

## PRODUCT DATA SHEET

# SikaBiresin® PX523

VACUUM CASTING POLYURETHANE FOR TRANSPARENT PROTOTYPES IN LARGE VOLUME  
FLEXURAL MODULUS 2100 MPa – HDT 85 °C

## APPLICATIONS

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

## MAIN PROPERTIES

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

## DESCRIPTION

Basis	Two component polyurethane system
Component A	<b>SikaBiresin® PX521</b> , Isocyanate, transparent
Component B	<b>SikaBiresin® PX523</b> , Polyol, transparent bluish

## PHYSICAL PROPERTIES

Components			Isocyanate (A)	Polyol (B)
			<b>SikaBiresin® PX521</b>	<b>SikaBiresin® PX523</b>
Viscosity, 25 °C	mPa.s	BROOKFIELD LVT	~ 200	~ 1000
Density, 25 °C	g/cm <sup>3</sup>	ISO 1675 : 1985	1.07	1.02
Mixing ratio, 23 °C	in parts by weight		100	62
<b>Mixture</b>				
Colour			transparent	
Viscosity, 25 °C			500	
Pot life, 162 g, 25 °C	min	Gel Timer TECAM	20	
Maximum casting thickness	mm		100	

## MECHANICAL PROPERTIES

(Average values obtained on standardized specimens / 16 h at 100 °C)

Density, 23 °C	ISO 2781 : 1996	g/cm <sup>3</sup>	1.06
Shore hardness	ISO 868 : 2003	Shore D1	86
Tensile modulus of elasticity	ISO 527 : 1993	MPa	2600
Tensile strength	ISO 527 : 1993	MPa	68
Elongation at break in tension	ISO 527 : 1993	%	6
Flexural modulus of elasticity	ISO 178 : 2001	MPa	2100
Flextural strength	ISO 178 : 2001	MPa	100
Impact resistance (CHARPY)	ISO 179/1eU : 1994	kJ/m <sup>2</sup>	42

## THERMAL AND SPECIFIC PROPERTIES

(Average values obtained on standardized specimens / 16 h at 100 °C)

Glass transition temperature (T <sub>g</sub> )	ISO 11359-2 : 1999	°C	100
Refractive index	LNE		1.511
Heat deflection temperature	ISO 75 : 2004	°C	85
Demoulding time, 100 mm, 70 °C		min	45
Demoulding time, <5 mm, 70 °C		h	> 3

## PACKAGING UNITS

- SikaBiresin® PX521  
6 x 1 KG  
5 KG
- SikaBiresin® PX523  
6 x 0.62 KG  
3.1 KG

## 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.

## PROCESSING DATA

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SikaBiresin® PX521 – SikaBiresin® PX523 system can be used either manually or by vacuum casting machine.

**For manual utilization:** 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:
  - 45 minutes for 100 mm thickness
  - 3 hours for 5 mm thickness
  - Open the mould, cooling the part with compressed air
  - Remove the part.
  
- Elastic memory material offset any deformation observed during demoulding

**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 48 h at 80 °C or 16 h at 100 °C**
  
- **It is important to cast the SikaBiresin® PX521 - SikaBiresin® PX523 system in a brand-new mould without casting resin previously inside.**

## STORAGE CONDITIONS

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Shelf life	▪ Isocyanate (A), <b>SikaBiresin® PX521</b>	12 months
	▪ Polyol (B), <b>SikaBiresin® PX523</b>	12 months
Storage temperature	▪ Isocyanate (A), <b>SikaBiresin® PX521</b>	15 – 25 °C
	▪ Polyol (B), <b>SikaBiresin® PX523</b>	15 – 25 °C
Opened packagings	▪ Any open containers must be tightly sealed and stored in a dry place under dry nitrogen.	
	▪ Avoid storage for long time at a temperature over 25 °C.	

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## FURTHER INFORMATION

The information herein is offered for general guidance only. Advice on specific applications is available on request from the Technical Department of Sika Advanced Resins. Copies of the following publications are available on request: Safety Data Sheets

## BASIS OF PRODUCT DATA

All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## HEALTH AND SAFETY INFORMATION

For information and advice regarding transportation, handling, storage and disposal of chemical products, users shall refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

## LEGAL NOTICE

The information, and, in particular, the recommendations relating to the application and enduse of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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