Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL T 511

Product Description

Farapol T 511 is an Unsaturated Polyester Resin based on Terephthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has a good mechanical performance combining a good elongation at break in tension and high HDT.

Applications and Use

This resin is designed for fabrication using filament winding, hand lay-up, spray-up, BMC, pultrusion, and molded grating manufacturing processes. Construction of petrol, diesel and gasoline tanks and pipes is one of the important uses of this resin.

Certificates and Approvals

Farapol T 511 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	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 20	ASTM D 1639
Solid Content	%	58 - 62	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.11	ISO 2811
Gel Time[1]	minute	16 - 20	ASTM D 2471
Exothermic Peak Temperature	ºC	170-200	ASTM D 2471

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

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	25-27	16-20	9-12

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

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	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 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Deflection Temperature (HDT)	^{0}C	Min 110	ISO 75-2 Test Method A
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.3	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method
Overall Shrinkage	%	Max 7.0	DIN 16945

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 85 ºC, for HDT specimens 2 hrs at 140˚C.
4) This test has been done on the specimen with linear dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL T 511 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 T 511 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 T 511 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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Contact Information

Tel: +98 21 26231019 Fax: +98 21 26231014

Site: www.farapol.com Email:info@farapol.com