

APPLICATIONS

Used by casting in silicone molds for the production of prototype parts and mock-ups with mechanical properties close to those of thermoplastics.

PROPERTIES

- Low viscosity for easy casting
- Good impact and flexural resistance
- Temperature resistance above 248°F (120°C)
- Low aggressiveness against silicon molds

PHYSICAL PROPERTIES				
		PART A	PART B	MIXING
Composition		ISOCYANATE	POLYOL	
Mixing Ratio by Weight		100	80	
Aspect		liquid	liquid	liquid
Color		colorless	black	black
Viscosity at 77°F (25°C) (mPa.s)	BROOKFIELD LVT	1,100	300	850
Density of parts before mixing at 25°C	ISO 1675 :1975	1.17	1.12	-
Density of cured mixing at 23°C	ISO 2781 :1988	-	-	1.14
Pot life at 25°C on 90g (min.)	-			6 - 7

PROCESSING (Vacuum casting machine)

- Vacuum casting into silicone molds.
- Both parts have to be processed at a temperature above 65°F (18°C).
- **Important: Remix part B before each weighing.**
- Degas each part before use.
- Mix for approximately 45 seconds.
- Cast in a mold pre-heated at 158°F (70°C) minimum.
- Allow to cure 45 to 70 minutes at 158°F (70°C) before demolding
- Carry out the following postcure: 1 hr at 158°F (70°C) + 1 hr at 212°F (100°C) + 12 hr at 230°F (110°C).

NOTE : After demolding it's necessary to support the part in the oven to maintain its shape during post cure. Ensure that the geometry or the mass of the part does not present any deformation risk.

HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

- ensure good ventilation
- wear gloves and safety glasses

For further information, please consult the material safety data sheet.



PX 223 HT

VACUUM CASTING SYSTEM FOR TECHNICAL PARTS AND PROTOTYPES

FLEXURAL MODULUS 334,000 psi (2,300 MPa) – Tg 248°F (120°C)

MECHANICAL PROPERTIES AT 23°C ⁽¹⁾			
Flexural modulus of elasticity	ISO 178 :2001	psi (MPa)	334,000 (2,300)
Flexural strength		psi (MPa)	11,600 (80)
Tensile strength	ISO 527-2 :1993	psi (MPa)	8,700 (60)
Elongation		%	11
Charpy impact resistance	ISO 179/2D :1994	ft-lb/in ² (kJ/m ²)	>29 (>60) ¹
Izod Impact - Notched	ASTM D256-05	ft-lb/in ² (kJ/m ²)	3 (6)
Izod Impact - Unnotched	ASTM D256-05	ft-lb/in ² (kJ/m ²)	>8 (>16) ¹
Hardness	ISO 868 :2003	Shore D1	at 73°F (23°C)
			at 248°F (120°C)
			80
			>65

¹ Samples tested did not break. This value represents impact energy with no fracture.

THERMAL AND SPECIFIC PROPERTIES ⁽¹⁾			
Glass Transition Temperature (Tg)	ASTM E1545	°F (°C)	248 (120)
Coefficient of linear thermal expansion (C _L TE) [+59, +248]°F ([+15, +120]°C)	ISO 11359-2 :1999	ppm/°F (°C)	64 (115)
Maximal casting thickness	-	In. (mm)	0.2 – 0.4 (5 – 10)
Linear shrinkage in aluminum mold (250 x 50 x 3 mm)	after demolding after post curing ¹	%	0.5
			0.8
Linear shrinkage in silicone mold (250 x 50 x 3 mm)	after post curing ¹	%	0

⁽¹⁾ : Average values obtained on standardized specimens / postcure 1 hr at 158°F (70°C) + 1 hr at 212°F (100°C) + 12 hr at 230°F (110°C)

STORAGE CONDITIONS

Shelf life is 12 months in a dry place and in the original unopened containers at a temperature between 59 – 77°F (15 and 25°C). Any opened container must be tightly closed under a dry gas blanket.

GUARANTEE

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