

## PRODUCT DATA SHEET

# SikaBiresin® G519 (Epo 5019)

EPOXY CASTING RESIN WITH GOOD WORKABILITY AND GOOD COMPRESSIVE STRENGTH

## APPLICATIONS

- Manufacturing of moulds and stamping tools for sheet metal forming moulds
- Manufacturing of foundry patterns, copy patterns and core boxes

## MAIN PROPERTIES

- Good mechanical properties
- Long pot life
- Good compressive strength and abrasion resistance
- Low shrinkage and high accuracy
- High casting thickness, unfilled up to 40 mm, dependent on thermal conductivity of the mould material
- Applicable with high admixture of filler, e.g. with aluminum grid up to 100:100 parts per weight on component A
- With component B **SikaBiresin® G519** for long pot life
- With component B **SikaBiresin® F04** for low viscosity and better flowability properties
- With component B **SikaBiresin® GC11** for long pot life

## DESCRIPTION

Basis	Two component epoxy system
Component A	<b>SikaBiresin® G519</b> , epoxy resin, filled, black
Component B	<b>SikaBiresin® G519</b> , amine, unfilled, amber
Component B	<b>SikaBiresin® F04</b> , amine, unfilled, colourless
Component B	<b>SikaBiresin® GC11</b> , amine, unfilled, amber

## PHYSICAL PROPERTIES

		Resin (A)	Hardener (B)	Hardener (B)	Hardener (B)
Components		SikaBiresin® G519	SikaBiresin® G519	SikaBiresin® F04	SikaBiresin® GC11
Viscosity, 25 °C	mPa.s	~ 75,000	~ 2,500	~ 10	~ 1,400
Density	g/cm <sup>3</sup>	2.7	0.98	0.87	1.08
Mixing ratio A:B	in parts by weight	100	10	6	12.5
Mixture					
Colour		black		black	black
Viscosity	mPa.s	~ 24,500		~ 5,500	~ 25,000
Pot life, 23 °C, 848 g	min	~ 80		~ 52	~ 80
Demoulding time, room temperature	h	~ 24		~ 24	~ 16 – 24
Curing time	d	~ 4		~ 4	~ 4
Maximum casting thickness	mm	~ 40		~ 10	~ 40

## MECHANICAL PROPERTIES

approx. values; values after post curing 16 h / 50 °C

			SikaBiresin® G519	SikaBiresin® F04	SikaBiresin® GC11
Density, 23 °C	ISO 2781	g/cm <sup>3</sup>	2.25	2.41	2.30
Shore hardness	ISO 868	-	D 90	D 90	D 90
Flexural modulus	ISO 178	MPa	6,000	6,900	6,400
Flexural strength	ISO 178	MPa	80	77	80
Tensile strength	ISO	527	40	not measured	40
Impact resistance	ISO 179	kJ/m <sup>2</sup>	9	not measured	not measured
Compressive strength	ISO 604	MPa	110	90	110
Linear shrinkage	Internal test	mm/m	1.7 (40 mm)	0.3 – 0.4 (10 mm)	0.3 – 0.4 (40 mm)

## THERMAL AND SPECIFIC PROPERTIES

approx. values; values after post curing 16 h / 50 °C

			SikaBiresin® G519	SikaBiresin® F04	SikaBiresin® GC11
Glass transition temperature	TMA Mettler	°C	74	80	56
Coefficient of thermal expansion	??	K <sup>-1</sup>	50 x 10 <sup>-6</sup>	32 x 10 <sup>-6</sup>	30 x 10 <sup>-6</sup>

## PACKAGING UNITS

■ Resin (A), SikaBiresin® G519	6 x 1.5 kg / 15 kg
■ Hardener (B), SikaBiresin® G519	6 x 0.15 kg / 1.5 kg
■ Hardener (B), SikaBiresin® F04	2.5 kg
■ Hardener (B), SikaBiresin® GC11	0.5 kg / 12 x 0.05 kg / 1 kg

## PROCESSING DATA

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- 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.
- Both components have to be mixed thoroughly according to mixing ratio and poured immediately into the released mould with beginning at the lowest point.
- 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

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Shelf life	▪ Resin (A), <b>SikaBiresin® G519</b>	18 months
	▪ Hardener (B), <b>SikaBiresin® G519</b>	24 months
	▪ Hardener (B), <b>SikaBiresin® F04</b>	12 months
	▪ Hardener (B), <b>SikaBiresin® GC11</b>	24 months
Storage temperature	▪ Resin (A), <b>SikaBiresin® G519</b>	15 – 25 °C
	▪ Hardener (B), <b>SikaBiresin® G519</b>	15 – 25 °C
	▪ Hardener (B), <b>SikaBiresin® F04</b>	18 – 25 °C
	▪ Hardener (B), <b>SikaBiresin® GC11</b>	15 – 25 °C
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 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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