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PR777

References :

Polyol : PR777-POLYOL-ST777000 **Isocyanate : PR7SERIES-ISO-ST000401** **Fiber glass filler : SynFill G**

Definition :

➔ **PR777 :**

Polyurethane resin for the production of PP / PE / HDPE-like parts in vacuum casting.
Good flowability, low aggressiveness to silicone moulds.
Colorable material.
REACH compatible material meeting the requirements of the 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

➔ **PR777 + SynFill G :**

- « **SynFill G** » fiberglass filler allows one to increase the rigidity of the parts and some mechanical and thermal characteristics.
- Three filler rates are available in order to guarantee the best compromise between the flowability and the product performances.
- High modulus of elasticity up to 2200 MPa in traction with 25% of filler.
- Improvement of the maximum stresses in traction and flexion.

Average physical properties of the components :

	PR777 Polyol ST 777 000	PR7 Series Iso ST 000 401	Mix ST 777 401	Mix +15% SynFill G	Mix + 20% SynFill G	Mix +25% SynFill G
Aspect - Colour	Amber liquid	Transparent liquid	Translucent liquid Milky solid	Translucent liquid Milky solid	Translucent liquid Milky solid	Translucent liquid Milky solid
Brookfield LVT Viscosity (mPa.s) According to MO-051	230	1200	700	800	940	1100
Density at 25°C According to MO-032	1,10	1,16	1,13	1,22	1,24	1,27

Application properties :

	PR777 Polyol ST 777 000	PR7 series Iso ST 000 401	Mix ST 777 401	Mix +15% SynFill G	Mix + 20% SynFill G	Mix +25% SynFill G
Mixing ratio by weight	100	100	-	30	40	50
Mixing ratio By volume	100	95	-	-	-	-
Potlife on 200g at 25°C According to MO-062			10 min.	10 min.	10 min.	10 min.
Demoulding time at 70°C (min.) According to MO-116			45 min.	45 min.	45 min.	45 min.
Minimum curing time	2h 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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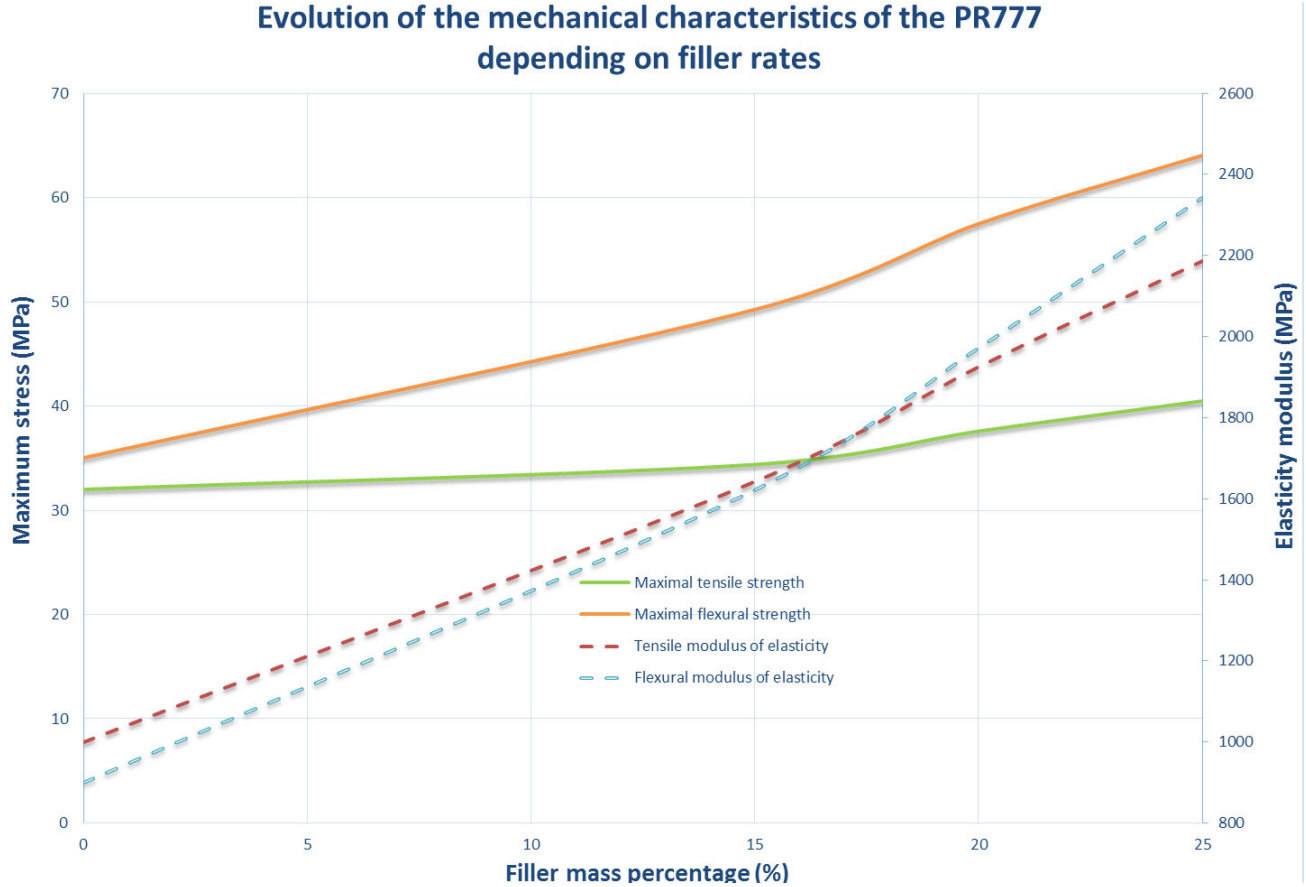

Average mechanical and thermal properties of the cured material :

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

	Test standard	Unit	Values without filler	15% SynFill G	20% SynFill G	25% SynFill G
Hardness	ISO 868 : 2003	Shore D1	75	78	79	80
Flexural modulus	ISO 178 : 2011	MPa	900	1600	2000	2300
Maximum flexural strength	ISO 178 : 2011	MPa	35	50	58	64
Tensile modulus of elasticity	ISO 527-1 : 2012	MPa	1000	1600	1900	2200
Elongation at break	ISO 527-1 : 2012	%	35	25	11	7
Maximum tensile strength	ISO 527-1 : 2012	MPa	34	34	38	40
Charpy impact resistance	ISO 179-1 : 2010 unnotched-1eU[b]	KJ/m²	60	37	28	27
Heat deflection temperature (HDT)	ISO 75-2 : 2013 Method A	°C	-	76	82	86
	ISO 75-2 : 2013 Method B	°C	94	-	-	-
Transition glass Temperature (Tg)	ISO 6721-10 : 2015	°C	> 120	-	-	-

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Hygiene and safety instructions for using :

Wearing appropriate safety clothes and accessories (gloves, glasses and mask) 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 :

1. Pre-heat the polyaddition silicone mould at 70°C
2. Weigh the separated components (Upper cup: Polyol / Lower cup: Iso), with addition of the necessary residual quantity in the upper cup. If Synfill G filler is added, weigh the needed quantity in the lower cup. Then, put the cups and the mould inside the vacuum casting machine.
3. Degas for 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 1 minute.
6. 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 mould in an oven at 70°C.
10. Demoulding is possible after :
    - 45 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 curing time : 2h at 70°C + + 24 h at room temperature
    - Optimal curing time : 2h at 70°C + 2h at 100°C + 24 h at room temperature

Packaging :

PR777 :

- Box of 2 kits of (5,0 kg polyol + 5,0 kg isocyanate) = 20kg
- Box of 6 kits of (1,0 kg polyol + 1,0 kg isocyanate) = 12kg

Synfill G :

- Box of 30 kg
- Pail of 10 kg

Storage :

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

Comment :

The cured product colour may vary depending on its exposure to UV, without changing the other characteristics.

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