

TECHNICAL DATA SHEET

PX 223 HT

POLYURETHANE CASTING / VACUUM CASTING SYSTEM FOR TECHNICAL AND PROTOTYPE PARTS – 80 SHORE D HARDNESS

DESCRIPTION

Polyurethane Casting system for use with silicone molds prototype parts and mock-ups whose mechanical properties are close to those of thermoplastics.

APPLICATIONS

- *Prototype parts and mock-ups*
- *Flexural modulus 334,000 psi*
- *Thermoplastic aspect*

PROPERTIES

- *Low viscosity*
- *Fast gel time*
- *Flexural modulus 334,000 psi*
- *Good impact and flexural strength*
- *248°F Tg heat resistance with post-cure*
- *Low aggressiveness against silicone molds*

PHYSICAL PROPERTIES

Handling Properties @ 77°F (25°C)				
	Units	Part A	Part B	Mixed
Composition		Isocyanate	Polyol	
Mix Ratio (by weight)		100	80	100/80
Aspect		Liquid	Liquid	Liquid
Color	Visual	Colorless	Black	Black
Specific Gravity	lbs./gal (g/cc)	9.8 (1.17)	9.3 (1.12)	9.5 (1.14) Cured
Viscosity	Cps	1100	300	850
Pot Life (90 gram mass)	Minutes			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.

Typical Physical Properties @ 77°F (25°C) ⁽¹⁾			
	Test Method	Units	Test Results
Color	Visual		Black
Hardness	ISO 868 :2003	Shore D	80
Tg (TMA)	ASTM E1545	°F (°C)	248 (120)
Coefficient of thermal expansion	ISO 11359-2 :1999	ppm/°F (°C)	64 (115)
Flexural Strength	ISO 178 :2001	psi (MPa)	11,600 (80)
Flexural Modulus	ISO 178 :2001	psi (MPa)	334,000 (2,300)
Tensile Strength	ISO 527-2 :1993	psi (MPa)	8,700 (60)
Elongation	ISO 527-2 :1993	%	11
Impact Strength Notched - Unnotched -	ASTM D256-05	ft.- lb/in ² (kJ/m ²)	3 (6) > 8 (>16) ²
Charpy impact resistance	ISO 179/2D :1994	ft.- lb/in ² (kJ/m ²)	>29 (>60) ²
Linear shrinkage in silicone mold (250 x 50 x 3 mm)	After postcuring	%	0
Maximal casting thickness		In./(mm)	0.2 – 0.4 (5 - 10)

(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)

(2) Samples tested did not break. This value represents impact energy with no fracture

HANDLING PRECAUTIONS

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

- Ensure good ventilation.
- Wear gloves, glasses and protective clothes.

For further information, please consult the Safety Data Sheets.

STORAGE CONDITIONS

- This product has a shelf life of 12 months for the resin and hardener as indicated by the expiration date on the container when stored in original unopened containers.
- Store closed containers at 65°F-85°F (18°C-29°). Partially used containers must be flushed with dry nitrogen and resealed. Materials are sensitive to moisture contamination.

PACKAGING

Packaging information on request, please contact your local sales representative or find your local contact on www.sikaadvancedresins.us

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February 19, Version 01 /2021