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PRA794

References :

Polyol : PRA794-POLYOL-SH194000 **Isocyanate : PR751-PRA794-ISO-SH000401**

Definition :

→ **PRA794 :**

Self-extinguishing polyurethane resin according to the UL94 V0 standard. **Yellow card file n° E523647,** halogen-free resin. Dark brown/black 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 :

	PRA794 Polyol SH 794 000	PR751 - PRA794 Iso SH 000 401	PRA794 Mix SH 794 401
Aspect - Colour	Dark brown liquid	Colourless transparent liquid	Dark brown/black liquid Dark brown/black solid
Brookfield LVT viscosity (mPa.s) According to MO-051	1000	1200	1100
Density at 25°C According to MO-032	1,16	1,15	1,16

Application properties :

	PRA794 Polyol SH 794 000	PR751 - PRA794 Iso SH 000 401	PRA794 Mix SH 794 401
Mixing ratio by weight	80	100	
Mixing ratio by volume	79	100	
Mixing time at 25°C			1 min.
Potlife on 180g at 25°C According to MO-062			7-8 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.

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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 PRA794
Hardness	ISO 868 : 2003	Shore D1	80
Flexural modulus	ISO 178 : 2011	MPa	1900
Maximum flexural strength	ISO 178 : 2011	MPa	65
Tensile modulus	ISO 527-1 : 2012	MPa	2300
Elongation at break	ISO 527-1 : 2012	%	5
Tensile strength at break	ISO 527-1 : 2012	MPa	57
Charpy impact resistance	ISO 179-1 : 2010 unnotched-1eU[b]	KJ/m²	20
Heat Deflection Temperature (HDT)	ISO 75-2 : 2013 method B	°C	130
Glass transition temperature (Tg)	ISO 6721-10 : 2015	°C	>130
Self-extinguishing	UL94 V0 - **Yellow card E523647** EN 60695-11-10 : 2013	-	V0 on 3 and 4 mm
	5V- EN 60695-11-20 : 2015	-	5VA and 5VB on 3mm

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 (4,0 kg polyol + 5,0 kg isocyanate) = 18 kg

Storage :

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

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