



Technical Data Sheet / Unsaturated Orthophthalic Polyester Resin

General Description:

Unsaturated Polyester Resin is an acid based resin with low viscosity, medium reactivity and gel time. It offers a cost and performance benefit with good mechanical properties.

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Main Resin Characteristic:

- Low styrene emission
- Non thixotropic
- Non promoted

Applications:

Due to its good overall handling and mechanical properties, ortho resin is used with great success in the following industrial applications:

- Polymer concrete products
- Tiles for roofs
- Bathrooms accessories
- Pipes
- Decorative works
- Tanks
- Tabletops

Moulding Information:

- Filament Winding
- Pultrusion for FRP Products
- Casting



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Typical Properties for Orthophthalic Resin:

Physical Data in Liquid State at 25°C

Properties	Unit	Value	Test Method
Viscosity	mPa·s	400-500	ISO 3219 / ISO 2884
Density	g/cm ³	1.10 ± 0.2	ISO 1675 / ISO 2811
Acid Value	mg KOH/g	16-28	ISO 2114
Styrene Content			
Storage stability	Months	6	
Gel time	Min @ 25°C	8-13	ISO 2535
Appearance			

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Typical non-reinforced casting properties

Properties	Unit	Value	Test Method
Tensile strength	MPa	40-60	ISO 527 / ASTM D638
Tensile elongation	%	1.5-2	ISO 527 / ASTM D638
Tensile modulus	MPa	2500-3500	ISO 527 / ASTM D638
Flexural strength	MPa	40-80	ISO 178 / ASTM D790
Flexural modulus	MPa	2000-3000	ISO 178 / ASTM D790
Heat deflection temp. (HDT)	°C	55-65	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 shelf 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 °C	Gel Time minutes	Peak Exothermic
0.5 % - 2%	1% - 3%	25 °C		

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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% or fall below 1.00% for proper cure at 23 °C.
- The product should not be used when temperature condition is below 18 °C.
- 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.