

PX 223/HT

**VACUUM CASTING POLYURETHANE RESIN
FOR TECHNICAL PARTS AND PROTOTYPES**
FLEXURAL MODULUS 2,300 MPa - Tg 120 °C

APPLICATIONS

Used by casting in silicone moulds for the realisation of prototype parts and mock-ups whose mechanical properties are close to those of thermoplastics.

PROPERTIES

- Low viscosity for easy casting
- Good impact and flexural resistance
- Temperature resistance above 120 °C

PHYSICAL PROPERTIES				
Composition		ISOCYANATE PX 223 HT	POLYOL PX 223 HT	MIXING
Mixing ratio by weight at 25 °C		100	80	
Aspect		liquid	Liquid	liquid
Colour		colorless	black	black
Viscosity at 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.)	Gel Timer TECAM			6 - 7

PROCESSING (Vacuum casting machine)

- Vacuum casting into silicone moulds.
- Both parts have to be processed at a temperature above +18 °C.
- **Important : Rehomoogenize the part Polyol before each weighing.**
- Degas each part before use.
- Mix for 45 seconds to 1 minute.
- Cast in a mold pre-heated at 40 °C minimum.
- Allow to cure 45 to 75 minutes at 70 °C before demoulding
- Carry out the following thermal treatment : 1 hr at 100 °C + 2 hr at 110 °C or more if possible.

NOTA : After demoulding it is not necessary to use a conformer to maintain the part in the oven during the post curing. Nevertheless it is advisable to 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 product safety data sheet.

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MECHANICAL PROPERTIES AT 23 °C ⁽¹⁾

Flexural modulus of elasticity	ISO 178 :2001	MPa	2.300
Flexural strength	ISO 178 :2001	MPa	80
Tensile strength	ISO 527 :1993	MPa	60
Elongation at break in tension	ISO 527 :1993	%	11
Charpy impact resistance	ISO 179/2D :1994	kJ/m ²	> 60
Hardness - at 23 °C - at 120 °C	ISO 868 :1985	Shore D1	80 > 65

THERMAL AND SPECIFIC PROPERTIES ⁽¹⁾

Glass transition temperature	T.M.A.-Mettler	°C	> 120
Coefficient of linear thermal expansion (C _L TE) [+15, +120] °C	T.M.A.-Mettler	ppm/K	115
Linear shrinkage (cast in silicone mould)	3 X 50 X 250 mm	mm/m	4
Maximal casting thickness	-	mm	5 - 10

(1) : Average values obtained on standardized specimens / Hardening 1 hr at 70 °C + 1 hr at 100 °C + 12 hr at 110 °C

STORAGE CONDITIONS

Shelf life of Polyol and Isocyanate is 12 months in a dry place and in their original unopened containers at a temperature between 15 and 25 °C. Any open can must be tightly closed under dry nitrogen blanket.

PACKAGING

ISOCYANATE
6 x 1.0 kg
1 x 5.0 kg

POLYOL
6 x 0.80 kg
1 x 4.0 kg