

Product Data Sheet

Palapreg P18-03

Chemical/physical nature

Palapreg P18-03 is an unsaturated polyester resin derived from maleic acid and glycols, dissolved in styrene. The resin is of medium viscosity and high reactivity.

Major applications

The formulations of Palapreg P18-03 with high polymer solutions such as Palapreg H850-01, H852-03, Palapreg H 1080-01 etc. are recommended for the production of low profile and class A applications, as well as high quality low shrink (H814-01) SMC/ BMC parts. Formulations based on P 18-03 can be used in a wide range of applications, giving high surface quality, low separation and improved Pigmentability. SMC based on Palapreg P 18-03 can readily be thickened with magnesium oxide.

Product specifications upon delivery

Property	Range	Unit	TM
Viscosity, 23°C	1680 - 1900	mPa.s	2013
Colour, Lico 200	0 - 100	APHA	2017
Solids content, IR	64 - 66.5	%	2033
Appearance	clear	-	2265
Water content	0.06 - 0.10	%	2350
Acid value, as such	14.5 - 18.5	mg KOH/g	2401
Gel time	40 - 70	seconds	2261
Cure time	80 - 120	seconds	2261
Peak temperature	270 - 295	°C	2261
Accelerated thickening	490000 - 790000	mPa.s	2914

Remarks

Viscosity: Z2/100/23°C

Reactivity determined with 1 g TBpB added to 100 g resin.

Typical Values Refractive Index

(23°C - TM 2150) = 1.5180 - 1.5210

Properties of the liquid resin (typical values)

Property	Value	Unit	TM
Density, 23°C	appr. 1100	kg/m³	2160
Flash point	appr. 33	°C	2800
Shelf life, no init., dark, 25°C	3	Month	-

Properties of cast unfilled resin (typical values)

Property	Value	Unit	TM
Flexural strength	95	MPa	ISO 178
Flexural modulus	3.6	GPa	ISO 178
Outer fibre strain	2.8	%	ISO 178
Tensile strength	50	MPa	ISO 527-2
Mod. of elasticity in tension	3.5	GPa	ISO 527-2
Elongation at break	1.5	%	ISO 527-2
Heat deflection temp. (HDT)	140	°C	ISO 75-A
Glass transition temp. (T _g)	185	°C	DIN 53445

Properties of SMC-mouldings (typical values)

Property	Value	Unit	TM
Glass content	30	%	-
Flexural strength	180	MPa	ISO 178
Flexural modulus	11.0	GPa	ISO 178
Outer fibre strain	2.5	%	ISO 178
Tensile strength	100	MPa	ISO 527-2
Mod. of elasticity in tension	10.5	GPa	ISO 527-2
Elongation at break	1.7	%	ISO 527-2
Impact res. - unnotched sp.	85	kJ/m²	ISO 179
Moulding shrinkage	-0.07 = expansion	%	DIN 53464

Typical starting formulation for SMC-paste

Component	Weight
Palapreg P 18-03	50
Palapreg H 852-03	50
TBpB	1.5
Calcium carbonate	200
Zinc stearate	4
MgO-paste (35% MgO)	2.5

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Processing

Palapreg P 18-03 is processed together with high polymers into LP-SMC and BMC. The ratio of Palapreg P 18-03 and polymer solutions depends on the type of polymer solutions used and can be varied if necessary. Depending on the size of the mouldings it is recommended to add 300 to 600 ppm p-benzoquinon to the system (calculated on UP-resin plus thermoplastic solution).

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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