Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 121

Product Description

Farapol O 121 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has a low viscosity, low reactivity, good impregnation of fiberglass and good process abilities.

Applications and Use

Farapol O 121 in an Unsaturated polyester resin based on Orthophthalic acid is a cost-effective option for composite manufacturing processes such as Vacuum Infusion Process (VIP) and Resin Transfer Molding (RTM). While it is considered an economical choice, it delivers satisfactory performance for applications with moderate mechanical and chemical property requirements. This resin offers good fiber wet-out and moldability, making it a practical choice for large-scale production where cost-efficiency is a priority.

RTM and VIP Composite Parts: Suitable for producing lightweight components with good surface finishes and adequate structural integrity.

Automotive Parts: Used in non-critical components like interior panels, covers, and decorative elements.

Marine Applications: Applicable for accessories, panels, and non-structural components with moderate moisture resistance.

Industrial and Construction Uses: Ideal for fabricating economical tanks, pipes, and composite profiles.

Certificates and Approvals

Farapol O 121 is synthesized from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	180 - 210	ISO 2555
Acid Value	mgKOH/g	Max 32	ASTM D 1639
Solid Content	%	56-59	ISO 3251
Color	Visual	Light green	Visual
Specific Gravity	relative	1.01-1.10	ISO 2811
Gel Time[1]	minute	6 - 8	ASTM D 2471
Exothermic Peak Temperature	ºC	100-120	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin

Cobalt Octoate1%(Farapol C 901-01) phr	MEKP(Akperox A60) phr	Gel Time @ 25°C minute
1.0	1.1	25-27
1.5	1.5	13-15
1.5	1	21-23
2.5	1.5	11-13

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 60	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 115	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.3	ISO 178/ASTM D 790
Heat Deflection Temperature (HDT)	^{0}C	Min 60	ISO 75/ASTM D 648
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

2) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.5 phr, Akperox A60 1.5 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
3) This test has been done on the specimen with linear dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 121 is a product that is sensitive to temperature, light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL O 121 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is fully responsible for reviewing the material's Safety Data Sheet (SDS) and understanding proper handling procedures prior to using the product.

Packaging

Farapol O 121 is supplied in 200 Kg steel barrels, IBC and bulk road tankers.

Notice

The information contained herein is provided in good faith and is with the best of our accurate knowledge, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments. Please note that variations in testing conditions across different laboratories may result in discrepancies, and a tolerance of up to 5% in test results should be expected.
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