

PRODUCT DATA SHEET

SikaBiresin[®] RG53 FR (Biresin[®] RG53 FR)

LOW PRESSURE RIM SYSTEM FOR FLAME RETARDANT PARTS – SIMULATION OF ABS

APPLICATIONS

- Manufacture of housings and coverings
- Manufacture of thin walled mouldings with complex structure
- Manufacture of flame retardant parts

MAIN PROPERTIES

- Simulation of ABS with good impact resistance
- Fast curing with good flowability
- Short demoulding time
- Flame retardant according to **UL 94; V0** at 3 mm thickness
- Flame retardant according to appendix IV; EU Directive **95/28/EC** at 3 mm thickness
- Flame retardant according to **DIN 75200; ISO 3795**

DESCRIPTION

Basis	Two component polyurethane system
Component A	SikaBiresin[®] RG53 FR , polyol, beige and black
Component B	SikaBiresin[®] RG500 , MDI-based isocyanate, brown

PHYSICAL PROPERTIES

Components		Polyol (A)	Isocyanate (B)
		SikaBiresin[®] RG53 FR	SikaBiresin[®] RG500
Viscosity, 25 °C	mPa.s	~ 4,700	~ 110
Density	g/cm ³	1.20	1.23
Mixing ratio A:B	in parts by weight	100	54
Mixing ratio A:B	in parts by volume	100	52
		Mixture	
Colour		beige / black	
Pot life, room temperature	s	~ 75	
Demoulding time, room temperature	min	> 10	
Curing time, room temperature	d	~ 1	

MECHANICAL PROPERTIES

approx. values

Density	ISO 1183	g/cm ³	1.27
Shore hardness	ISO 868	-	D 84
Flexural modulus	ISO 178	MPa	2,200
Flexural strength	ISO 178	MPa	70
Tensile strength	ISO 527	MPa	45
Elongation at break	ISO 527	%	5
Impact resistance	ISO 179	kJ/m ²	35

THERMAL AND SPECIFIC PROPERTIES

approx. values

Heat deflection temperature	ISO 75B	°C	110*
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* values after post curing:
4 h / 80 °C + 2 h / 120 °C

PACKAGING UNITS

- Polyol (A), **SikaBiresin® RG53 FR**, beige, black 25 kg / 200 kg
- Isocyanate (B), **SikaBiresin® RG500** 5 kg / 20 kg / 250 kg

PROCESSING DATA

- The material and processing temperature should be at least 18 – 25 °C, mould temperature at least 20 – 60 °C.
- Component A must be stirred thoroughly before use.
- For processing, a suitable two-component meter mix and dispense machine should be used.
- The machine should be conform to the reactivity of the material and the volume of the casted parts. A static-dynamic or dynamic mixing unit is recommended.
- The machine vessel for component A must have a mixing unit. Furthermore, a heating unit for the machine vessels of both components is recommended.
- Machine vessel for both components must be moisture tight, e.g. by installation of a silicagel filter.
- Recommended release agents are Sika® Liquid Wax-852 or Sika® Liquid Spray-872. For more information, see Product Data Sheets of the release agents.
- Pay attention to dry conditions and dry mould surfaces (moisture content of wood < 7 %) while processing.
- Increased mould temperatures are decreasing the demoulding time.
- Further post curing of the demoulded part can improve the final mechanical properties. The final thermal properties depend on the process and production conditions.
- Depending on the geometry and weight of the part, it is recommended to use a conformer while post curing.
- Before overpainting, the parts have to be grinded or sandblasted. A polyurethane paint is recommended.

STORAGE CONDITIONS

Shelf life	<ul style="list-style-type: none">▪ Polyol (A), SikaBiresin® RG53 FR 12 months▪ Isocyanate (B), SikaBiresin® RG500 12 months
Storage temperature	<ul style="list-style-type: none">▪ Polyol (A), SikaBiresin® RG53 FR 18 – 25 °C▪ Isocyanate (B), SikaBiresin® RG500 18 – 25 °C
Crystallization	<ul style="list-style-type: none">▪ After prolonged storage at low temperature, crystallization of B component may occur.▪ This is easily removed by warming up for a sufficient time to a maximum of 70 °C.▪ Allow to cool to requested processing 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.

FLAME RETARDANT APPROVALS

UL94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances – 3 mm thickness

UL94	<ul style="list-style-type: none">▪ V0
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DIN 75200, ISO 3795 – Burning behavior of materials in vehicle interiors with assessment of the maximum burning speed according to FMVSS 302 – 2.8 mm thickness

Maximum value of the burning rate	<ul style="list-style-type: none">▪ 0 mm/min
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Directive 95/28/EC - Burning behavior of materials used in the interior construction of certain categories of motor vehicle – 3 mm thickness

Maximum value of the burning rate	<ul style="list-style-type: none">▪ 0 mm/min
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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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