

# Product Data Sheet

## 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 glassfibre reinforced mouldings, for unreinforced castings and for the production of polymer concrete and artificial stone.

On account of its reactivity and curing behaviour 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
Colour, 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

### Material Safety

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

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### Properties of the liquid liquid resin (typical values)

Property	Value	Unit	TM
Density, 20°C	1100	kg/m <sup>3</sup>	-
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	Mon	-

### Typical values of cast unfilled resin

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 <sup>2</sup>	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-oct. 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 optimised by post-curing at elevated temperatures (e.g. 80°C) for several hours.

### Test methods

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

### Guidelines before use

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

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### 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.

Shelf life is reduced at higher temperatures and the properties of the resin might change during storage.

Exposure to sunlight should be

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