



# TECHNICAL DATA SHEET

## UNSATURATED ISOPHTHALIC POLYESTER RESIN LRPOL022-ISO

### General Description:

Unsaturated isophthalic polyester resin (LRPOL022-ISO) is a non-promoted medium viscosity, excellent fiber wet out, resilient isophthalic polyester resin. It exhibits higher tolerance to heat, moisture, and chemical corrosion resistance as well as higher tensile properties when compared with general-purpose resins.

### Applications and Uses:

Isophthalic polyester resin is used in the following manufacturing process:

- Chemical Tanks / Pipelines
- GRP, FRP and RTRP Pipes
- Chemical equipment
- Boat and Duct
- Pultrusion for FRP Products
- Construction of other items with high structural performance
- FRP Tanks
- Pultrusion products
- Electrical Products
- Gelcoats base .

### Moulding Information:

- Hand lay up
- Spray up
- Filament Winding

### Typical Properties for Isophthalic Resin:

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	300-500
2	Density at 23°C	ISO 1675:2022	g/mL	1.1-1.16
3	Acid Value	ISO 2114:2000	mg KOH/g	15-25
4	Non-volatile-matter content	ISO 3251:2019	%	Min 55%
5	Gel Time @ 25°C	ASTM D2471-99 ISO 2535:2001	Minutes	10-20
6	Gel to Peak Time		Minutes	6-14
7	Peak Exothermic Temperature		°C	170-210

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 70
2	Tensile Modulus		MPa	Min 3500
3	Elongation at break		%	Min 3
4	Flexural Strength	ISO 178:2019	MPa	Min 120
5	Flexural Modulus		MPa	Min 3500
6	Barcol Hardness	ASTM D 2583-13a (934-1)	-	Min 40
7	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% :- 0.15% -0.30%	Butanox M50/60 1% - 2%	25 °C	10-20	170°C - 210°C
100g	Cobalt octoate 1% :- 1% - 2%	Butanox M50/60 1% - 2%	25 °C	10-20	170°C - 210°C

LRPOL022-ISO should be processed at room temperature (18-25°C). Lower temperature have an adverse effect on 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, UPR 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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