



BUILDING TRUST



PX 5210 ISOCYANATE PX 5213 POLYOL

VACUUM CASTING POLYURETHANE
FOR TRANSPARENT PROTOTYPES IN LARGE VOLUME
FLEXURAL MODULUS 2,100 MPa – HDT 85°C

APPLICATIONS

Casting in silicone moulds : transparent prototype parts until 100 mm thickness : crystal glass like parts, art and decoration parts.

PROPERTIES

- High transparency (water clear)
- Easy polishing
- High reproduction accuracy
- Good U.V. resistance
- Easy processing

PHYSICAL PROPERTIES				
Composition		PX 5210 ISOCYANATE	PX 5213 POLYOL	MIXING
Mixing ratio by weight		100	62	
Aspect		liquid	liquid	liquid
Colour		transparent	bluish transparent	transparent
Viscosity at 25°C (mPa.s)	BROOKFIELD LVT	200	1,000	500
Density at 25°C (g/cm ³)	ISO 1675 : 1985	1.07	1.02	-
Density of the cure product at 23°C	ISO 2781 : 1996	-	-	1.06
Pot life at 25°C on 162g (min)	Gel Timer TECAM			20

PROCESSING CONDITIONS

The PX 5210 Iso – PX 5213 Polyol system can be used either manually or by vacuum casting machine.

For manual utilisation : vacuum chamber needed

- Heat the mould at 70°C.
- Heat both parts at 20°C in case of storage at a lower temperature.
- Mix manually for 3 minutes.
- Degas under vacuum for 5 to 10 minutes maximum
- Pour in the mould.
- After casting, avoid degassing.
- Place in an oven at 70°C
 - 45 minutes for 100 mm thickness
 - 3 hours for 5 mm thickness
 - Open the mould, cooling the part with compressed air.
 - Remove the part.

NOTA: Elastic memory material offset any deformation observed during demoulding

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Vacuum casting machine utilisation:

- Heat the mould at 70°C.
- Heat both parts at 20°C in case of storage at a lower temperature.
- Weigh isocyanate in the upper cup (do not forget to allow for residual cup waste).
- Weigh polyol in the lower cup (mixing cup).
- After degassing for 10 minutes under vacuum isocyanate and polyol, mix for **2 to 3 minutes**.
- Cast in the silicone mould, previously heated at 70°C.
- Put in an oven at 70°C.
- Post curing process and demoulding time similar to manual casting (refer to previous chapter)

To prevent any yellowing of the cast part, do not exceed the following curing time: 7 days at 70°C or 48h at 80°C or 16h at 100°C

It is important to cast the PX 5210 Iso – PX 5213 Polyol system in a new mould without casting resin previously inside.

MECHANICAL PROPERTIES 23°C (1)			
Hardness	ISO 868 : 2003	Shore D1	86
Tensile modulus of elasticity	ISO 527 : 1993	MPa	2,600
Tensile strength	ISO 527 : 1993	MPa	68
Elongation at break in tension	ISO 527 : 1993	%	6
Flexural modulus of elasticity	ISO 178 : 2001	MPa	2,100
Flexural strength	ISO 178 : 2001	MPa	100
Choc impact strength (CHARPY)	ISO 179/1eU : 1994	kJ/m ²	42

THERMAL AND SPECIFIC PROPERTIES (1)			
Glass transition temperature (Tg)	ISO 11359-2 : 1999	°C	100
Heat deflection temperature	ISO 75 : 2004	°C	85
Maximal casting thickness	-	mm	100
Time before demoulding at 70°C (100mm)	-	min	45
Time before demoulding at 70°C (< 5 mm)		h	≥ 3

(1) Average values obtained on standardized specimens / Hardening 16h at 80°C



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STORAGE CONDITIONS

The shelf life of the **PX 5210 / PX 5213 system** 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.

HANDLING PRECAUTIONS

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

- Ensure good ventilation
- Wear gloves, safety glasses and waterproof clothes

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

PACKAGING

PX 5210 ISOCYANATE	PX 5213 POLYOL
3 x 1 KG	3 x 0.62 KG
1 x 5 KG	1 x 3.1 KG

GUARANTEE

The information contained in this technical data sheet result from research and tests conducted in our Laboratories under precise conditions. It is the responsibility of the user to determine the suitability of AXSON products, under their own conditions before commencing with the proposed application. AXSON guarantee the conformity of their products with their specifications but cannot guarantee the compatibility of a product with any particular application. AXSON disclaim all responsibility for damage from any incident which results from the use of these products. The responsibility of AXSON is strictly limited to reimbursement or replacement of products which do not comply with the published specifications.

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