

PRA730

References :

Polyol: PRA730-POLYOL-SH130000

Isocyanate: PRA730-ISO-SH000402

Definition :

→ **PRA730 :**

Polyurethane resin for the realisation of flame-retardant ABS-like parts with the vacuum casting process, meeting the requirements of the FAR.25.853 standard, intended for a use in the aeronautic field. Dark grey material, with a low aggressiveness to silicone moulds. Good chemical and high thermal resistance.

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 :

	PRA730 Polyol SH 130 000	PRA730 Iso SH 000 402	PRA730 Mix SH 130 402
Aspect - Colour	Black liquid	Colourless transparent liquid	Dark grey liquid Dark grey solid
Brookfield LVT viscosity (mPa.s) According to MO-051	4000	1600	2500
Density at 25°C According to MO-032	1,25	1,11	1,20

Application properties :

	PRA730 Polyol SH 130 000	PRA730 Iso SH 000 402	PRA730 Mix SH 130 402
Mixing ratio by weight	100	72	
Mixing ratio by volume	100	81	
Mixing time at 25°C			1 min.
Potlife on 172g at 25°C According to MO-062			8 min.
Demoulding time at 70°C (on 3mm) According to MO-116			45 min.
Optimal curing time	1h at 70°C + 1h at 100°C + 2h at 120°C + 24h at room temperature		

The values mentioned on this document are based on tests and researches carried out in SYNTHENE's laboratory, in precise conditions. This document cannot be, in any case, considered as a specification data sheet. It is the responsibility of the users to check the suitability of the product in their own conditions, defined and tried by themselves. Synthene company disclaims any responsibility for any consequence occurred by the use of this product.

Average mechanical and thermal properties of the cured material :

- **Average values obtained after post-curing : 1h at 70°C + 1h at 100°C + 2h at 120°C + 24h at room temperature**

	Standard	Unit	Values PRA730
Hardness	ISO 868 : 2003	Shore D1	81
Flexural modulus	ISO 178 : 2011	MPa	2100
Maximum flexural strength	ISO 178 : 2011	MPa	63
Tensile modulus	ISO 527-1 : 2012	MPa	2300
Elongation at break	ISO 527-1 : 2012	%	4
Tensile strength at break	ISO 527-1 : 2012	MPa	41
Charpy impact resistance	ISO 179-1 : 2010 unnotched-1eU ^b	KJ/m ²	16
Heat Deflection Temperature (HDT)	ISO 75-2 : 2013 method B	°C	120
Glass transition temperature (T _g)	ISO 6721-10 : 2015	°C	>130
Self-extinguishing	FAR.25-25.853 (a)	-	Compliant - 2 mm thickness

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 separated components (upper cup : Iso / lower cup : Polyol), with addition of the necessary residual quantity in the upper cup. Then, put the cups inside the vacuum casting machine.
3. Degas the products during 10 minutes, with agitation in the lower cup (Polyol).
4. Stop the agitation and pour the content of the upper cup (Iso) into the lower cup (Polyol).
5. Start the agitation and mix for at least 1 minute.
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.

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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 :

- Optimal curing time : 1h at 70°C + 1h at 100°C + 2h at 120°C + 24h at room temperature

Packaging :

- Box of 2 kits of (5,0 kg polyol + 3,6 kg isocyanate) = 17,2 kg

Storage :

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