



TECHNICAL DATA SHEET

TROPICAL CLIMATES GRADE ISOPHTHALIC RESIN LRPOL022-FG500

General Description:

LRPOL022-FG500 is a versatile medium reactive isophthalic acid based polyester resin, suitable for high performance lamination applications. It is free from phthalate (Plasticizer). This resin exhibits excellent chemical and weather resistance along with good mechanical and electrical properties.

Chemical Resistance:

Castings of **LRPOL022-FG500** show a good resistance to most acids at ambient temperature. It resists petroleum products, oils, salt solution etc. It shows poor resistance towards strong oxidising acids and alkalies.

LRPOL022-FG500 has good storage stability for transporting to tropical climates and the handling characteristics are suited to use in ambient temperatures up to 35°C.

Castings of **LRPOL022-FG500** shows better dry heat stability than orthophthalate resins.

Application

LRPOL022-FG500 Tropical Climates Grade Polyester Resin can be used for the manufacture of glass fiber Reinforced process equipment, storage tanks, transport tankers, pipelines, lining Works etc. used in the Food and Pharmaceutical Industries. Post curing at 90°C for Three hours is essential for such applications.

Moulding Information:

- Hand lay up
- Spray up
- Filament Winding
- Lamination

Typical Properties for LRPOL022-FG500:

Table 1: Specification of Liquid Resin				
No.	Property	Test Method	Unit	Value
1	Viscosity at 25°C (LV2 , Rpm 30 , 60sec)	ISO 2555:2018	mPa.s	450-550
2	Appearance	-	-	Light straw/ Clear
3	Density at 23°C	ISO 1675:2022	g/mL	1.1-1.16
4	Acid Value	ISO 2114:2000	mg KOH/g	10-15
5	Non-volatile-matter content	ISO 3251:2019	%	Min 58-62%
6	Gel Time @ 25°C	ASTM D2471-99 ISO 2535:2001	Minutes	10-14
7	Gel to Peak Time		Minutes	8-12
8	Peak Exothermic Temperature		°C	180-200

Note : Properties can be adjusted based on the customer's requirements.

Contacts us:

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No.	Property	Test Method	Unit	Value
1	Tensile Strength	ISO 527-1:2019 ISO 527-2: 2012	MPa	Min 79
2	Tensile Modulus		MPa	Min 3600
3	Elongation at break		%	Min 4
4	Flexural Strength	ISO 178:2019	MPa	Min 130
5	Flexural Modulus		MPa	Min 3600
6	Barcol Hardness	ASTM D 2583-13a (934-1)	-	Min 42
7	Water absorption 24h at 23°C		mg	18
8	Glass Transition Temperature		°C	90
9	Heat Deflection Temperature † (1.80 MPa)	ISO 75-1:2020 ISO 75-2:2013	°C	Min 80

Note :Properties can be adjusted based on the customer's requirements.

Shelf life and Storage:

To ensure maximum stability and maintain resin properties within the desirable range, UPR should be stored in closed containers at temperatures below 25 °C, and away from heat sources such as, but not limited to, direct sunlight, steam pipes or furnaces. Under proper storage conditions the minimum shelf-life performance is estimated at six months, provided that the product is stored in the original, unopened container. Shelf life decreases with increasing storage temperature, or when it is kept near a heat source or direct sunlight.

Typical Curing Characteristics and Recommendations

Resin (g)	Accelerator	Catalyst	Temperature °C	Gel Time minutes	Peak Exothermic
100g	Cobalt octoate 6% :- 0.4%	Butanox M50/60 1.5%	25 °C	10-14	180°C - 200°C

Note :Properties can be adjusted based on the customer's requirements.

LRPOL022-FG500 should be processed at room temperature (18-25°C) . Lower temperature have an adverse effect om proper curing . Especially when stored in the presence of air ,there may be an increase in the gel time ,although this can be compensated by increasing the amount of curing agent.

Standard Packaging:

The standard packaging available are standard intermediate bulk containers (IBC), 220 kg stainless steel drums and trailer tanks. However, UIPR can be packaged in different quantities. as per the request of the customer.

Dot Label Required: Flammable Liquid

Precaution for handling:

Laffan Resin Production Factory (LRPF) maintains and regularly updates the Material Safety Data Sheet (MSDS) of all its products. All supervisory personnel and employees expected to be working with the resin must be provided with the MSDS. Due attention should be given to the precautions for handling chemicals provided in the MSDS prior to any use of this product.

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