

# PALATAL® P 4TV-129

## CHEMICAL/PHYSICAL NATURE

Palatal® P 4TV-129 is an unsaturated polyester resin based on orthophthalic acid and standard glycols, dissolved in styrene. Palatal® P 4TV-129 is pre-accelerated and contains a thixotropic agent. Palatal® P 4TV-129 has a medium reactivity and a low viscosity.

## MAJOR APPLICATIONS

Palatal® P 4TV-129 is well suited for hand lay-up and spray techniques. It readily impregnates the reinforcing materials during lay-up and does not run off inclined laminates.

Palatal® P 4TV-129 is especially suitable for the production of thin laminates (< 5 mm) which require curing with an even heat generation.

On account of its reactivity and curing behavior it is particularly suitable for the production of laminates almost free of internal stress.

## APPROVALS

Cured unreinforced Palatal® P 4TV-129 conforms to type 1120 according to DIN 16946/2 and is classified in group 0 according to DIN 18820/1.

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
Viscosity, 23°C	300 - 400	mPa.s	2313
Solids content, IR	53 - 57	%	2033
Appearance	hazy	-	2265
Cure time from 25 to 35°C	16 - 23	Minute	2625
Cure time from 25°C to peak	30 - 40	Minute	2625
Peak temperature	110 - 140	°C	2625

## REMARKS

Viscosity:  $S2/20 \text{ s}^{-1}/23^\circ\text{C}$

TM 2265 color = blueish

Reactivity determined with 1.5 g Butanox M 50 (AKZO Nobel) added to 100 g resin

## PROPERTIES OF THE LIQUID RESIN (TYPICAL VALUES)

Property	Value	Unit	TM
Density, 20°C	appr. 1100	kg/m <sup>3</sup>	-
Flash point	appr. 33	°C	2800
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 <sup>2</sup>	ISO 179
Heat deflection temp. (HDT)	63	°C	ISO 75-A
Glass transition temp. (Tg)	93	°C	DIN 53445

## CURING CONDITIONS

Mechanical properties determined on resin not containing thixotropic agent. Cured with 1 ml MEKP-HA 2 (Peroxid Chemie GmbH) and 0.2 ml Co-octoate solution (1 % Co in styrene) added to 100 g resin. Cured 24 hrs. at room temperature and 24 hrs. at 80 °C.

## PROCESSING

Palatal® P 4TV-129 normally exhibits tack-free cure. Nevertheless, the surface may not be cured wholly. To ensure complete cure of the surface exposed to air, suitable additives (e.g. paraffin solution) should be added. Post-curing at elevated temperatures (e.g. 80 °C) for several hours may further optimize final state of cure.

## GUIDELINES BEFORE USE

The resin should be conditioned at a well-defined, application dependent temperature (usually 15 °C minimum for MEKP cure). Stir the resin thoroughly before use.

## 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.

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