



TECHNICAL DATA SHEET

FIRE RETARDANT POLYESTER RESIN LRPOL022-FR

General Description:

Flame Retardant polyester resin (**LRPOL022-FR**) is a filled, Isophthalic, Pre - Promoted , unsaturated polyester resin used for fire retardant application.

Applications and Uses:

LRPOL022-FR has been designed for manufacturing composite parts by hand lay up / injection process. Due to its excellent fire resistance the product can be used in demanding applications such as building, public transport and railways. The resin has fire retardant fillers and must be stirred before use.

Features and Benefits

LRPOL022-FR complies with UL-94 V-O/ASTM E84 Class 1 Flame .

Features	Benefits
Low viscosity	Rapid impregnation Lower consumption Suitable for RTM processes
Low styrene content	Better comfort for the workers
Excellent Q rating (0,53)	Safety factor to achieve M1 laminates
Very stable	Low filler sedimentation

Moulding Information:

- Hand lay up
- Spray up

Typical Properties for LRPOL022-FR:

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	700-1000
2	Density at 23°C	ISO 1675:2022	g/mL	1.3-1.5
3	Acid Value	ISO 2114:2000	mg KOH/g	15-25
4	Non-volatile-matter content	ISO 3251:2019	%	Min 60%
5	Gel Time @ 25°C	ASTM D2471-99 ISO 2535:2001	Minutes	10-20
6	Gel to Peak Time		Minutes	10-15
7	Peak Exothermic Temperature		°C	140-190

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 50
2	Tensile Modulus		MPa	Min 4500
3	Elongation at break		%	Min 1.4
4	Barcol Hardness	ASTM D 2583-13a (934-1)	-	Min 45
5	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, FR 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 three 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)	Catalyst	Temperature °C	Gel Time minutes	Peak Exothermic
100g	Butanox M50/60 1% - 2%	25 °C	10-20	140°C - 190°C

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

LRPOL022-FR 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. However, FR Resin 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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