

PRODUCT DATA SHEET

SikaBiresin® RE651-94 (A) / SikaBiresin® RE102 (B)

ELECTRICAL POLYURETHANE RESIN
SEMI-RIGID – SELF EXTINGUISH – UL 94 V0

DESCRIPTION

Casting resin for numerous electrical applications when extinguish properties are required: transformers, capacitors, sensors, relays, ...

PROPERTIES

- Two component liquid polyurethane
- Semi rigid
- Low water absorption
- UL 94 V0, GWIF, GWIT
- Halogen free
- ROHS

PHYSICAL PROPERTIES

Composition			POLYOL	ISOCYANATE	MIXED
			SikaBiresin® RE 651-94 (A)	SikaBiresin® RE 102 (B)	
Mix ratio by weight			100	20	
Mix ratio by volume at 25 °C			100	26	
Aspect			Liquid	Liquid	Liquid
Colour			Black	Amber	Black
Viscosity at 25 °C	(mPa.s)	CQP 538-2 Brookfield	7000	120	1600
Specific gravity at 25 °C	(g/cm³)	CQP 006-3	1.58	1.22	
Specific gravity cured solid		CQP 014-1	-	-	1.56
Gel time at 25 °C (200 g)	(min)	CQP 021-3 TECAM	-	-	30

MECHANICAL PROPERTIES at 23 °C ⁽¹⁾

Hardness	CQP 023-1 ISO 868	Shore D1/D15	70/57
Tensile Strength		MPa	10
Elongation at break	CQP036-2 ISO 527	%	30
Tensile Modulus		MPa	100

(1) Average values obtained on standard specimens / Hardening 16 hours at 80°C and 24 hours at 23°C

THERMAL AND SPECIFIC PROPERTIES ⁽¹⁾

Working temperature	-	°C	-50/+130
Thermal class	IEC 60085	Class	B
Thermal conductivity	CQP 116-1 ISO 8301	W/m.K	0.63
Glass transition temperature (TG TMA)	CQP 053-1	°C	15
Coefficient of thermal expansion (CTE) [-40 to 0]°C / [+50 to +80]°C	CQP 053-1	10 ⁻⁶ K ⁻¹	55 / 135
Auto-extinguishing ⁽²⁾	UL94: 1979	1.5 mm	V0
Glow wire flammability index GWIF	IEC 60695	°C/mm	960/3
Glow wire ignition temperature GWIT	IEC 60695	°C/mm	960/3
Water absorption (23°C – 24 Hours)	CQP 051-1 ISO 62	%	0.15
Directive 2015/863/EU (ROHS) ⁽³⁾	-	-	Compliant

(1) Average values obtained on standard specimens / Hardening 16 hours at 80°C and 24 hours at 23°C.

(2) UL file number: E113398.

(3) European directive on the restriction of the use of certain hazardous substances electrical and electronic equipment.

DIELECTRIC AND INSULATING PROPERTIES at 23°C ⁽¹⁾

Dielectric strength (50 Hz - 1 mm)	CEI 60243-1 E2 :1998	kV/mm	28
Dielectric constant ϵ (100 Hz)	CEI 60250 : 1969	-	5.3
Dissipation factor $\tan \delta$ (100 Hz)	CEI 60250 : 1969	-	0.06
Volume resistivity (1000 V)	CEI 62631-3-1 2016	Ω .cm	5.10 ¹⁴
Comparative tacking index ⁽²⁾ (CTI)	UL 746A	PLC -Volt	0 – 600

(1) Average values obtained on standard specimens / Hardening 16 hours at 80°C and 24 hours at 23°C

PROCESSING

- Before use ISOCYANATE SikaBiresin® RE 102 check carefully the absence of crystallisation or dimerization on each package
 - Solid particle presence
 - Cloudy liquid
- In case of crystallization or dimerization, the product must be placed in an oven at 60°C until complete decrystallization (16 hours maximum). Rehomogenize and return to room temperature. After shaking the product into the package, the product is not clear, DO NOT USE THE PRODUCT.
- Setting may be observed on the polyol. In that case, it is necessary to mix the POLYOL part until both colour and aspect become homogeneous. This is not harmful for the product quality. Both parts (POLYOL and ISOCYANATE) have to be mixed at a temperature higher than 18°C according to the mix ratio indicated on the technical datasheet. Before casting check that parts or moulds are free of any trace of moisture ...

HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products :

- Ensure good ventilation.
- Wear gloves, glasses and protective clothes.

For further information, please consult the Safety Data Sheets.

STORAGE CONDITIONS

Storage at a temperature below 5°C can cause crystallisation and dimerization of the ISOCYANATE SikaBiresin® RE 102.

Shelf life is 12 months for the Part A POLYOL and 12 months for Part B ISOCYANATE in a dry place and in their original unopened containers at a temperature between 15 to 25°C. Any open can must be tightly closed under dry inert gas (dry air, nitrogen, etc...).

PACKAGING

Packaging information on request, please contact your local sales representative

FURTHER INFORMATION

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Sika Advanced Resins

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.

VALUE BASES

All technical data stated in this Product Data Sheet 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

Business Unit Industry
Stuttgarter Straße 139
72574 Bad Urach
Phone: +49 7125 940-7692
E-Mail: industry@de.sika.com
Website: www.sika.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: contact.industry@fr.sika.com
Website: www.sika.fr

Sika S.A.U.

Carretera de Madrid a Irún - km 14.5
P.I. Congost 28108 Alcobendas (Madrid) - SPAIN
Phone: +34 93 225 16 20
E-Mail: sar-sales@es.sika.com
Website: www.sikaadvancedresins.es

Sika Italia S.p.A.

Via Luigi Einaudi 6
20068 Peschiera Borromeo (MI) - Italy
Phone: +39 02 54778111
Fax: +39 02 54778 119
E-Mail: info@sika.it
Website: www.sika.it

Sika Limited

Head Office, Watchmead - Welwyn
Garden City - AL7 1BQ - United Kingdom
Phone: +44 1707 394444
E-Mail: industry-sales@uk.sika.com
Website: www.gbr.sika.com

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
Website: www.sikaadvancedresins.com

Sika Industry - Tooling, Resins and Marine

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
Website: www.sikaindustry.com

SIKA MEXICANA SA de CV

Av. Gustavo Baz #309 Centrum Park
54060 Tlanepantla Estado de MEXICO
Phone: +52 442 238 5800
E-Mail: roman.octavio@mx.sika.com

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: industry@cn.sika.com
Website: www.sika.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
Website: www.jpn.sika.com

SIKA INDIA PVT LTD,

Plot No. Pap-V-90/1,
Chakan Industrial Area,
Phase-II, Vasuli, Khed, PUNE,
Maharashtra - 410501
E-Mail: info.india@in.sika.com

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