

PALATAL® P 4-01

CHEMICAL/PHYSICAL NATURE

Palatal® P 4-01 is an unsaturated polyester resin based on orthophthalic acid and standard glycols, dissolved in styrene. Palatal® P 4-01 has a medium reactivity and a medium viscosity

MAJOR APPLICATIONS

Palatal® P 4-01 is suitable for a wide range of applications. It is recommended for all kinds of glass fiber reinforced moldings, for unreinforced castings and for the production of polymer concrete and artificial stone.

On account of its reactivity and curing behavior Palatal® P4-01 is particularly suitable for the production of laminates almost free of internal stress.

APPROVALS

Cured unreinforced Palatal® P 4-01 conforms to type 1120 according to DIN 16946/2 and is classified in group 1A according to EN 13 121-1.

The resin is approved by Det Norske Veritas and Lloyd's Register of Shipping for use in boat building.

PRODUCT SPECIFICATIONS UPON DELIVERY

Property	Range	Unit	TM
Appearance	clear	-	2265
Color, Lico 200	0 - 80	APHA	2017
Viscosity, 23 °C	540 - 610	mPa.s	2013
Solids content, IR	62 - 65	%	2033
Cure time from 25 to 35°C	16 - 21	Min	2625
Cure time from 25°C to peak	23 - 29	Min	2625
Peak temperature	135 - 155	°C	2625

REMARKS

Viscosity measurement: $Z 2/100 s^{-1}/23^{\circ}C$

Reactivity determined with 1 g Trigonox 44 B (AKZO-Nobel) and 0.5 g Accelerator NL 49 P (AKZO-Nobel) added to 100 g resin.

PROPERTIES OF THE LIQUID RESIN (TYPICAL VALUES)

Property	Value	Unit	TM
Density, 20°C	1100	kg/m ³	-
Refractive index	1.5443	-	2150
Flash point	33	°C	2800
Acid value, as such	31	mg KOH/g	2401
Stability, no init., dark, 25°C	6	Month	-

PROPERTIES OF CAST UNFILLED RESIN (TYPICAL VALUES)

Property	Value	Unit	TM
Tensile strength	70	MPa	ISO 527-2
Mod. of elasticity in tension	4.3	GPa	ISO 527-2
Elongation at break	2	%	ISO 527-2
Flexural strength	110	MPa	ISO 178
Mod. of elasticity in bending	4.3	GPa	ISO 178
Elongation in flex	2.6	%	ISO 178
Impact res. - unnotched sp.	10	kJ/m ²	ISO 179
Heat deflection temp. (HDT)	63	°C	ISO 75-A
Glass transition temp. (Tg)	93	°C	DIN 53445

CURE CONDITIONS

Cured with 1 ml MEK-Peroxide (medium activity) and 0.2 ml Co-octoate solution (1 % Co in styrene) added to 100 g of resin.

Cured 24 h at room temperature and post-cured 24 h at 80 °C.

PROCESSING

Palatal® P 4-01 does normally not exhibit tack-free cure. To ensure tack-free cure of surfaces exposed to air, suitable additives (e.g. a paraffin solution) should be added.

The final state of cure may be optimized by post-curing at elevated temperatures (e.g. 80°C) for several hours.

GUIDELINES BEFORE USE

The resin should be conditioned at a well-defined, application dependent temperature (usually 15 °C minimum for MEKP/Co cure).

STORAGE GUIDELINES

The resin should be stored indoors in the original, unopened and undamaged packaging, in a dry place at temperatures between 5°C and 30°C and the properties might change during storage. Shelf life is reduced at higher temperatures and the properties of the resin might change during storage. The shelf life of styrene containing unsaturated polyesters will be significantly reduced when exposed to light. Store in dark and in 100%light tight containers only.

MATERIAL SAFETY

A Material Safety Data Sheet of this product is available on request.

TEST METHODS

Test methods (TM) referred to in the table(s) are available on request.

Aliancys is a leading global company active in the sales of Quality Resins for composite applications. Together with its customers, Aliancys is pushing the limits of both composite part manufacturing and performance. Taking an integral approach to new product development, Aliancys is using its full expertise in resin chemistry, material science, and component manufacturing for shaping new applications in composites. So let's talk and increase our mutual business success, both today and tomorrow. More information on www.aliancys.com

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