

PR 500

References :

Polyol : SL 500 000 PR500 Polyol
Isocyanate : SL 000 500 PR500 Isocyanate

Definition :

Colorable polyurethane vacuum casting resin.
Good thermal and mechanical properties. Moderated aggressiveness to polyaddition silicone moulds.
This product complies with the European Directives : 2002/96/EC, 2000/53/EC, 2000/11/EC, 2011/65/EC et 2017/2102/EC (RoHS).

Average physical properties of the components :

	SL 500 000 Polyol	SL 000 500 Isocyanate	PR 500 Mix
Aspect – Color	Colorless transparent liquid	Slightly yellow transparent liquid	Slightly yellow transparent liquid
Brookfield viscosity LVT at 25°C (mPa.s) According to MO-051	450	950	
Density at 25°C According to MO-032	1.07	1.20	1.16

Application properties :

Mixing ratio by weight	40	100	
Mixing ratio by volume	45	100	
Potlife on 150g at 25°C (min.) According to MO-062			5
Demoulding time at 70°C (min.) According to MO-116			45

Average mechanical and thermal properties of the cured material :

- Average data obtained after stabilization : 1h at 70°C + 24h at room temperature

	Standard	Data
Shore D1 Hardness	ISO 868-2003	85
Heat Deflection Temperature (HdT) (°C)	ISO 75-2 : 2013	70
Glass transition temperature (Tg) (°C)	ISO 6721-10 : 2015	76
Flexural modulus (MPa)	ISO 178 : 2011	2700
Maximum flexural strength (MPa)	ISO 178 : 2011	100
Tensile modulus (MPa)	ISO 527-1 : 2012	2600
Maximum tensile strength (MPa)	ISO 527-1 : 2012	63
Elongation at break (%)	ISO 527-1 : 2012	24
Maximum stress at break (MPa)	ISO 527-1 : 2012	38
Impact resistance – Charpy (kJ.m ⁻²)	ISO 179-1/1fU ^c : 2010	40

The values mentioned on this document are based on tests and researches carried out in our laboratories, under precise conditions. This document cannot be, in any case, considered as a specification data sheet. It is the responsibility of the user to check the suitability of this material to his application in his own conditions, defined and tried by himself. SYNTHENE company disclaims any responsibility for any consequence occurred by the use of this product.

- **Average data obtained after stabilization : 2h at 70°C + 2h at 100°C + 24h at room temp.**

		Standard	Data
Heat Deflection Temperature (HdT)	(°C)	ISO 75-2: 2013	93
Glass transition temperature (Tg)	(°C)	ISO 6721-10 : 2015	100
Flexural modulus	(MPa)	ISO 178 : 2011	2600
Maximum flexural strength	(MPa)	ISO 178 : 2011	102
Impact resistance – Charpy	(kJ.m ⁻²)	ISO 179-1/1eU^b: 2010	69

Hygiene and safety for using :

Wearing appropriate safety clothes and accessories (gloves, glasses) is advised.
Work in a ventilated room.
For more information, please read the Medical and Safety Data Sheet of the material.

Application process with vacuum casting machine :

Before using, make sure that the isocyanate component doesn't show any trace of crystallization (presence of particles, cloudy liquid).

In case of crystallization, place the product in the oven at 70°C until the liquid is completely homogeneous again (approximately 2 hours for 1 kg of product).

If the product is not completely clear after this step, place it in the oven at 100°C (1 hour maximum).

If the isocyanate is not completely clear after this second heat treatment, the product should not be used.

Make sure that the product is back at room temperature again and properly homogenized before pumping it or placing it in the machine.

Pre-heat the polyaddition silicone moulds at 70°C.

Weigh the polyol component in the upper cup (without forgetting the casting residues).

Weigh the isocyanate component in the lower cup (mixing cup).

After 10 minutes of vacuum, pour the polyol component into the isocyanate component and mix until complete homogeneity of the mixture (approximately 50 to 60 seconds).

Cast in the silicone mould.

Place the mould in an oven at 70 °C

Demoulding is possible after 45 minutes, depending on the thickness.

It is then possible to carry out a post-curing to obtain the maximum characteristics of the product.

For big parts, using a shape holder is advised in order to avoid distortions.

Packaging :

Parcel of 4 kits (4 x 0.8 kg + 8 x 1 kg)

Storage :

6 months in original and unopened containers and stored between 15 and 25°C.

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