



TECHNICAL DATA SHEET

BIS-PHENOL A EPOXY BASED VINYL ESTER RESIN LRPOL022-V

General Description:

Bis-Phenol A Epoxy Based Vinyl Ester Resin (**LRPOL022-V**) is a non-promoted medium viscosity , it is a Bis-Phenol A Epoxy based resin formulated for maximum corrosion resistance to most chemicals and it is heat resistant. It's also displayed excellent mechanical properties like high impact strength and tensile elongation .

Applications and Uses:

LRPOL022-V has excellent adhesion with high corrosion resistance and high resistance to heat during the time of service. Besides, the high performance of LRPOL022-V against acids and alkalies make it suitable for producing chemical tanks, equipment production for chemical industry, electrolyze cups. And coverings or linings against corrosion with confidence.

LRPOL022-V provides a high flexibility with high mechanical resistance properties. Owing to these properties LRPOL022-V is used to produce machines and electrical parts, windsurf, speed craft, race vessel, big ships parts and constructions subjected to high static and dynamic loads when reinforced by fiberglass.

Because of the high resistance of LRPOL022-V , it can be used in any field where there is contact with water, like producing hot water and sun collectors, boiler tanks, thermal bath equipment, fishery pools, ship-building.

Moulding Information:

- Hand lay up
- Spray up
- Filament Winding

Typical Properties for Vinyl ester 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	350-600
2	Density at 23°C	ISO 1675:2022	g/mL	1.04-1.06
3	Acid Value	ISO 2114:2000	mg KOH/g	Max. 12
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	150-210

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

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No.	Property	Test Method	Unit	Value
1	Tensile Strength	ISO 527-1:2019 ISO 527-2: 2012	MPa	80-90
2	Tensile Modulus		MPa	3200-3500
3	Elongation at break		%	5-6
4	Flexural Strength	ISO 178:2019	MPa	125-152
5	Flexural Modulus		MPa	3300-3800
6	Barcol Hardness	ASTM D 2583-13a (934-1)	-	45
7	Heat Deflection Temperature † (1.80 MPa)	ISO 75-1:2020 ISO 75-2:2013	°C	100-112

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, Vinylester 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% :- 0.25% -0.50%	Butanox M50/60 1.5% - 2.5%	25 °C	10-20	170°C - 210°C

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

LRPOL022-V 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, vinyl ester 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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