

Similar to PP
UP 5690

APPLICATIONS

Casting for production of prototype parts and mock-ups having mechanical properties like PP and HDPE, such as instrument panel, bumper, equipment box, cover and anti-vibration tools.

PROPERTIES

- 3-components polyurethane for vacuum casting
- Flexural modulus adjustable
- High elongation
- High impact resistance, no breakable
- Easy processing
- Good flexibility

PHYSICAL PROPERTIES

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		UP 5690 AW or AK	UP 5690 B	UP 5690 C	MIXED
Composition		Polyol	Isocyanate	Polyol	Polyol
Mix ratio by weight		100	100	0 - 50	0 - 50
Aspect		liquid	liquid	liquid	liquid
Colour		AW= White AK= Black	Colourless	Milk white	AW/B/C=White AK/B/C=Black
Viscosity at 23°C (mPa.s)	BROOKFIELD LVT	1000 - 1500	140 - 180	4500 - 5000	500 - 700
Viscosity at 40°C (mPa.s)	BROOKFIELD LVT	400 - 600	-	2300 - 2500	300 - 500
Specific gravity at 25°C	ISO 1675 :1975	1.06	1.15	1.06	-
Specific gravity of cured product at 23°C	ISO 2781 :1988	-	-	-	1.13
Pot life at 25°C on 100 g (min)					10 - 15
Pot life at 40°C on 100 g (min)					5 - 7

PROCESSING CONDITIONS (Vacuum casting machine)

- Preheat Part B (isocyanate) to 23 - 30°C in case of being stored below 20°C .
- Preheat Part A and Part C to 40°C before using.
- Weigh the components according to the mixing ratio, put Part B into the upper cup, add Part C in Part A to premix.
- Pour Part B (isocyanate) into Part A (containing Part C) and mix for 1 - 2 minutes after degassing for 10 minutes seperately.
- Cast under vacuum in silicone mould preheated to 70°C.
- Demould after 60 - 90 minutes at 70°C (The more Part C is used, the longer demoulding time is needed).

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MECHANICAL PROPERTIES at 23°C(1)						
A/B/C			100/100/0	100/100/20	100/100/30	100/100/50
Hardness	ISO 868 : 2003	Shore D	83	80	78	75
Tensile strength	ISO 527 : 1993	MPa	35	30	28	25
Flexural strength	ISO 178 : 2001	MPa	50	35	30	20
Flexural modulus	ISO 178 : 2001	MPa	1300	1000	900	600
Elongation at break	ISO 527 : 1993	%	50	60	65	90
Impact strength (CHARPY) Unnotched specimens	ISO 179/2D : 1994	kJ/m ²	100	90	85	75

THERMAL AND SPECIFIC PROPERTIES					
A/B/C		100/100/0	100/100/20	100/100/30	100/100/50
Glass transition temperature (Tg) (1)	°C	In process	In process	In process	In process
Linear shrinkage	%	0.35	0.35	0.35	0.35
Demoulding time (2 - 3mm) at 70°C	min	60 - 90			

(1) : Average values obtained on standard specimens / Hardening 16hr at 80°C after demoulding

