Available
UN No.	1866
Erg No.	No Information Available
Hazchem Code	3[Y]
EAC	No Information Available
Synonyms	Resin Solution
Hazardous Components	Styrene, Polyester

3. HAZARDS IDENTIFICATION

Component	CAS No.	Proportion	Threshold Limit Value
Styrene	100-42-5	38%	50ppm
Polyester		62%	

4. FIRST-AID MEASURES

First Aid Skin	Irritant. Wash thoroughly with soap and water. Remove contaminated clothing and launder before re-use. Seek medical advice if irritation persists.
First Aid Eyes	Irritant. Flush with copious amounts of water - lift eyelids repeatedly. Seek medical attention.
First Aid Ingested	Harmful if swallowed. Single dose oral toxicity is low. Do not induce vomiting. Aspiration of material into the lungs could cause pneumonitis which can be fatal. Give milk or water. Seek medical attention.
First Aid Inhalation	Harmful. Effects may include headache, nausea, fatigue, central nervous system depression, pulmonary oedema. May be irritating to nose, throat and respiratory tract. Move victim to fresh air. Apply artificial respiration or give oxygen if necessary. Seek medical attention.

5. FIREFIGHTING MEASURES

Flammable Liquid. 3.1C Flammable Limits: LEL 1.1% UEL 6.1%
Flash Point: 31°C (Setaflash) Hazchem Code 3[Y]
EXTINGUISHING MEDIA: Foam, carbon dioxide, dry powder, water fog.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Styrene will polymerise at elevated temperatures. If this occurs in a closed container there is risk of violent rupture.
SPECIAL FIREFIGHTING PROCEDURES: Fight like a fuel-oil fire. Water used in fire-fighting should not be allowed to enter drainage systems or contaminate soil.

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken if the material is released or spilled:
Eliminate all sources of ignition (flames, hot surfaces, electrical, static or frictional sparks). Ventilate area.
Dyke area of spill and pump material into drums for use or disposal. Absorb remainder on sand or perlite and place the saturated absorbent into closed containers for disposal. Prevent contamination of storm-water drains.
Waste disposal method: Destroy by liquid incineration with off-gas scrubber. Contaminated absorbent to be incinerated or deposited in secure landfill in accordance with appropriate regulations.
Liquid material mixed with peroxide initiators should be allowed to gel before disposal as solid waste in accordance with appropriate regulations.

7. HANDLING AND STORAGE

Avoid inhalation of vapour and contact with skin, eyes and clothing. Launder contaminated clothing before re-use. Wash hands thoroughly before eating. Ground (earth) all connections and containers when using above flash point. Store in a bunded area or approved flammable goods store away from direct heat (ideally below 27° C to prevent spoilage). Keep containers closed when not in use. Open drums slowly in case of internal pressure.
Isolate from all potential sources of ignition including flames and electrical sparks.
Store separate from oxidising materials, peroxides and metal salts.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupation Exposure Limits	Styrene 50ppm
Controls	Use general dilution or local exhaust ventilation to maintain vapour concentration below WES level. If concentrations exceed exposure limit use organic vapour canister mask or approved air-line mask.
Personal Protection	Skin Protection: Wear overalls or other work clothing providing arm and leg cover. Use protective gloves (PVC). Eye Protection: Safety goggles or splash mask.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, cloudy or coloured viscous liquid.
Physical State	Liquid
Colour	Clear, cloudy or coloured
Odour / Odour Threshold	Sweet or sharp aromatic odour of styrene.
pH	No information available
Melting Point	No information available
Boiling Point / Boiling Range	No information available
Flash Point	31°C
Evaporation Rate	No information available
Flammability (solid, gas)	
Lower Flammable Limit	1.1%
Upper Flammable Limit	6.1%
Vapour Pressure	No information available
Vapour Density	No information available
Density	No information available
Water Solubility	No information available
Partition Coefficient: N	
Octanol / Water	No information available
Auto-Ignition Temperature	No information available
Decomposition Temperature	No information available

9. PHYSICAL AND CHEMICAL PROPERTIES (Continued)

Decomposition Temperature	No information available
Viscosity, Dynamic	No information available
Explosive properties	
Explosivity	No information available
Oxidizing Properties	No information available
9.2 Other Information	
Solubility in Other Solvents	No information available
Freezing Point	No information available
Specific Gravity	1.1 – 1.7
Percent Volatiles	25-55w/w
Water Miscibility:	Immiscible

10. STABILITY & REACTIVITY

Stability	Potentially unstable - may polymerise producing heat if stored incorrectly.
Conditions to Avoid	Exposure to sunlight, open flames, contamination and prolonged storage above 27°C.
Incompatible Materials to Avoid	Strong acids, peroxides, other oxidising agents, transition metals e.g. copper and zinc, their alloys and galvanised items.
Hazardous polymerisation	May occur as result of high temperature or contamination. If burned, these products will evolve black, acrid smoke along with carbon monoxide, carbon dioxide and various organic compounds.

11. TOXICOLOGICAL INFORMATION

When used under properly controlled conditions, within workplace exposure limits and with adequate protective equipment, no adverse health effects are to be expected.
Acute effects of over exposure:
If Swallowed: Harmful by ingestion. Possible irritation of mucous membranes, nausea, vomiting and gastric disturbance. Possible depression of central nervous system. Aspiration into lungs could cause pneumonitis which may damage lungs or may be fatal.
Eye Contact: Mild to moderate irritation. Reddening may occur if exposure is prolonged.
Skin Contact: Irritant. May cause itching and redness of skin.
Inhalation of Vapour: May cause headaches, nausea, irritation of the respiratory tract and depression of the central nervous system.
Chronic effects of overexposure:
Mild dermatitis may result from prolonged or repeated skin contact. Styrene can be absorbed through the skin. Excessive exposure to the liquid material or vapour may affect the central nervous system, the liver, kidneys and respiratory system.

12. ECOLOGICAL INFORMATION

Prevent these products from entering storm-water drains sewers or waterways.
Styrene is the major contaminant hazard in these formulations and it will undergo slow (but near complete) biodegradation in contact with soil. Styrene vapour degrades rapidly in the atmosphere.
Styrene floats on water and will vaporise and biodegrade.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Small quantities of these products may be mixed with appropriate amounts of polymerisation initiators and allowed to solidify before disposal as solid waste.
Recover or recycle if possible.
This material and its container must be disposed of as hazardous waste.
Any disposal must comply with applicable local and national government regulations. Ensure that these materials do not enter drains, sewers or waterways.

14. TRANSPORT INFORMATION

UN No.	1866
EAC	No information available
IMDG Code	No information available
Marine Pollutant	Yes
Class	Class 3
Subsidiary Risks	No information available
Tremcard Number	No information available
Hazchem Code	3[Y]
ERG No.	No information available
IMDG Packaging Group	111

15. REGULATORY INFORMATION

These products are hazardous goods approved by the National Environmental Authority (Singapore) under the Group Standard for Additives, Intermediates, Process Chemicals, Raw Materials.

The information and recommendations presented on this data sheet are to the best of our knowledge and belief accurate and reliable, but do not constitute a warranty. None of our representatives or agents are authorized to give any guarantee or warranty or make any representation in addition or contrary to the above.

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