



## PB 500 Sprayable

### Expanding Epoxy system for the production of cellular foam

**PB** products are based on a two component formulation designed for the production "in situ" of low density epoxy foam.

The density of the finished product is determined by the resin base.

**PB 500 S** provides foams of approximately 500 kg/m<sup>3</sup>.

The hardener influences the hardening speed and thus the potential thickness of the piece.

#### Advantages

- Sprayable
- Easy mixing ratio by volume: 2 / 1
- Manufacturing "in situ" of a low density foams.
- No handling of hollow microspheres.
- Two component systems.
- Good adhesion onto all type of materials.
- PB can be cast onto prepregs and wet epoxy resins curing.
- Homogeneous density.
- Very low water absorption.
- No CFC's

#### Applications

- Production of epoxy foam.
- Casting "in situ" of epoxy core materials, maximum 1cm thickness with DM05 and DM06
- Floating volume.
- Increase the density of foams and honey comb.
- Thermal insulation.
- Low density laminate for Surfboards, sports goods, light weight engine

#### Epoxy resin

		<b>PB 500 S</b>	
Appearance		White liquid	
Viscosity (m.Pas)	@ 25°C	9 000 - 11 000	ISO 2555
Density (g/cm <sup>3</sup> )	@ 20 °C	1. 15 ± 0.01	Picnometer NF ISO 2811-1
Flash point		> 150 °C	ISO 2719

#### Hardeners

		<b>DM 05</b>	<b>DM 06</b>	
Appearance / colour		Yellow liquid	Yellow liquid	
Reactivity type		Fast	Very fast	
Viscosity (m.Pas)	@ 25°C	1 030 ± 150	1 110 ± 150	ISO 2555
Density (g/cm <sup>3</sup> )	@ 20°C	1.020 ± 0.01	1.015 ± 0.01	Picnometer NF ISO 2811-1
Flash point		> 100°C	> 100°C	ISO 2719

#### Thermal characteristic

		<b>DM 05</b>	<b>DM 06</b>
Tg 1 max	(° C)	94	92

*Tg1: Onset Glass transition / DSC according to norm ISO 11357-2: 1999 20° C / mm, temperature range – 5 to 180° C, Tg1 max: 2nd passage.*

### SICOMIN Composites

RN 568 BP23 13161 Châteauneuf-les-Martigues Cédex – France

Pone : 33.04.42.42.30.20 Fax : 33.04.42.81.29.29 mail : composites@sicomin.com

### Mixing ratios:

PB 500 S / DM 05 PB 500 S / DM 06	By weight 100 g / 40 g	Volume 100 ml / 50 ml or 2 / 1
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### Exothermic parameters

Thermal conductivity of substrate.

Open or closed moulding.

Temperature of components and ambient temperature.

Geometry, laminate thickness, volume and mass of the casting.

For casting onto a laminate that is curing, the heat produced by the resin can influence the reactivity of the foaming system, on a thick laminate.

### Recommendations for use

- In order to homogenise the PB resins, mix thoroughly with a helicoidal agitator before quantity determination (take a special care to the side and base of the container ).

- The quantity determination have to be done by weight, with a precise scale adapted to the quantity used

- The expansion is much faster than the polymerisation: mixing and casting operations must be done as quick as possible, specially with the low density foaming systems.

- Hand mixing: the maximum working time of mixes is 4 minutes.

### Industrial equipment:

Best result with heatable low-pressure mix-metering systems with a static mixing head

### Typical cure cycles

1 hour @ 50 °C or 20 mn @ 80 °C

The optimum curing process must be determined for each case.

For casting volume wait until every parts of the casting is hard.



If possible leave in the mould.

### Expansion ratios

	Finale density after free expansion @ 25 °C 500 Kg / m <sup>3</sup>	Expansion ratio @ 25°C x 2
PB 500 S / DM 05 PB 500 S / DM 06		

Prepare 5 to 10 % more of mix for the waste.

### Toxicity and Safety Informations (\*)

Products	Labels	Dangers	Risk Phrases	Safety Phrases
PB 500 S		Xi Irritating	R 36 / 38 R 43	S 28 S 37/39
		N Dangerous for the environment	R 51 / 53	S 3 / 9 / 49
DM 05		C Corrosive	R 21 / 22 R 34 R 43	S 26 S 36/37/39 S 38
		C Corrosive	R 34 R 21 / 22 R 43	S 22 S 26 S 28

(\*) For further information please consult the health and safety tables

**Warning**

- This products generates flammable hydrogen gas during the foaming process.
- Foaming should be carried out in areas ventilated and monitored to insure that the lower explosive limit of 4% of hydrogen in air is not exceeded.
- Hydrogen gas rises rapidly. Sources of ignition at and above area should be excluded.

**Handling and safety**

The PB 500 S can generate flammable gas on contact with acidic, basic or oxidizing materials and such contact must be avoided.

Keep curing agent containers tightly closed.

**Storage**

PB 500 S base will remain useful for 12 months from the date of shipment.

DM 0X curing agent will remain useful for 24 months from the date of shipment

**Packaging (kg)**

Kits	PB 500 S	DM 0x
35	25	10
7	5	2
1.4	1	0.4