

# Product Data Sheet

## Palatal P 50-01

### Chemical/physical nature

Palatal P 50-01 is an unsaturated polyester based on orthophthalic acid and standard glycols, dissolved in styrene.

The resin has a medium reactivity and a low viscosity.

### Major applications

Due to its low viscosity Palatal P 50-01 features excellent impregnation behaviour during the production of glass fibre reinforced mouldings which are processed by hand-lay-up or injection techniques. Furthermore, Palatal P 50-01 allows high filler contents in the production of artificial stone and polymer concrete.

### Approvals

Cured unreinforced Palatal P 50-01 conforms to type 1120 according to DIN 16946/2 and is classified in group 0 according to DIN 18820/1.

### Product specifications upon delivery

Property	Range	Unit	TM
Appearance	clear	-	2265
Colour, Lico 200	0 - 60	APHA	2017
Viscosity, 23 °C	300 - 360	mPa.s	2013
Solid content	57.5 - 60.5	%	2033
Gel time 25°C-35°C	14 - 19	min	2625
Cure time from 25°C to peak	20 - 26	min	2625
Peak temperature	140 - 165	°C	2625

#### Remarks

Viscosity measurement: Physica, Z2 / 100 s<sup>-1</sup> / 23°C

Reactivity: 1,0 g Trigonox 44 B (AKZO-Nobel) and 0,5 g

Accelerator NL 49 P added to 100 g resin.

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

Property	Value	Unit	TM
Refractive index, 23°C	1,5490	-	2150
Density, 20°C	appr. 1100	kg/m <sup>3</sup>	-
Flash point	appr. 33	°C	2800
Stability, no init., dark 25°C	6	Month	-

### Typical values of cast unfilled resin

Property	Value	Unit	TM
Tensile strength	75	MPa	ISO 527-2
Mod. of elasticity in tension	4.2	GPa	ISO 527-2
Elongation at break	2.3	%	ISO 527-2
Flexural strength	110	MPa	ISO 178
Mod. of elasticity in bending	4.2	GPa	ISO 178
Elongation in flex	3.0	%	ISO 178
Impact res. - unnotched sp.	14	kJ/m <sup>2</sup>	ISO 179
Heat deflection temp. (HDT)	63	°C	ISO 75-A
Glass transition temp. (T <sub>g</sub> )	95	°C	5180

### Curing conditions

Cured with: 1,0 ml MEKP-HA2 (Peroxid-Chemie GmbH) and 0,2 ml Co-oct. solution (1 % Co in styrene) added to 100 g resin. Postcured: 24 h at 80 °C .

### Processing

Palatal P 50-01 does normally not exhibit tack-free cure. In order to ensure tack-free cure of surfaces exposed to air, suitable additives (e.g. paraffin solution) should be added.

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

### Guidelines before use

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

### Storage guidelines

Palatal P 50-01 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. 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.

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### 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

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