

PRC1819

References :

Polyol : PRC1719-PRC1819-POLYOL-SL121000
Isocyanate : PRC1810-1819-ISO-SL000221

Definition :

Water-clear transparent polyurethane casting resin for the prototyping of parts similar to PMMA or PC. Very good UV resistance. Colorable material. Good thermal properties.

Product in accordance 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 :

	PRC1719-PRC1819 Polyol SL121000	PRC1810-1819 Iso SL000221	PRC1819 Mix
Aspect – Color	Colorless transparent liquid	Colorless transparent liquid	Colorless transparent solid
Brookfield Viscosity LVT (mPa.s) According to MO-051	450	450	450
Density at 25°C According to MO-032	1.08	1.10	1.10

Application properties :

Mixing ratio by weight	56	100	
Mixing time at 25°C (sec.)			210
Potlife on 100g at 25°C (min.) According to MO-062			19
Demolding time at 70°C on 3mm (min.) According to MO-116			180

Average mechanical and thermal properties of the cured material :

- Average data obtained after stabilization 3h at 70°C + 16h at 100°C + 24h at room temperature

	Standard	Data
Shore D1 hardness	ISO 868-2003	85
Heat Deflection Temperature (HdT) (°C)	ISO 75-2 : 2013	86
Glass transition temperature (Tg) (°C)	ISO 6721-10 : 2015	95
Flexural modulus (MPa)	ISO178 : 2011	2100
Maximum flexural stress (MPa)	ISO178 : 2011	80
Tensile modulus (MPa)	ISO 527-1 : 2012	2100
Maximum tensile stress (MPa)	ISO 527-1 : 2012	60
Elongation at maximum stress (%)	ISO 527-1 : 2012	14
Impact resistance – Charpy (kJ.m ⁻²)	ISO 179-1/1eU ^b : 2010	90
Refractive index at 20°C	ISO 489 : 1999	1.51
Hazen coloration on 50 mm	ISO 2211 : 1973	< 30
QUV-B (313 nm) accelerated ageing. ΔE after 1000 hours		In progress

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

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 :

Pre-heat the polyaddition silicone molds at 70°C.
Rehomogenize the polyol component before using.
Weigh the isocyanate component in the upper cup (without forgetting the casting residues).
Weigh the polyol component in the lower cup (mixing cup)
After 10 minutes of vacuum, pour the isocyanate component into the polyol component and mix until total clearness of the mixing (at least 3 minutes for a process at 25°C).
Pour in the silicone mold.
Put the mold in an oven at 70 °C.
Demolding possible after 3 hours at 70°C (depending on the thickness of the part), slightly cool down the part with pressurized air in order to extract the casted part from the mold. In case of slight distortion, place the part in the oven again at 70°C for it to go back to its original shape.
Then a post curing is necessary to reach maximal characteristics.

Process with manual casting :

Pre-heat the polyaddition silicone molds at 70°C.
Rehomogenize the polyol component before using.
Weigh the polyol component and the isocyanate component in a clean mixing cup.
Duly mix, making sure that the product gets completely homogeneous and clear (approx. 3 min.).
Pour the mixing in a second clean cup without scraping the cliffs and bottom of the first cup (to prevent problems linked to bad mixing), mix again with clean spatula, during approximately 30 seconds.
Place the second cup under vacuum in order to degas the mixing.
Pour in the mould in one go in order to avoid air incorporation during the casting process (if possible, cast from a low point).
Place in an oven at 70°C.
Demolding is possible after 3 hours at 70°C (depending on the thickness of the part), slightly cool down the part with pressurized air in order to extract the casted part from the mold. In case of slight distortion, place the part in the oven again at 70°C for it to go back to its original shape.
Then a post curing is necessary to reach maximal characteristics.

Packaging :

- Parcel of 6 x (0.6 + 1.07) kg
- Parcel of 2 x (3.0 + 5.4) kg

For any other packaging, please consult us.

Storage :

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