

Product Data Sheet

Palatal A 400-01 FC

Chemical/physical nature

Palatal A 400-01 FC is an unsaturated polyester based on isophthalic acid and standard glycols, dissolved in styrene. The resin has a high reactivity and a medium viscosity.

The resin is specifically formulated and produced (GMP - Good manufacturing practice) to be suitable for food contact and potable water applications.

Major applications

Palatal A 400-01 FC is intended for glass reinforced parts with improved mechanical properties that require outstanding resistance to hydrolysis and low water absorption (tanks, vessels and hydraulic engineering pipes and parts).

Furthermore, Palatal A 400-01 FC is used as a base resin for high quality coatings and gelcoats formulated and produced for applications in contact with food and potable water.

Parts and coatings made from Palatal A 400-01 FC show only little tendency to cracking.

Approvals

Cured unreinforced Palatal A 400-01 FC conforms to type 1140 according to DIN 16 946/2 and is classified in group 2 according to DIN 18 820/1.

Regulatory data sheet / Food contact

Specific information on compliance to food contact regulations is detailed in the regulatory data sheet, available on request.

Properties of the liquid liquid resin (typical values)

Property	Value	Unit	TM
Density, 20°C	appr. 1130	kg/m ³	2160
Flash point	33	°C	2800
Stability, no init., dark, 25°C	6	months	-

Product specifications upon delivery

Property	Range	Unit	TM
Appearance	clear	-	2265
Colour, APHA	max. 120	-	2017
Refractive index, 23°C	1.5350 - 1.5390	-	2150
Viscosity,	850 - 1150	mPa.s	2013
Solids content, IR	63 - 66	%	2033
Gel time from 25 to 35°C	7 - 11	minutes	2625
Cure time from 25°C to peak	16 - 22	minutes	2625
Peak temperature	145 - 175	°C	2625

Remarks

Viscosity measurement: Z2/100/23°C

The curing characteristics are obtained using 1.0 g Butanox M 50 (AKZO-Nobel) and 1.0 g Accelerator NL 49P (AKZO-Nobel) added to 100 g of resin.

Properties of cast unfilled resin (typical values)

Property	Value	Unit	TM
Density, 20°C	1220	kg/m ³	-
Tensile strength	90	MPa	ISO 527-2
Tensile E-modulus	3.7	GPa	ISO 527-2
Elongation at break	4.6	%	ISO 527-2
Flexural strength	140	MPa	ISO 178
Flexural E-Modulus	3.8	GPa	ISO 178
Outer fibre strain	5.4	%	ISO 178
Impact res. - unnotched sp.	20	kJ/m ²	ISO 179
Hardness	45	Barcol	934.1
Heat Deflection Temp. (HDT)	93	°C	ISO 75-A
Glass transition temp. (Tg)	121	°C	DIN 53445

Curing conditions

The mechanical characteristics are obtained curing the resin with 1ml medium reactive MEK-Peroxyde and 0.4 ml Co-oct. solution (1% Co in styrene) added to 100 g resins. Cured for 24 h at RT and post-cured for 24 h at 80 °C.

For measurement of Tg dyn, specimen were cured with 1.0 ml high reactive MEK-Peroxyde and 0.2 ml Co-oct. solution (1% Co in styrene).

Cured 24 h at RT and 24 h at 100 °C.

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Processing

Palatal A 400-01 FC normally does not exhibit tack-free cure. 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 optimised by post-curing at elevated temperatures (e.g. 80 °C) for several hours. Post cure is i.e. recommended for all finished parts which are intended for contact with food and potable water.

Guidelines before use

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

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.

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 for the product is available on request.

Test methods

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