

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 221

Product Description Farapol I 221 is an Isophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has a low viscosity, low reactivity, good impregnation of glass fiber and good process abilities.

Applications and Use Farapol I 221 based on isophthalic acid is an excellent choice for composite manufacturing processes such as Resin Transfer Molding (RTM) and Vacuum Infusion Process (VIP). This resin is specifically formulated to provide superior performance, ensuring high-quality composite parts with excellent mechanical and chemical properties.

RTM and VIP Composite Structures: Ideal for producing lightweight yet durable components with intricate shapes and smooth surface finishes.

Automotive Industry: Used in fabricating structural and non-structural parts, offering strength and resistance to impact and environmental factors.

Marine and Watercraft: Suitable for hulls, decks, and structural components due to its resistance to water and corrosive environments.

Certificates and Approvals Farapol I 221 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 °C	Unit	Specification	Method
Viscosity Brookfield ¹	cps	210 - 230	ISO 2555
Acid Value	mgKOH/g	Max 23	ASTM D 1639
Solid Content	%	56-59	ISO 3251
Color	Visual	Light green	Visual
Specific Gravity	relative	1.06-1.10	ISO 2811
Gel Time ¹	minute	15 - 18	ASTM D 2471
Exothermic Peak Temperature	°C	140-180	ASTM D 2471

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

Gel Time Behavior of Resin

Cobalt Octoate 1% (Farapol C 9010) phr	MEKP(Akperox A60) phr	Gel Time @ 25°C minute
1.0	1.0	23-26
1.5	1.1	22-25
1.5	1.1	18-23
2.0	2.5	14-17

Typical Casted Resin Properties³

<i>Property</i>	<i>Unit</i>	<i>Specification</i>	<i>Method</i>
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	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 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.3	ISO 178/ASTM D 790
Heat Deflection Temperature (HDT)	°C	Min 80	ISO 75-2 Test Method A
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	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 °C.
- 3) This test is has been done on the specimen with linear dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 221 is a product that is sensitive to temperature, light, and oxidation. Hence 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 I 221 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 I 221 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.

Farapol Jam Company reserves the right to modify the information in this document at its discretion. The latest version available on the Farapol website is considered valid, and any previous versions are void.

Document Registration

Pub. No: POL- F-76-33 Revision No.: 3 Rev. Date: 11/23/2024

Contact Information

Tel: +98 21 26231019

Fax: +98 21 26231014

Site: www.farapol.com

Email: info@farapol.com

