

PRODUCT DATA SHEET

SikaBiresin® PX331

Vacuum casting polyurethane for technical parts and prototypes

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	SikaBiresin® PX331 (A)	SikaBiresin® PX331 (B)
Chemical base	Isocyanate	Polyol
Color	Yellowish	Off-white
	mixed	Off-white
Density	1.22 kg/l	1.37 kg/l
	cured	1.35 kg/l
Mixing ratio	by weight	100 : 100
Viscosity (CQP538-2 / BROOKFIELD LVT)	150 mPa·s	3000 mPa·s
	mixed	700 mPa·s
Pot life (CQP021-3 / Gel Timer TECAM)	200 g at 23 °C	6 minutes
Demolding time	thickness > 3 mm at 70 °C	45 minutes
	thickness < 3 mm at 70 °C	75 minutes
Maximum casting thickness	5 mm	
Shore D hardness (CQP023-1 / ISO 868)	86 ^A	
Flexural modulus (CQP027-2 / ISO 178)	3700 MPa ^A	
Flexural strength (CQP027-2 / ISO 178)	133 MPa ^A	
Flexural strain at flexural strength (CQP027-2 / ISO 178)	4.2 % ^A	
Tensile modulus (CQP036-2 / ISO 527)	4500 MPa ^A	
Tensile strength (CQP036-2 / ISO 527)	55 MPa ^A	
Elongation at break (CQP036-2 / ISO 527)	4 % ^A	
Impact resistance (CQP038-2 / ISO 179)	26 kJ/m² ^A	
Heat deflection temperature (CQP030-1 / ISO 75A)	90 °C ^A	
Glass transition temperature (CQP053-1 / ISO 11359)	100 °C ^A	
Shelf life	6 months	

CQP = Corporate Quality Procedure

^A) post curing: 70 °C for 1 hour + 80 °C for 16 hours

DESCRIPTION

SikaBiresin® PX331 is a 2-component vacuum casting polyurethane system for manufacturing of technical parts and prototypes.

PRODUCT BENEFITS

- Verified self-extinguishing behavior
- Good thermal properties
- Fast demolding
- Can be easily colored with CP colors

AREAS OF APPLICATION

SikaBiresin® PX331 is designed for manufacturing of prototype parts and mock-ups by vacuum casting in silicone molds. The Product possesses mechanical properties similar to thermoplastics like filled ABS.

This product is suitable for experienced professional users only. Tests under actual processing conditions and with additional materials such as coatings and release agents must be performed to proof material compatibility.

APPROVAL / CERTIFICATES

- UL 94 flammability rating: V-0 at 3 mm
- NF EN 60695-11-10 glow-wire test: V-0 at 3 mm
- FAR 25 §853 (B) aviation fire standard at 1.5 mm: compliant

METHOD OF APPLICATION

The material and processing temperature shall be between 18 °C and 25 °C. Temperature of a silicone mold shall be 70 °C. The material can only be used in a vacuum casting machine.

Mixing process

Prior to use check the material for homogeneity and crystallization. After prolonged storage at low temperature, crystallization of components may occur. This process can be easily reversed by heating the affected component to a maximum of 70 °C until the crystals have disappeared. Allow to cool down to requested processing temperature before use.

Prior to mixing component B must be shaken thoroughly.

If the Product needs to be pigmented, it is recommended to add 1 % into the polyol and mix it homogeneous. Ensure pigments are free of moisture prior application.

For the pigmentation of the vacuum casting resins CP Colors (in the future: SikaBiresin® Color Paste) must be used. These pigments have been tested and approved specifically for these products.

Weigh the isocyanate into the upper mixing cup according to the mixing ratio. Take into account the material residues that remain in the upper cup when it is emptied into the lower cup.

Weigh the polyol into the lower mixing cup according to the mixing ratio.

Both components shall be evacuated separately for 10 minutes.

After evacuation, both components shall be mixed in vacuum chamber at least for 1 minute, considering the pot life.

Note: Both containers must be closed tightly immediately after use to prevent moisture ingress.

Once opened the Product shall be used as soon as possible.

Application

Immediately after mixing pour the Product into the preheated silicone mold. After casting, place the mold in a preheated oven (70 °C) for 45 – 75 minutes, depending on the wall thickness of the parts.

Further post curing of the demolded part can improve the final mechanical properties.

Depending on the geometry and weight of the part, it is recommended to use a conformer while post curing.

STORAGE CONDITIONS

Both components must be stored at temperature between 15 °C and 25 °C in original unopened containers.

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 Industry.

Copies of the following publications are available on request:

- Safety Data Sheets

PACKAGING INFORMATION

SikaBiresin® PX331 (A)

Box with bottles	6 x 1 kg
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SikaBiresin® PX331 (B)

Box with bottles	6 x 1 kg
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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.

DISCLAIMER

The information, and, in particular, the recommendations relating to the application and end-use 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.

PRODUCT DATA SHEET

SikaBiresin® PX331
Version 01.01 (08 - 2026), en_DE
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