مـصـنـع لـفـان لإنـتـاج الـرزن
LAFFAN RESIN PRODUCTION FACTORY

Safety Data Sheet (SDS)

1 Identification of the Substance/Preparation and of the Company/Undertaking

Product Name: THIXOTROPIC ISOPHTHALIC POLYESTER RESIN

Product Code: LRPOL022- 491

Manufacturer / Supplier: **LAFFAN RESIN PRODUCTION FACTORY**

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2 Hazards Identification

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification: Harmful
R10- Flammable
R20- Harmful by inhalation
R36/38- Irritating to eyes and skin.

See section 11 for more detailed information on health effects and symptoms.

3 Composition, and Information on Ingredients

Substance / Preparation: Preparation

Chemical Characterization: Unsaturated Polyester resin dissolved in styrene.

Ingredient Name	CAS Number	% by weight	EC Number	Classification
Styrene	100-42-5	30 – 45	202-851-5	R10 Xn; R20 Xi; R36/38

4 First Aid Measures

Inhalation	Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be. harmful. Symptoms usually occur at air concentrations below the recommended exposure limits, if applicable (see Section 8)
Ingestion	Swallowing small amounts of this material during normal handling is not likely to cause. harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.
Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water, occasionally lifting the upper andlower eyelids. Continue to rinse for at least 10 minutes. Get medical attention.
Skin Contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for atleast 10 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

First Aid Measures
See section 11 for more detailed information on health effects and symptoms.

5 Fire Fighting Measures

Extinguishing Media	SMALL FIRE: Use dry chemical powder. LARGE FIRE: Use water spray or fog. Never direct a water jet into the container in order to prevent any splashing of the product, which could cause the fire to spread. Cool containers with water jet in order to prevent pressure build-up, auto-ignition or explosion.
Suitable	Use dry chemical, CO2, water spray (fog) or foam.
Not Suitable	Do not use water jet.
Special Exposure Hazards	Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors 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. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire exposed containers cool.
Thermal Decomposition Products	Decomposition products may include the following materials: carbon oxides halogenated compounds
Protection Of Firefighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 Accidental Release Measures

Personal Precautions	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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear an appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
Environmental Precautions	Avoid dispersal of spilled 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).
Methods For Cleaning Up	Stop leaking without risk. Move containers from spill area. Approach 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 spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
See Section 8 for personal protective equipment and Section 13 for waste disposal.	

7 Handling & Storage

Handling	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. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin, and clothing. 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 no sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Handling & Storage	
Storage	Store between the following temperatures: 10 to 27°C (50 to 80.6°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool, and well-ventilated area, away from incompatible materials (see section 10) and food and drink. 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 it in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Packaging Materials Recommended	Use original IBC, Drums and Container/Tanker.

Note: Store at temperatures below 25°C. Storage life decreases with increasing storage temperature. Avoid exposure to heat sources, such as direct sunlight or steam pipes. Keep containers sealed to prevent moisture pickup and monomer loss. Rotate stock. Bulk should be stored in stainless steel tanks, or in tanks lined with epoxy or phenolic coatings. Observe precautions against heat and moisture (see above). An oxygen or dry air spurge may be desirable to keep inhibitors activated.

8 Exposure Controls & Personal Protection

Ingredient Name	Occupational Exposure Limits
Styrene	ACGIH TLV (United States, 1/2006). Skin
	STEL: 170 mg/m³ 15 minute(s)
	STEL: 40 ppm 15 minute(s)
	TWA: 85 mg/m³ 8 hour(s)
	TWA: 20 ppm 8 hour(s).
Notes:	TWA=Time Weighted Average, STEL=Short Term Exposure Limit Where there is no reference to the national regulations, other limits (Europe or US) may be given.

Exposure controls	
Engineering Measures	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, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
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.

Personal Protective Equipment	
Respiratory Protection	Use a properly fitted, air purifying or air fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hand Protection	Recommended: polyvinyl alcohol (PVA).
Eye Protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Skin Protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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9 Physical and Chemical Properties

Physical State	Liquid. [Clear.]
Color	Pinkish
Odor	Pungent
Boiling Point	295°F/ 145°C @760.00 mmHg
Melting Point	Not Available
Density	1.15 g/cm @ 77.00°F/25.00°C 9.15 lb/gal @77.00°F/25.00°C
Flash Point	90°F/ 32°C
Vapor Density	(>) 1 (Air=1)
Evaporation Rate	1 (Ethyl Ether)
Explosion Limits	No Data
Vapor Pressure	No Data
Solubility	Insoluble in water
Viscosity	Dynamic: 400 To 600 Mpa·S (400 To 600 Cp)
	Kinematic: 3.75 To 5.75 Cm2/S (375 To 575 Cst)

10 Stability and Reactivity

Stability	Hazardous polymerization may occur under certain conditions of storage or use.
Conditions To Avoid	Exposure to heat, direct sunlight, UV-light, etc
Materials To Avoid	Reactive or incompatible with the following materials: oxidizing materials. Slightly reactive or incompatible with the following materials: acids and alkalis, peroxides, metal salts [such as aluminum chloride, Iron (III) chloride].
Thermal Decomposition Products	Decomposition products may include The following materials: carbon oxides, halogenated compounds

11 Toxicological information

Potential Acute Health Effects				
Inhalation	Harmful by inhalation			
Ingestion	Irritating to mouth, throat and stomach			
Skin contact	Irritating to skin			
Eye contact	Irritating to eyes			
Acute toxicity	No data available			
Ingredient name	**Test**	**Species**	**Results**	**Exposure**
Styrene	LD50	Rat	898 mg/kg	
	Intraperitoneal	Rat		
	LD50 Oral	Rat	2650 mg/kg	
	LD50 Oral	Rat	5000 mg/kg	
	LC50 Inhalation	Rat	12000 mg/m³	4 hours

Toxicological information	
Potential Chronic Health Effects	
Chronic Effects	No known significant effects or critical hazards.
Carcinogenicity	No known significant effects or critical hazards.
Fertility Effects	No known significant effects or critical hazards.

Overexposure Signs/Symptoms	
Skin Contact	Adverse symptoms may include the following: Irritation, redness.
Eye Contact	Adverse symptoms may include the following: irritation, watering, redness.
Target Organs	Contains material which causes damage to the following organs: lungs, the reproductive system, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

12 Ecological Information

Environmental Effects	Not readily biodegradable

Ecotoxicity Data Aquatic Ecotoxicity: Acute Toxicity

Ingredient Name	Species	Period	Result
Styrene	Selena strum	48 hour(s)	0.56mg/l
	Capricornus(EC50)	48 hour(s)	4.7 mg/l
	Daphnia magna (EC50)	96 hour(s)	4.02 mg/l
	Pimephales promelas (LC50	96 hour(s)	10 mg/l
	Lepomis Macrochirus(LC50)	96 hour(s)	25.05 mg/l
	Pimephales promelas (LC50)	96 hour(s)	29 mg/l

Other Ecological Information

Persistence/Degradability			
Ingredient Name	**Aquatic Half-life**	**Photolysis**	**Biodegradability**
Isophthalic Polyester Resin	--	--	Not readily

Bio accumulative potential			
Ingredient name	**Log Pow**	**BCF**	**Potential**
Styrene	2.95	13.5	Low
AOX	The product contains organically bound halogens and can contribute to the AOX value in wastewater.		

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13 Disposal Considerations

Methods of disposal	The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers
European waste catalogue (EWC)	07 02 99
Hazardous waste	Yes
Additional information	07 02 00 wastes from the MFSU of plastics, synthetic rubber and man-made fibers

14 Transport Information

Road/Railway [ADR/RID Classification]	
UN Number	UN1866
Proper Shipping Name	Resin Solution
Adr/Rid Class	3
Packing Group	III
Adr/Rid Label	
Other Information	
Hazard Identification Number	30
Limited Quantity	LQ7
Cefic Tremcard	30GF1-III
Remarks	Special provisions for transport 640 E

Sea [IMO/IMDG Classification]	
UN Number	UN1866
Proper Shipping Name	RESIN SOLUTION
Environmental Hazard	Marine Pollutant
IMDG Class	3
Packing group	III
IMDG Label	

15 Regulatory Information

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and consider the intended product use.

Product Use	Industrial applications

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Regulatory Information	
EU Regulations	
Hazard Symbol Or Symbols	
Risk Phrases	R10- Flammable, R20- Harmful by inhalation
	R36/38- Irritating to eyes and skin

Regulatory Information	
Safety Phrases	S16- Keep away from sources of ignition - No smoking.
	S23- Do not breathe vapor.
	S33- Take precautionary measures against static discharges.
	S51- Use only in well-ventilated areas.
Contains	Styrene 202-851-5
Tactile Warning Of Danger	Not applicable

16 Other information

Full text of R-phrases referred to in Sections 2 and 3 [Europe]:

R10- Flammable\
R20- Harmful by inhalation
R36/38- Irritating to eyes and skin

Full text of classifications referred to in Sections 2 and 3 [Europe]:

Xn – Harmful
Xi - Irritant

Label Code: R100E

Date of issue	
Date of printing	
Date of previous issue	No previous validation.
Prepared by	

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