COLPOLY 721 S

Unsaturated Polyester Resin

Description:

- Unsaturated polyester resin for GRP, based on dicyclopentadiene, orthophthalic acid and standard glycols, dissolved in styrene.
- The resin has medium reactivity and viscosity, contains a UV stabilizer.
- UV absorbers absorb the UV component of sunlight and are not 100% effective and with time the UV absorber is overcome.
- The rate depends on the actual climatic conditions experienced, resulting in possible colour change and/or surface degradation.

Application:

- General purpose applications hand lay-up and spray-up (boats, seats, containers, parts for car bodies, sporting equipment)
- Recommended for GFR flat and corrugated sheets.
- Recommended laminate thickness applied wet-on-wet 3 - 8 mm.

Features and benefits:

- Excellent mechanical strength.
- High impact strength.
- Medium / fast cure.
- Outstanding durability.

Physical characteristics of the liquid resin:

Property	Range	Method / According to standard
Appearance	Slightly hazy	
Acid value	20 - 30 mg KOH/g	MH1051 / ISO 2114
Density, 25 °C	1.11 - 1.13 kg/L	MH1028 / ISO 2811
Styrene content	34 - 37%	MH2034
Viscosity; 25 °C, #2/20 rpm	230 - 250 mPa·s	MH1009 / ISO 3219
Refractive index, 20 °C	1.542 - 1.545	MH1035 / DIN 51423 P1
Flash point	34 °C	DIN 51 755
Shelf life at 25 °C in darkness	6 months	

Curing characteristics at 25 °C:

Property	Range	Method / According to standard
Gel time	7 - 9 minutes	MH3021 / MH3023 100 g resin; 0.2% Co Acc. 6%, 2.0% AAP-K3
Time from 25 °C to peak	4 - 7 minutes	
Exothermic temperature (peak)	175 - 195 °C	

Curing characteristics at 80 °C:

Property	Range	Method / According to standard
Time from 65 °C to 90 °C	1.5 - 2.5 minutes	MH3024 2.0% MIBK (TRIGONOX HM)
Time from 65 °C to peak	3 - 5 minutes	
Exothermic temperature (peak)	200 - 220 °C	

Issue Date: April 2025

Physical characteristics of cured nonreinforced base resin:

Property	Range	Method / According to standard
Density, 20 °C	1.21 - 1.23 kg/L	ISO 1183
Barcol hardness	35 - 45	EN 59
Tensile strength	58 - 62 MPa	ISO R 527
Elongation at break	2.0 - 3.0%	ISO R 527
Flexural strength	85 - 105 MPa	ISO 178
E - modulus in tension	3300 - 3500 MPa	ISO R 527
Impact resistance	8 - 12 kJ/m^2	ISO 179
Heat distortion temperature	80 - 85 °C	ISO 75 A
Glass transition temperature	115 - 125 °C	ISO 537

Cure:

- It is recommended that gel time be checked in the customer's plant as age, temperature, humidity and catalyst will produce varied gel times.
- The catalyst level should not exceed 2.5% or fall below 1.0% for proper cure at 25 °C.
- The product should not be used when temperature condition is below 18 °C.

Handling and safety precautions:

Colpoly 721 S is flammable liquid and should be kept away from naked flames. For further details, please see the relevant Safety Data Sheet.