BUILDING TRUST

TECHNICAL DATA SHEET

PX 523

POLYURETHANE CASTING SYSTEM
FOR TRANSPARENT CLEAR PROTOTYPES – 75 SHORE D HARDNESS

DESCRIPTION

Polyurethane Casting system for use with silicone molds for transparent prototype parts up to a 4 inch (101 mm) thickness. Flexural modulus 321,000 psi (2,215 Mpa). Crystal clear glass-like parts for models, fashion, jewelry, stained glass repair, art and decoration parts

APPLICATIONS

- *Transparent (water clear) prototyping applications*
- *Models*
- *Fashion*
- *Jewelry*
- *Stained glass repair*
- *Art/decorative parts*

PROPERTIES

- *Transparent (water clear)*
- *Easily pigmentable*
- *237°F heat resistance with post-cure*
- *Very low mixed viscosity*
- *Easy to polish*
- *Excellent UV resistance (non-yellowing)*
- *Mercury free*

PHYSICAL PROPERTIES

Handling Properties @ 77°F (25°C)				
	Units	PX 5210	PX 523	Mixed
Mix Ratio (by weight)		100	56	100/56
Mix Ratio (by volume)				100/56
Color	Visual	Clear	Clear	Clear
Specific Gravity	lbs./gal (g/cc)	8.9 (1.07)	8.9 (1.07)	8.8 (1.06) (cured)
Viscosity	Cps	150 - 250	1000 - 2000	400 - 600
Pot Life (156 gram mass)	Minutes			15 - 20

PROCESSING CONDITIONS (*PX 5210/PX 523 can be used manually or in a vacuum casting machine.):*

Both Part A and Part B need to be between 68°F – 77°F (20°C – 25°C) for best results	
Manual Processing	***Vacuum Chamber Processing***
Up to 4 inches (101 mm) thick	***Up to 4 inches (101 mm) thick***
Silicone mold at 158°F (70°C)	***Silicone mold at 158°F (70°C)***
*Mix manually for **3 minutes***	*Weigh part A in the upper cup (allow a little extra for cup retention) and weigh part B in the lower cup (mixing cup).*
Degas under vacuum (29 inches Hg (737 mm Hg) or greater recommended) for 5 to 10 minutes maximum.	*Degas under vacuum (29 inches Hg (737 mm Hg) or greater recommended) for 10 minutes and pour part A into part B and mix for **2 to 3 minutes**.*
Pour into preheated mold, do not put into vacuum. May be placed in pressure pot prior to oven cycle.	*When the mold is filled as indicated by flow from the vents if a closed mold, release vacuum. May be placed in pressure pot prior to oven cycle.*

- *After casting into 158°F (70°C) mold, place into an oven at 158°F (70°C) for these recommended minimum times prior to demolding:*
  - *3 hours for up to 0.08 inches (2 mm) thickness.*
  - *2 hours for 0.08 - 0.5 inches (2 mm - 12 mm) thickness.*
  - *1 hour for 0.5 – 4 inches (12mm – 101 mm) thickness.*

After a full post-cure to prevent any yellowing of the cast part, do not exceed the following cure times/temperatures: 48h at 176°F (80°C) or 12h at 194°F (90°C) or 6h at 212°F (100°C).

Typical Physical Properties @ 77°F (25°C)*			
	Test Method	Units	Test Results
Hardness	ASTM D-2240	Shore D	75
Tg (TMA)	ASTM E 1545-00	°F (°C)	237 (114)
Flexural Strength	ASTM D-790	psi (MPa)	15,000 (104)
Flexural Modulus	ASTM D-790	psi (MPa)	321,000 (2,215)
Tensile Strength	ASTM D-638	psi (MPa)	10,200 (70.4)
Tensile Modulus	ASTM D-638	psi (MPa)	166,000 (1,145)
Elongation	ASTM D-638	%	12.9
Compressive Strength	ASTM D-695	psi (MPa)	12,800 (88)
Compressive Modulus	ASTM D-695	psi (MPa)	164,000 (1132)
Impact Strength notched	ASTM D 256-05	Ft.- lb/in2 (KJ/m2)	0.93 (1.95)
Impact Strength unnotched	ASTM D 256-05	Ft.- lb/in2 (KJ/m2)	>7.3** >(15.3)

***** Recommended post cure: 4 hrs/60°C + 16 hrs/100°C (ramp rate 30°C/hr)

****** Sample did not break

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 24 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

LEGAL NOTICE

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