Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 143

Product Description

FARAPOL O 143 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has medium viscosity, medium reactivity, good impregnation of glass fiber, good process abilities, mechanical performance combining a good elongation at break in tension and suitable HDT.

Applications and Use

This modified Orthophthalic unsaturated polyester resin is engineered for general-purpose composite applications that require enhanced mechanical strength, higher heat deflection temperature (HDT), and reliable performance under moderate chemical and thermal exposure.

Recommended processing methods include:

- Hand lay-up
- Filament winding
- Contact molding

Typical applications:

- GRP tanks and piping systems operating under moderate pressure and temperature
- Industrial equipment housings and structural panels with dimensional stability needs
- Ventilation ducts, trays, and general FRP components requiring improved durability
- Cost-effective composite parts with better thermal and mechanical performance than standard Orthophthalic resins

This resin offers:

- Excellent glass fiber wet-out and laminate bonding
- Improved HDT compared to standard Ortho UPRs
- Good chemical resistance for industrial environments
- Balanced processability and surface finish quality

Certificates and Approvals

FARAPOL O 143 is synthesized from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution 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	300 - 400	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	59 - 63	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	18 - 22	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

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

Gel Time Behavior of Resin[2]

Temperature (°C)	*18*	*25*	*30*
Gel Time (minute)	28-34	18-22	10-15

2) Mix ratio for measuring Gel Time: (1.0 phr Cobalt Octoate Farapol C 901 1%- 1.0 phr Akperox A60).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	75 ± 5	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	4-6	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	2.5-3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	130± 20	ISO 178/ASTM D 790
Flexural Modulus	GPa	3.3-3.6	ISO 178/ASTM D 790
Heat Deflection Temperature (HDT)	^{0}C	75 ± 3	ISO 75-2 Test Method A
Barcol Hardness	Barcol	40-45	ASTM D 2583
Water Absorption	%	≈ 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.2	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 °C. HDT: 24 hours at room temperature & 3 hours at 85˚C and 2 hours at 100 ˚C
4) This test has been done on the specimen with linear dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 143 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 above-mentioned conditions, the shelf life for FARAPOL O 143 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 143 is supplied in 200 Kg steel barrels, IBC tanks 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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