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TECHNICAL DATA SHEET

POLESTER 815

Iso-phthalic Acid / Neopentyl Glycol Type
Non-accelerated Unsaturated Polyester Resin

SPECIAL PROPERTIES AND USE

Iso-phthalic acid / Neopentyl glycol type with high resistance to chemicals of medium reactivity, medium viscous unsaturated polyester resin dissolved in styrene.

GENERAL PROPERTIES

Polester 815 can be diluted with a proper ratio of styrene to suit for the applications, however, dilution more than 15% with styrene should be avoided since it might cause adverse effects of the mechanical properties.

Polester 815 can be cured at elevated temperature or at room temperature according to all usual methods.

APPLICATIONS

Cured **Polester 815** is characterized by an excellent chemical resistance with high strength, and good dimensional stability at elevated temperature. The properties are required as a material particularly for producing containers, industrial moldings, surface linings, pipes, and concrete framework etc.

Polester 815 is designed for the application of:-

- Hand lay-up
- Filament winding
- Vacuum process
- Spray molding
- Centrifugal casting

PACKING AND STORAGE

Steel drum, net weights 230 kg.

CHARACTERISTICS

Appearance	Clear, light yellowish liquid
Color (APHA)	80 max
Acid Value (as mg KOH/1 g resin)	12 max
Viscosity (Gardner, 25°C.)	V - X
Non-volatile (%)	58 - 60
Gel time (Min.) (1.0% Co-1, 2% MEKP-50, 25°C)	5 - 10
Density (g/cm ³) (at 25°C)	1.06
Shrinkage after cure (% b.v.)	ca.7.5
Flash Point (°C) (DIN 53213)	34

STORAGE STABILITY

Polester 815 must be kept away from sources of ignition and heat and not in direct sunlight. It is recommended the storage temperature should not exceed 25°C.

At 25°C (no access of air and light) storage stability is more than 6 months.

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The information given herein and otherwise supplied to users is based on our general experience and, where applicable, on the results of test on samples of typical manufacture. However, because of the many factors which are outside knowledge and control, which can effect the use of these products, users may rely on their own judgment and we cannot accept liability for any injury, loss or damage resulting from reliance upon such information.

Physical Data of Cured Polester 815

Property	Value	Unit	Test Method
Barcol hardness	87	-	-
Compressive strength	1,150	kp / cm ²	Din 53454
Density at 25°C	1.14	g / cm ³	DIN 53479
Elongation	3.0	%	DIN 53455
E-modulus	35,000	kp / cm ²	DIN 53457
Flexural strength	1.250	kp / cm ²	DIN 53452
Impact strength	10.0	kpcm / cm ²	DIN 53453
Impact strength with notch	1.0	kpcm / cm ²	DIN 53453
Refractive index, n _D ²⁵	1.546	-	DIN 53491
Tensile strength	600	kp / cm ²	DIN 53455
Water absorption, 7 days (specimen 50x50x4 mm)	0.3	%	DIN 53495

Thermal Properties of Cured Polester 815

Property	Value	Unit	Test Method
Coefficient of linear expansion, (20–75°C)	60. 10 ⁻⁶	°C ⁻¹	-
Heat distortion temperature	100	°C	ASTM D 648-45 T
Martens temperature	71	°C	DIN 53458
Specific heat	0.35	kcal / kg °C	-
Thermal conductivity	0.15	kcal / m h °C	DIN 52612

Electrical Properties of Cured Polester 815

Property	Value	Unit	Test Method
Dielectric constant ϵ at 800 Hz	3.3	-	DIN 16946
Dielectric strength E _d at 50 Hz	35.8	kV / mm	DIN 16946
Loss factor tang δ at 800 Hz	1.5. 10 ⁻²	-	DIN 16946
Surface insulation resistance R _{ST} (sheet thickness 10 mm)	3. 10 ¹³	Ohm	DIN 53482
Surface resistance R _O	> 10 ¹²	Ohm	DIN 53482
Track resistance	KA 3 C HB 600	-	DIN 16946

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Mechanical and Thermal Properties of Polyester 815 Glass-fibre Laminated

Property	Laminated with			Unit	Test Method
	30%	50%	65%		
	Chopped strand mat		Woven roving		
Compressive strength	2,350	2,800	2,100	kp / cm ²	DIN 53454
Elongation	2.1	2.0	1.8	%	DIN 53455
E-modulus	80,000	95,000	250,000	kp / cm ²	DIN 53457
Flexural strength	2,500	2,700	6,500	kp / cm ²	DIN 53452
Impact strength	58	87	170	kpcm/cm ²	DIN 53453
Impact strength with notch	48	82	149	kpcm/cm ²	DIN 53453
Martens temperature	107	145	> 200	°C	DIN 53458
Tensile strength	1,200	1,800	3,200	kp / cm ²	DIN 53455

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