Technical Data Sheet / Unsaturated Vinyl Ester Resin

General Description:

Vinyl ester Resin is a based on Bisphenol A – Epoxy Resin. It is formulated for maximum corrosion resistance to most chemicals, and it is heat resistant. It also displays excellent mechanical properties like high impact strength and tensile elongation.

Main Resin Characteristic:

- Low styrene emission
- Non thixotropic
- Non promoted

Applications:

Vinyl ester resins have a higher resistance to corrosive chemicals and environments than regular unsaturated polyesters, for this reason it is used in for the production of items which are subject to extremely severe conditions under high mechanical loads.

Moulding Information:

- Filament Winding
- Pultrusion for FRP Products

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Typical Properties for Isophthalic Resin:

Physical Data in Liquid State at 25°C

Properties	Unit	Value	Test Method
Viscosity	mPa·s	400-900	ISO 3219 / ISO 2884
Density	g/cm^3		ISO 1675 / ISO 2811
Acid Value	mg KOH/g	8-16	ISO 2114
Styrene Content			
Storage stability	Months	6	
Gel time	Min @ 25°C	8-13	ISO 2535
Appearance			

Typical non-reinforced casting properties

Properties	Unit	Value	Test Method
Tensile strength	MPa	60-80	ISO 527 / ASTM D638
Tensile elongation	%	3.5-6	ISO 527 / ASTM D638
Tensile modulus	MPa	2500-3500	ISO 527 / ASTM D638
Flexural strength	MPa	90-120	ISO 178 / ASTM D790
Flexural modulus	MPa	3000-4000	ISO 178 / ASTM D790
Heat deflection temp. (HDT)	°C	95-105	ISO 75-2 / ASTM D648
Barcol Hardness			EN 59 / ASTM D2583

Shelf life and Storage:

To ensure maximum stability and maintain resin properties, resins should be stored in closed containers at temperature below 25 °C and away from heat sources and direct sunlight. Minimum shell life performance is three months and that refers to the product in the original, unopened container. Storage life decrease with increasing storage temperature.

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Typical Curing Characteristics:

Resin=100 g

Cobalt 6%	Butanox M50	Temperature ºC	Gel Time minutes	Peak Exothermic
0.5 % - 2%	1% - 3%	25 ºC		

Cure Recommendation:

- It is recommended that gel time be checked in the customer's plant as age, temperature, humidity and initiator will produce varied gel time.
- The initiator level should not exceed 3.00% or fall below 1.00% for proper cure at 23 ºC.
- The product should not be used when temperature condition is below 18 ºC.
- The quantity of initiator and accelerator can be adjusted to get a shorter or longer geltime

Standard Packaging:

The standard packaging available are tanks, drums and trailer, however ortho resin can be packaged in different quantities according to the customer's request.

Precaution for handling:

Due attention should be given to the precautions for handling chemicals provided in our Material Data Sheet prior to any use of this product.

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