PX 5210 ISOCYANATE
PX 5211 POLYOL

VACUUM CASTING POLYURETHANE
FOR TRANSPARENT PROTOTYPES IN LARGE VOLUME
FLEXURAL MODULUS 2,000 MPa – HDT 85°C

APPLICATIONS

Casting in silicone moulds : transparent prototype parts until a 50 mm thickness : crystal glass like parts, art and decoration part.

PROPERTIES

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

PHYSICAL PROPERTIES					
Composition			**ISOCYANATE PX 5210**	**POLYOL PX 5211**	**MIXING**
Mixing ratio by weight			100	60	
Aspect			liquid	liquid	liquid
Colour			transparent	bluish	transparent
Viscosity at 25°C	(mPa.s)	BROOKFIELD LVT	200	1,100	500
Density at 25°C Density of the cure product at 23°C	(g/cm^3)	ISO 1675 : 1985 ISO 2781 : 1996	1,07 -	1,05 -	- 1,06
Pot life at 25°C on 160g	(min)	Gel Timer TECAM			15

PROCESSING CONDITIONS

The PX 5211 can be use either manually or in a 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 degasing.*
- *Place in an oven at 70°C*
  - *1 hour for 50 mm thickness*
  - *2 hours for 10 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: 48h at 80°C or 12h at 90°C or 6h at 100°C

It is important to cast the PX 5211 in a new mould without casting resin previously inside.

MECHANICAL PROPERTIES 23°C (1)			
Hardness	ISO 868 : 2003	Shore D1	85
Tensile modulus of elasticity	ISO 527 : 1993	MPa	2,200
Tensile strength	ISO 527 : 1993	MPa	65
Elongation at break in tension	ISO 527 : 1993	%	7
Flexural modulus of elasticity	ISO 178 : 2001	MPa	2,000
Flexural strength	ISO 178 : 2001	MPa	100
Choc impact strength (CHARPY)	ISO 179/1eU : 1994	kJ/m^2	94

THERMAL AND SPECIFIC PROPERTIES (1)			
Glass transition temperature (Tg)	ISO 11359-2 : 1999	°C	90
Heat deflection temperature	ISO 75 : 2004	°C	85
Maximal casting thickness	-	mm	50
Time before demoulding at 70°C (50mm)	-	min	60
Linear shrinkage		mm/m	7.5

(1) Average values obtained on standardized specimens / Hardening 4h at 60°C + 16h at 80°C

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STORAGE CONDITIONS

Shelf life of both parts is 3 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

ISOCYANATE	*POLYOL*	*KIT PX 5210 / 5211*
5 Kg	*3 Kg*	*3x(1kg+0,6kg)*

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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