

## PRODUCT DATA SHEET

# SikaBiresin<sup>®</sup> RG57 FR (Biresin<sup>®</sup> RG57 FR)

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

### APPLICATIONS

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

### MAIN PROPERTIES

- Simulation of ABS
- Fast curing with good flowability
- Short demoulding time
- Flame retardant according to **UL 94; V0** at 3 mm thickness
- Flame retardant according to **DIN EN 45545-2; R1/R22/R23**

### DESCRIPTION

Basis	Two component polyurethane system
Component A	<b>SikaBiresin<sup>®</sup> RG57 FR</b> , polyol, beige and black
Component B	<b>SikaBiresin<sup>®</sup> RG500</b> , MDI-based isocyanate, brown

### PHYSICAL PROPERTIES

		Polyol (A)	Isocyanate (B)
Components		<b>SikaBiresin<sup>®</sup> RG57 FR</b>	<b>SikaBiresin<sup>®</sup> RG500</b>
Viscosity, 25 °C	mPa.s	~ 3,800	~ 110
Density	g/cm <sup>3</sup>	1.30	1.23
Mixing ratio A:B	in parts by weight	100	44
		Mixture	
Colour		beige / black	
Pot life, room temperature	s	~ 55	
Demoulding time, room temperature	min	> 10	
Curing time, room temperature	d	~ 1	

## MECHANICAL PROPERTIES

approx. values; processing conditions: aluminium mould with 60 °C mould temperature

Density	ISO 1183	g/cm <sup>3</sup>	1.30
Shore hardness	ISO 868	-	D 80
Flexural modulus	ISO 178	MPa	2,350
Flexural strength	ISO 178	MPa	70
Tensile strength	ISO 527	MPa	38
Elongation at break	ISO 527	%	4
Impact resistance	ISO 179	kJ/m <sup>2</sup>	20

## THERMAL AND SPECIFIC PROPERTIES

approx. values; processing conditions: aluminium mould with 60 °C mould temperature

Heat deflection temperature	ISO 75B	°C	90
-----------------------------	---------	----	----

## PACKAGING UNITS

- |   |                       |
|---|-----------------------|
| ■ Polyol (A), <b>SikaBiresin® RG57 FR</b> beige | 25 kg / 220 kg        |
| ■ Polyol (A), <b>SikaBiresin® RG57 FR</b> black | 25 kg / 200 kg        |
| ■ Isocyanate (B), <b>SikaBiresin® RG500</b>     | 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.
- 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"><li>■ Polyol (A), <b>SikaBiresin® RG57 FR</b> 12 months</li><li>■ Isocyanate (B), <b>SikaBiresin® RG500</b> 12 months</li></ul>
Storage temperature	<ul style="list-style-type: none"><li>■ Polyol (A), <b>SikaBiresin® RG57 FR</b> 18 – 25 °C</li><li>■ Isocyanate (B), <b>SikaBiresin® RG500</b> 18 – 25 °C</li></ul>
Crystallization	<ul style="list-style-type: none"><li>■ After prolonged storage at low temperature, crystallization of B component may occur.</li><li>■ This is easily removed by warming up for a sufficient time to a maximum of 70 °C.</li><li>■ Allow to cool to requested processing temperature before use.</li></ul>
Opened packagings	<ul style="list-style-type: none"><li>■ Containers must be closed tightly immediately after use to prevent moisture ingress.</li><li>■ The residual material needs to be used up as soon as possible.</li></ul>

## 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"><li>■ V0</li></ul>
------	--

### DIN EN 45545-2 - Railway applications - Fire protection on railway vehicles - Requirements for fire behavior of materials and components

DIN EN ISO 5659-2 – 4 mm thickness	<ul style="list-style-type: none"><li>■ Smoke density: <math>D_s</math> (max) = 253</li><li>■ R22 / HL 2</li><li>■ R23 / HL 3</li></ul>
DIN EN ISO 4589-2 – 4 mm thickness	<ul style="list-style-type: none"><li>■ Oxygen Index = 32.8%</li><li>■ R22 / HL 3</li><li>■ R23 / HL 3</li><li>■ R24 / HL 3</li></ul>
DIN EN ISO 5658-2 – 4 mm thickness	<ul style="list-style-type: none"><li>■ CFE critical flux at extinguishment: 13,81 kW/m<sup>2</sup></li></ul>
NF X 70-100-1:2006 – 3 mm thickness	<ul style="list-style-type: none"><li>■ <math>CIT_{NLP}</math>: 0.28</li></ul>

## 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.

---

## Contact

---

**SIKA DEUTSCHLAND GMBH**  
Stuttgarter Straße 139  
72574 Bad Urach - GERMANY  
Phone: +49 7125 940 492  
Fax: +49 7125 940 401  
E-Mail: [tooling@de.sika.com](mailto:tooling@de.sika.com)  
Website: [www.sikaadvancedresins.de](http://www.sikaadvancedresins.de)

**SIKA AUTOMOTIVE FRANCE S.A.S.**  
ZI des Béthunes - 15, Rue de l'Équerre  
95310 Saint-Ouen-l'Aumône  
CS 40444  
95005 Cergy Pontoise Cedex - FRANCE  
Phone: +33 1 34 40 34 60  
Fax: +33 1 34 21 97 87  
E-Mail: [advanced.resins@fr.sika.com](mailto:advanced.resins@fr.sika.com)  
Website: [www.sikaadvancedresins.fr](http://www.sikaadvancedresins.fr)

**AXSON TECHNOLOGIES SPAIN, S.L.**  
C/Guardaagullés, 8 – P.I. Congost - 08520  
Les Franqueses del Valles (Barcelona) - SPAIN  
Phone: +34 93 225 16 20  
Fax: +34 93 225 03 05  
E-Mail: [spain@axson.com](mailto:spain@axson.com)  
Website: [www.sikaadvancedresins.es](http://www.sikaadvancedresins.es)

**AXSON ITALIA S.R.L.**  
Via Morandi 15  
21047 Saronno (Va) – ITALY  
Phone: +39 02 96 70 23 36  
Fax: +39 02 96 70 23 69  
E-Mail: [axson@axson.it](mailto:axson@axson.it)  
Website: [www.sikaadvancedresins.it](http://www.sikaadvancedresins.it)

**AXSON UK LTD**  
Unit 15 Studlands Park Ind. Estate  
Newmarket Suffolk, CB8 7AU - UNITED KINGDOM  
Phone: +44 1638 660 062  
Fax: +44 1638 665 078  
E-Mail: [sales.uk@axson.com](mailto:sales.uk@axson.com)  
Website: [www.sikaadvancedresins.uk](http://www.sikaadvancedresins.uk)

**SIKA AUTOMOTIVE SLOVAKIA S.R.O.**  
Tovarenska 49  
953 01 Zlate Moravce - SLOVAKIA  
Phone: +421 2 5727 29 33  
Fax: +421 37 3000 087  
E-Mail: [SikaAdvancedResins@sk.sika.com](mailto:SikaAdvancedResins@sk.sika.com)  
Website: [www.sikaadvancedresins.com](http://www.sikaadvancedresins.com)

**SIKA ADVANCED RESINS US**  
30800 Stephenson Highway  
Madison Heights, Michigan 48071 - USA  
Phone: +1 248 588 2270  
Fax: +1 248 616 7452  
E-Mail: [advanced.resins@us.sika.com](mailto:advanced.resins@us.sika.com)  
Website: [www.sikaadvancedresins.us](http://www.sikaadvancedresins.us)

**SIKA AUTOMOTIVE EATON RAPIDS, INC.**  
1611 Hults Drive  
Eaton Rapids, Michigan 48827 - USA  
Phone: +1 517 663 81 91  
Fax: +1 517 663 05 23  
E-Mail: [advanced.resins@us.sika.com](mailto:advanced.resins@us.sika.com)  
Website: [www.sikaadvancedresins.us](http://www.sikaadvancedresins.us)

**SIKA AUTOMOTIVE MEXICO S.A. DE C.V.**  
Ignacio Ramirez #20 Despacho 202 Col.  
Tabacalera C.P. 06030 CDMX - MEXICO  
Phone: +52 55 5264 49 22  
E-Mail: [marketing@axson.com.mx](mailto:marketing@axson.com.mx)  
Website: [www.sikaadvancedresins.mx](http://www.sikaadvancedresins.mx)

**SIKA AUTOMOTIVE SHANGHAI CO. LTD.**  
N°53 Tai Gu Road  
Wai Gao Qiao  
Free Trade Zone, Pudong  
200131 Shanghai - CHINA  
Phone: +86 21 58 68 30 37  
Fax: +86 21 58 68 26 01  
E-Mail: [marketing.china@axson.com](mailto:marketing.china@axson.com)  
Website: [www.sikaaxson.cn](http://www.sikaaxson.cn)

**Sika Ltd.**  
10 F, Shinagawa Intercity Tower B.  
2-15-2 Konan, Minato-ku  
Tokyo 108-6110 – JAPAN  
Phone: +81 3 6433 2314  
Fax: +81 3 6433 2102  
E-Mail: [advanced-resins@jp.sika.com](mailto:advanced-resins@jp.sika.com)  
Website: [www.jpn.sika.com](http://www.jpn.sika.com)

**AXSON INDIA PVT. LTD.**  
Office n°8, Building Symphony C - 3rd Floor  
Range Hills Road  
Bhosale Nagar  
Pune 411 020 - INDIA  
Phone: +91 20 25560 710  
Fax: +91 20 25560 712  
E-Mail: [info.india@axson.com](mailto:info.india@axson.com)  
Website: [www.sikaadvancedresins.in](http://www.sikaadvancedresins.in)

---

## PRODUCT DATA SHEET

SikaBiresin® RG57 FR (Biresin® RG57 FR)  
Dezember 2019, Version 01  
Sika Advanced Resins