

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 low viscosity, low reactive, good impregnation to fiberglass and good process abilities.

Applications and Use This resin is designed for manufacturing Special resin for the Resin Transfer Molding (RTM) Process and Vacuum infusion process (VIP).

Certificates and Approvals Farapol I 221 is manufactured 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

| <i>Property @ 25 °C</i> | <i>Unit</i> | <i>Specification</i> | <i>Method</i> |
|-----------------------------------|-------------|----------------------|---------------|
| 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 Octoate1% (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 Distortion Temperature | °C | Min 80 | ISO 75 |
| 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 done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 221 is a product 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 responsible to familiar with the material handling and safety datasheet before 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 to the best of our knowledge accurate, 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.

Document Registration

Pub. No: POL- F-76-33

Revision No.: 3

Rev. Date: 11/30/2023

Contact Information

Tel: +98 21 26231019

Fax: +98 21 26231014

Site: www.farapol.com

Email: info@farapol.com

