

# PALAPREG® P 0423-02

## CHEMICAL/PHYSICAL NATURE

Palapreg® P 0423-02 is an unsaturated polyester resin derived from maleic acid and standard glycols, dissolved in styrene. Palapreg® P 0423-02 has a high reactivity and a medium viscosity.

## MAJOR APPLICATIONS

Palapreg® P 0423-02 is a base resin for low profile and class A SMC formulations. Combination with high polymer solutions such as Palapreg® H 2681-01, Palapreg® H 1080-01 etc. results in high surface quality. The resin can readily be thickened with magnesium oxide.

## PRODUCT SPECIFICATIONS UPON DELIVERY

Property	Range	Unit	TM
Viscosity, 23°C	1200 - 1450	mPa.s	2013
Color, Gardner	0 - 2	-	2017
Solids content, IR	63.7 - 65.5	%	2033
Gel time, 130°C	80 - 115	seconds	2261
Peak time	120 - 170	seconds	2261
Peak temperature	280 - 295	°C	2261
Appearance	clear-sl. hazy	-	2265
Water content	0.03 - 0.1	%	2350
Acid value, as such	20.0 - 22.5	mg KOH/g	2401
Accelerated thickening	600000 - 750000	mPa.s	2914-B

## REMARKS

Viscosity: Z2/100/23°C

Reactivity determined with 1 g Trigonox C (TBpB) added to 100 g resin.

Typical Values Refractive Index (23°C - TM 2150) = 1.518 - 1.522

## PROPERTIES OF THE LIQUID RESIN (TYPICAL VALUES)

Property	Value	Unit	TM
Density, 23°C	appr. 1125	kg/m <sup>3</sup>	2160
Flash point	appr. 33	°C	2800
Stability, no init., dark, 25°C	3	Mon	-

## PROPERTIES OF CAST UNFILLED RESIN (TYPICAL VALUES)

Property	Value	Unit	TM
Density, 20°C	1210	kg/m <sup>3</sup>	DIN 53479
Flexural strength	110	MPa	ISO 178
Tensile strength	55	MPa	ISO 527-2
Mod. of elasticity in tension	3.4	GPa	ISO 527-2
Elongation at break	1.7	%	ISO 527-2
Impact res. - unnotched sp.	5	kJ/m <sup>2</sup>	ISO 179
Glass transition temp (Tg) (Offset G')	139	°C	ISO 6721
Glass transition temp (Tg) (Peak tan delta)	190	°C	ISO 6721
Heat deflection temp. (HDT)	145	°C	ISO 75-A

## PROPERTIES OF SMC-MOULDTINGS (TYPICAL VALUES)

Property	Value	Unit	TM
Glass content	28	%	-
Flexural strength	180	MPa	ISO 178
Tensile strength	75	MPa	ISO 527-2
Mod. of elasticity in tension	12	GPa	ISO 527-2
Impact res. - unnotched sp.	85	kJ/m <sup>2</sup>	ISO 179

## TYPICAL STARTING FORMULATION FOR SMC-PASTE

Component	Weight
Palapreg® P 0423-02	65.5
Palapreg® H 2681-01	28
Palapreg® H 1080-01	2
Styrene	4.5
TBPB	1.5
Byk W 996, Byk Chemie	2.9
p-benzoquinone, 10%	0.7
Cobalt octoate, 1%	1.1
Calcium carbonate, 3 µm	140
Calcium carbonate, 5 µm	75
Zinc stearate	4.5
MgO-paste (35% MgO)	3

## PROCESSING

Palapreg® P 0423-02 is usually processed together with Palapreg® high polymers into LP- and class A SMC. Depending on the size of the molded part it is recommended to add 300 to 600 ppm p-benzoquinone 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.

Aliancys is a leading global company active in the sales of Quality Resins for composite applications. Together with its customers, Aliancys is pushing the limits of both composite part manufacturing and performance. Taking an integral approach to new product development, Aliancys is using its full expertise in resin chemistry, material science, and component manufacturing for shaping new applications in composites. So let's talk and increase our mutual business success, both today and tomorrow. More information on [www.aliancys.com](http://www.aliancys.com)

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