

PRODUCT DATA SHEET

Biresin[®] S19

EPOXY GELCOAT WITH HIGH HEAT RESISTANCE UP TO 150 °C – BLACK

APPLICATIONS

- Manufacturing of vacuum forming tools
- Manufacturing of injection moulds as well as laminating moulds and bonding fixtures

MAIN PROPERTIES

- Very good heat resistance up to 150 °C
- Good spreading properties
- Good mechanical resistance

DESCRIPTION

Basis	Two component epoxy system
Component A	Biresin[®] S19 , epoxy resin, filled, black
Component B	Biresin[®] S19 , amine, unfilled, amber

PHYSICAL PROPERTIES

		Resin (A)	Hardener (B)
Components		Biresin[®] S19	Biresin[®] S19
Viscosity, 23 °C	mPa.s	pasty	~ 80
Density, 23 °C	g/cm ³	1.75	0.92
Mixing ratio A:B	in parts by weight	100	12
		Mixture	
Colour		black	
Viscosity, 23 °C	mPa.s	~ 27,500	
Pot life, room temperature, 500 g	min	~ 45 – 60	
Geltime, room temperature	min	~ 150 – 180	
Demoulding time, room temperature	h	24 h at room temperature + post curing at 80 °C (post curing time depending on part)	

MECHANICAL PROPERTIES

approx. values; values after post curing 160 °C (post curing time depending on part)

Density	ISO 1183	g/cm ³	1.65
Shore hardness	ISO 868	-	D 89
Flexural modulus	ISO 178	MPa	6,000
Flexural strength	ISO 178	MPa	85
Impact resistance	ISO 179	kJ/m ²	10

THERMAL AND SPECIFIC PROPERTIES

approx. values; values after post curing 160 °C (post curing time depending on part)

Heat deflection temperature	ISO 75B	°C	145
Glass transition temperature	ISO 11357	°C	158

PACKAGING UNITS

■ Resin (A), Biresin® S19	4 kg
■ Hardener (B), Biresin® S19	6 x 0.48 kg
■ Kit (AB), Biresin® S19	Box: 6 x 0.5 kg (A) + 6 x 0.06 kg (B)

PROCESSING DATA

- The material, processing and mould temperature should be at least 18 – 25 °C.
- Component A must be stirred thoroughly before use.
- Recommended release agents are Sika® Liquid Wax-815 or Sika® Pasty Wax-818. For more information, see Product Data Sheets of the release agents.
- Pay attention to dry conditions and dry mould surfaces while processing.
- Porous surfaces have to be well sealed before.
- Both components have to be mixed thoroughly according to mixing ratio with a spatula or slow speed mixing equipment.
- Apply the gelcoat in a homogenous thickness on the mould by using a flat, short-haired brush. We recommend to apply the material in a uniform direction in order to get a homogeneous, even and void-free surface coat.
- Within the geltime of gelcoat we recommend to apply a coupling layer or other backfilling layer in order to avoid adhesion problems.
- In order to improve resistance of gelcoat and final part against temperature influences, solvents as well as exposition of water, a post curing process of 1 h / 80 °C and 2 h / 160 °C of the final part is recommended. In this case a slow increase and slow decrease of temperature is required.
- Further post curing of the demoulded 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.
- For cleaning the final part from release agent residues, we recommend Sika® Reinigungsmittel-5. Before use of other cleaners, compatibility must be tested.

STORAGE CONDITIONS

Shelf life	<ul style="list-style-type: none">■ Resin (A), Biresin® S19 12 months■ Hardener (B), Biresin® S19 12 months
Storage temperature	<ul style="list-style-type: none">■ Resin (A), Biresin® S19 18 – 25 °C■ Hardener (B), Biresin® S19 18 – 25 °C
Crystallization	<ul style="list-style-type: none">■ After prolonged storage at low temperature, crystallization of components may occur.■ This is easily removed by warming up for a sufficient time to a maximum of 70 °C.■ Allow to cool to room temperature before use.
Opened packagings	<ul style="list-style-type: none">■ 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 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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