

PRODUCT DATA SHEET

SikaBiresin® UR390

POLYURETHANE CASTING RESIN – SHORE D 67 – COLD CURING

APPLICATIONS

- Polyurethane surface casting resin designed for foundry tools (patterns, core boxes) on aluminum pre-forms, concrete resin etc.
- Impact and abrasion resistant parts

MAIN PROPERTIES

- High abrasion resistance
- Good impact resistance
- Quick hardening
- Low toxicity

DESCRIPTION

Basis	Two component polyurethane system
Component A	SikaBiresin® UR390, isocyanate, white
Component B	SikaBiresin® UR390, polyol, amber to dark amber*

*dependent on raw materials the colour can differ without changing the mechanical properties

PHYSICAL PROPERTIES

		Isocyanate (A)	Polyol (B)
Components		SikaBiresin® UR390	SikaBiresin® UR390
Viscosity, 25 °C	mPa.s	3,000	150
Density, 25 °C		1.08	1.08
Mixing ratio A:B	in parts by weight	100	50
	In parts by volume	100	50
		Mixture	
Colour		Beige to dark beige*	
Viscosity, 25 °C	mPa.s	1,500	
Pot life, 25 °C, 150 g	min	14	
Demoulding time at 23 °C	h	16	
Demoulding time at 80 °C		4	
Curing time at 23 °C	days	6	
Curing time at 80 °C (curing after gelification)	hours	8	
Maximal casting thickness	mm	20	

*dependent on raw materials the colour can differ without changing the mechanical properties

MECHANICAL PROPERTIES

approx. values

Density	ISO 2781		1.08
Shore hardness	ISO 868	Shore D1 / D15	D 67 / D 64
Flexural modulus	ISO 178	MPa	450
Flexural strength	ISO 178	MPa	28
Tensile modulus	ISO 527	MPa	530
Tensile strength	ISO 527	MPa	27
Tear strength	ISO 34	kN/m	94
Elongation at break	ISO 527	%	120
BASHORE resilience	ASTM 2632	%	62
Impact strength (CHARPY)	ISO 179/1eU	kJ/m ³	unbreakable
Linear shrinkage (specimen 250x50x3mm)	-	mm/m	5
Abrasion resistance	ISO 4649	mm ³	190

THERMAL AND SPECIFIC PROPERTIES

approx. values, hardening 4h and 16h at 70° C

Working temperature	-	°C	-40 / +80
Glass transition temperature	ISO 11357	°C	100
Coefficient of thermal expansion (+0 °C to +40 °C)	ISO 11359	10 ⁻⁶ K ⁻¹	140

PACKAGING UNITS

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|--------------------------------------|------------------------|
| ■ Isocyanate (A), SikaBiresin® UR390 | 5 kg; 6 x 1 kg net |
| ■ Polyol (B), SikaBiresin® UR390 | 2.5 kg; 6 x 0.5 kg net |

PROCESSING DATA

- The material, processing and mould temperature should be at least 18 – 25 °C.
- Porous surfaces have to be well sealed before.
- Pay attention to dry conditions and dry mould surfaces while processing. We recommend Wax based release agents. For more information, see Product Data Sheets of the release agents.
- We recommend Wax based release agents. For more information, see Product Data Sheets of the release agents.
- Both components must be mixed thoroughly according to mixing ratio and poured immediately into the released mould with beginning at the lowest point.
- Use of a primer like 'Cleaner 205' improve adhesion on aluminum cores.

STORAGE CONDITIONS

Shelf life	■ Isocyanate (A), SikaBiresin® UR390	12 months
	■ Polyol (B), SikaBiresin® UR390	12 months
Storage temperature	■ Isocyanate (A), SikaBiresin® UR390	18 – 25 °C
	■ Polyol (B), SikaBiresin® UR390	18 – 25 °C
Crystallization	■ After prolonged storage at temperature below 15°C, crystallization of isocyanate (A) may occur.	
	■ This is easily removed by warming up for a sufficient time to a maximum of 50 °C.	

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BUILDING TRUST



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- Excessive curing (>50°C or >12 hours) degrades the Isocyanate (A)
 - Allow to cool to requested processing temperature before use.
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Opened packagings

- Containers must be closed tightly immediately after use to prevent moisture ingress.
- The residual material needs to be used up as soon as possible.

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 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.

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