

# PALATAL® A 410-01

## CHEMICAL/PHYSICAL NATURE

Palatal® A 410-01 is an unsaturated polyester based on isophthalic acid and neopentylglycol, dissolved in styrene. Palatal® A 410-01 has a medium reactivity and a medium viscosity.

## MAJOR APPLICATIONS

Palatal® A 410-01 is intended for glass-fiber reinforced moldings that exhibit excellent mechanical properties, high resistance to chemicals and good electrical properties, e. g. tanks/containers in plant construction, corrosion protection, boats and electric industry. Furthermore Palatal® A 410-01 is used as an adhesion promoter between PVC and GRP in the construction of GRP tanks with PVC liners.

## APPROVALS

Cured unreinforced Palatal® A 410-01 conforms to type 1140 according to DIN 16946/2 and is classified in group 3 according to DIN 18820/1.

## PRODUCT SPECIFICATIONS UPON DELIVERY

Property	Range	Unit	TM
Appearance	clear-sl. hazy	-	2265
Color, Lico 200	max. 5	G	2017
Viscosity, 23°C	1100 - 1300	mPa.s	2013
Solids content, IR	54 - 58	%	2033
Water content	0,06 max	%	2350
Viscosity	25000 - 625000	mPa.s	2914A
Cure time from 25 to 35°C	8 - 14	Min	2625
Cure time from 25°C to peak	16 - 23	Min	2625
Peak temperature	160 - 190	°C	2625

## REMARKS

Viscosity measurement:  $S\ 2/100\ s^{-1}/23^{\circ}C$   
 Reactivity determined with 1.0 g Trigonox 44 B (AKZO-Nobel) and 0.5 g Accelerator NL 49P (AKZO-Nobel) added to 100 g of resin.

## PROPERTIES OF THE LIQUID RESIN (TYPICAL VALUES)

Property	Value	Unit	TM
Density, 23°C	appr. 1060	kg/m <sup>3</sup>	2160
Flash point	appr. 33	°C	2800
Stability, no init., dark, 25°C	6	Mon	-

## PROPERTIES OF CAST UNFILLED RESIN (TYPICAL VALUES)

Property	Value	Unit	TM
Tensile strength	85	MPa	ISO 527-2
Mod. of elasticity in tension	3.6	GPa	ISO 527-2
Elongation at break	4.4	%	ISO 527-2
Flexural strength	150	MPa	ISO 178
Mod. of elasticity in bending	3.95	GPa	ISO 178
Elongation in flex	5.6	%	ISO 178
Heat deflection temp. (HDT)	107	°C	ISO 75-A
Impact res. - unnotched sp.	20	kJ/m <sup>2</sup>	ISO 179
Density, 20°C	1145	kg/m <sup>3</sup>	-
Glass transition temp. (Tg)	125	°C	DIN 53445

## CURING CONDITIONS

Cured with 1 ml AAP-NA2 and 0.1 ml Co-octoate solution (1% Co in styrene) added to 100 g of resin. Cured for 24 h at room temperature and post-cured 24 h at 100°C.

## PROCESSING

Palatal® A 410-01 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 use of methylethylketone peroxide (MEKP) compared to cyclohexanone peroxide (CHP) leads to shorter gel times and slower curing when cobalt accelerated curing is carried out at room temperature. The use of MEKP thus is not recommended for the production of thin laminate layers and gel coats, for which CHP should be used.

If low curing temperatures and extended gel times are required, the use of BP together with amine accelerators is recommended. The amount of curing agents has to be increased for the production of thin coatings and laminate layers.

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 a 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.

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