45 Ferme de L'Evêché
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PR600

References:

Polyol: PR600-POLYOL-SL600000 **Isocyanate: PR600-PRA610-ISO-SL000600**

Definition:

➔ PR600 :

Polyurethane resin for the realisation of PA, PC or filled ABS like parts with the vacuum casting process. The product shows high thermomechanical properties and excellent impact resistance. Slightly yellow transparent material, easily colourable, with good flowability in silicone moulds and a short demoulding time. REACH-compatible material complying with the following European Directives:

- 2011/65/EU - 2015/863 - 2017/2102/EU (RoHS 1 and 2)
- 2002/96/EC (WEEE)
- 2000/53/EC (ELVs)
- 2000/11/EC

Average physical properties of the components:

	PR600 Polyol SL 600 000	PR600-PRA610 Iso SL 000 600	PR600 Mix SL 600 600
Aspect - Colour	Colourless transparent liquid	Yellow translucent liquid	Whitish liquid Golden transparent solid
Brookfield LVT viscosity (mPa.s) **According to MO-051**	820	1200	2000
Density at 25°C **According to MO-032**	1,09	1,24	1,19

Application properties:

	PR600 Polyol SL 600 000	PR600-PRA610 Iso SL 000 600	PR600 Mix SL 600 600
Mixing ratio by weight	50	100	
Mixing ratio by volume	57	100	
Mixing time at 25°C			2 min.
Potlife on 150 g at 25°C **According to MO-062**			8 min.
Maximum casting thickness			8 mm
Demoulding time at 70°C (on 3mm) **According to MO-116**			50 – 60 min.
Minimum post-curing time	1h at 70°C + 24h at room temperature		
Optimal curing time	2h at 70°C + 2h at 100°C + 24h at room temperature		

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Average mechanical and thermal properties of the cured material:

- **Average values obtained after post-curing: 1h at 70°C + 24 h at room temperature**

	Standard	Unit	Values
Hardness	ISO 868 : 2003	Shore D1	84
Flexural modulus	ISO 178 : 2011	MPa	3000
Maximum flexural strength	ISO 178 : 2011	MPa	111
Heat deflexion temperature (Hdt)	ISO 75-2 : 2013 method B	°C	75
Tensile Modulus	ISO 527-1 : 2012	MPa	3100
Elongation at break	ISO 527-1 : 2012	%	3
Tensile strength at break	ISO 527-1 : 2012	MPa	70
Charpy impact resistance	ISO 179-1/1eUb : 2010	kJ/m²	51

- **Average values obtained after post-curing: 2h at 70°C + 2h at 100°C + 24 h at room temperature**

	Standard	Unit	Values
Hardness	ISO 868 : 2003	Shore D1	84
Flexural modulus	ISO 178 : 2011	MPa	2850
Maximum flexural strength	ISO 178 : 2011	MPa	119
Heat deflexion temperature (Hdt)	ISO 75-2 : 2013 method B	°C	105
Glass transition temperature (Tg)	ISO 6721-10 : 2015	°C	112
Tensile modulus	ISO 527-1 : 2012	MPa	2900
Maximum tensile strength	ISO 527-1 : 2012	MPa	84
Elongation at maximum strength	ISO 527-1 : 2012	%	6
Elongation at break	ISO 527-1 : 2012	%	11
Tensile strength at break	ISO 527-1 : 2012	MPa	68
Charpy impact resistance	ISO 179-1/1eUb : 2010	kJ/m²	>100 (does not break)
	ISO 179-1 /1 fUc	kJ/m²	80
	ISO 179-1/1eAb : 2010 Notched specimen	Kj/m²	6

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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.

Operating conditions:

➔ Application process in a vacuum casting machine:

1. Preheat the polyaddition silicone mould at 70°C.
2. Rehomogenise and weigh the separate components (upper cup: Polyol / lower cup: Iso), with addition of the necessary residual quantity in the upper cup. Then, put the cups inside the vacuum casting machine. If a pigment is added, it should imperatively be mixed to the polyol component. A 1 to 3% rate of the total product quantity (polyol + isocyanate) is recommended.
3. Degas the products during 10 minutes, with agitation in the lower cup (Iso).
4. Stop the agitation and pour the content of the upper cup (Polyol) into the lower cup (Iso).
5. Start the agitation and mix for at least 2 minutes.
6. Slightly release the vacuum in the chamber to a pressure of about 100 hPa (0,1bar).
7. Cast the mixture into the silicone mould until complete filling.
8. Break the vacuum back to atmospheric pressure.
9. Place the mould in an oven at 70°C.
10. Demoulding is possible after:
    - 50 - 60 minutes at 70°C, depending on the thickness of the part.

In order to obtain the mechanical properties of the material, it is necessary to realise a complete curing, demoulding time included, of:

- Minimum post-curing: 2h at 70°C + 24h at room temperature
- Optimal curing time: 2h at 70°C + 2h at 100°C + 24h at room temperature

Packaging:

• Box of 4 kits of (1,0 kg polyol + 2 x 1,0 kg isocyanate) = 12 kg

• Box of 2 kits of (5,0 kg polyol + 2 x 5,0 kg isocyanate) = 15 kg

Storage:

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

Observations:

The final product colour can vary depending on its exposure to UV light, without altering its mechanical properties. Depending on the transport and storage conditions, crystallization can happen in the isocyanate component. In this case, place it in an oven at 70°C until the product is homogeneous again.