

PRODUCT DATA SHEET

SikaBiresin® PX840

VACUUM CASTING SOFT POLYURETHANE FOR PROTOTYPES AND TECHNICAL PARTS
VARIABLE HARDNESS FROM 25 TO 95 A SHORE

APPLICATIONS

- Using by casting under vacuum in silicone moulds to make soft prototype parts or small series of rubber like parts.
- Fully compatible with ESSIL 291 silicone moulds.

MAIN PROPERTIES

- 3 components for variable hardness
- Fixed mix ratio in between polyol & Isocyanate
- Easy to pigment with CP colors
- Low silicone molds aggressiveness
- Easy processing

DESCRIPTION

Basis	Three components polyurethane system
Component A	SikaBiresin® PX840 , Isocyanate, yellowish
Component B	SikaBiresin® PX840 , Polyol, transparent
Component C	SikaBiresin® PX840 , Extender

PHYSICAL PROPERTIES

			Isocyanate (A)	Polyol (B)	Extender (C)
Components			SikaBiresin® PX840	SikaBiresin® PX840	SikaBiresin® PX840
Viscosity, 25 °C	mPa.s	BROOKFIELD LVT	~ 700 ⁽¹⁾	~ 425	~ 900
Density, 25 °C	g/cm ³	ISO 1675 : 1985	1.20	1.00	1.02
Mixing ratio, 23 °C	in parts by weight		100	100	0 to 500
			Mixture		
Colour			Off white		
Viscosity, 25 °C			550 ⁽²⁾		
Pot life, 100 g, 25 °C	min	Gel Timer TECAM	11 – 14		
Maximum casting thickness	mm		20		

(1) POLYOL crystallizes below 15°C (Report to chapter Storage/crystallization).

(2) Depends of the mix ratio and final hardness; SEE PAGE 3 FOR HARDNESS vs. MIX RATIO

MECHANICAL PROPERTIES (in ratio 100 – 100 - 0)

(Average values obtained on standardized specimens /1 h at 70 °C + 16 h at 70 °C)

Density, 23 °C	ISO 2781: 1996	g/cm ³	1.14
Shore hardness	ISO 868: 2003	Shore A1	95
Tensile strength	ISO 37: 2004	MPa	20
Tear strength (unnotched specimens)	ISO 34: 2004	kN/m	60
Elongation at break in tension	ISO 527 : 1993	%	4

MECHANICAL PROPERTIES FOR SOME HARDNESS

(Average values obtained on standardized specimens /1 h at 70 °C + 24 h at 70 °C)

			Hardness Shore A		
			65	40	30
Tensile strength	ISO 37: 2004	MPa	15	7	6
Tear strength	ISO 34: 2004	MPa	29	10	9
Elongation at break	ISO 527 : 1993	%	680	690	690

HOW TO GET THE RIGHT HARDNESS:

Follow indicated mix ratio according to expected A sh Hardness

(Average values obtained on standardized specimens /1 h at 70 °C + 24 h at 70 °C)

Hardness Shore A	Isocyanate (A)	Polyol (B)	Extender (C)
95	100	100	0
85	100	100	50
75	100	100	75
65	100	100	150
60	100	100	200
50	100	100	250
40	100	100	350
30	100	100	450
25	100	100	500

THERMAL AND SPECIFIC PROPERTIES

(Average values obtained on standardized specimens / 1 h at 70 °C + 16 h at 80 °C)

Maximum working temperature		°C	70
Demoulding time at 70°C		min	120
Complete hardening time at 23°C	-	days	5

PROCESSING DATA

- Heat mould at 70 °C.
- Warm the product to 25-35 °C if stored at low temperature.
- IMPORTANT: Re-homogenize the Polyol and the Extender part before each weighing.
- Weigh the components according to the mixing ratio, add the extender in the polyol and pre-mix it.
- Add eventually the pigment in such Polyol (CP colors).
- Degas separately each part for 5-10 minutes.
- Add the Isocyanate in the pre-mix (extender + Polyol) and mix 2 minutes.
- Cast into the silicone mould pre-heated at 70 °C, then leave to cure at 70 °C.
- Demoulding after 120 minutes.

PACKAGING UNITS

- Isocyanate (A), **SikaBiresin® PX840** 6 x 1 KG
- Polyol (B), **SikaBiresin® PX840** 6 x 1 KG
- Extender (C), **SikaBiresin® PX840** 6 x 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.

STORAGE CONDITIONS

Shelf life	<ul style="list-style-type: none">▪ Isocyanate (A), SikaBiresin® PX840 6 months▪ Polyol (B), SikaBiresin® PX840 9 months▪ Extender (C), SikaBiresin® PX840 6 months
Storage temperature	<ul style="list-style-type: none">▪ Isocyanate (A), SikaBiresin® PX840 20 – 30 °C▪ Polyol (B), SikaBiresin® PX840 20 – 30 °C▪ Extender (C), SikaBiresin® PX840 20 – 30 °C
Crystallization	<ul style="list-style-type: none">▪ POLYOL crystallizes below 15 °C (evidence: solid part)▪ Pre-heat up to 40 – 70 °C and shake it to get a homogeneous liquid before use. Let it cool down to 25 – 35 °C before mixing.▪ If the ISOCYANATE is crystallized heat it up to 70 °C for one hour. Do not go over 4 hours at 70 °C.
Opened packagings	<ul style="list-style-type: none">▪ Any open containers must be tightly sealed and stored in a dry place under dry nitrogen.▪ Use under couple of days to avoid moisture contamination

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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