BUILDING TRUST

PRODUCT DATA SHEET

SikaBiresin® RE531-93 RE102

ELECTRICAL POLYURETHANE RESIN, SEMI-FLEXIBLE – SELF EXTINGUISHING – UL 94 V0

APPLICATIONS

- Casting resin for mechanical and numerous electrical applications for low and medium voltage when requiring an extinguish characteristic, e.g. capacitors, transformers, electronics cards and components with RTI, UL 94 and EN 45545 qualification

MAIN PROPERTIES

- Semi-flexible
- Low viscosity
- Good thermal conductivity
- UL 94 V0, UL 746 HAI, HWI
- EN 45545
- High thermal resistance RTI 150 °C

DESCRIPTION

Basis	Two component polyurethane casting system
Component A	**SikaBiresin® RE531-93**, polyol, black
Component B	**SikaBiresin® RE102**, isocyanate, dark amber

PHYSICAL PROPERTIES

			Polyol (A)	Isocyanate (B)
Component			**SikaBiresin® RE531-93**	**SikaBiresin® RE102**
Aspect			Liquid	Liquid
Density, 25 °C	g/cm³	ISO 1675	1.58	1.22
Viscosity, 25 °C	mPa.s	ISO 2555	4,100	125
Mixing ratio A : B	by weight		100	14
Mixing ratio A : B, 25 °C	by volume		100	18
			Mixture	
Color			Black	
Aspect			Liquid	
Viscosity, 25 °C	mPa.s	ISO 2555	1,650	
Gel time, 25 °C, 200 g	min	Gel Timer TECAM	22	

MECHANICAL PROPERTIES

(approx. values obtained on standard specimens after hardening 16 hours / 80 °C + 24 hours / 23 °C)

Density	ISO 2781	g/cm³	1.57
Shore hardness	ISO 868	D1 / D15	53 / 47
Tensile strength	ISO 37	MPa	5
Elongation at break	ISO 37	%	50

THERMAL AND SPECIFIC PROPERTIES

(approx. values obtained on standard specimens after hardening 16 hours / 80 °C + 24 hours / 23 °C)

Working temperature		°C	-50 / +160
Thermal class		-	F class
Thermal conductivity	EN 993-15	W/m.K	0.73
Glass transition temperature (Tg)	ISO 11359	°C	-10
Relative temperature Index RTI Mechanical / Electrical	UL 746 B	°C	150 / 150
Coefficient of thermal expansion (CTE) (-60 to -20 °C)/ (+10 to + 160 °C)	ISO 11359	10^{-6} K^{-1}	40/155
Auto-extinguishing	UL94	-	V0 3 mm [2]
Hot wire ignition (HWI)	UL 746 A	Category PLC	0 – 3 mm [2]
High current arc ignition (HAI)	UL 746 A	Category PLC	0 – 3 mm [2]
Glow-wire flammability index (GWFI)	IEC 60695-2-12	°C/mm	960 / 3
Glow-wire ignition temperature (GWIT)	IEC 60695-2-13	°C/mm	960 / 3
Fire behavior (railway applications)	EN 45545-2	R22 R23 R24	HL2 HL3 HL3
Water absorption (23 °C, 24 hours)	ISO 62	%	0.3
Directive 2015/863/EU (ROHS) [1]	-	-	Conform

[1] European directive on the restriction of the use of certain hazardous substances electrical and electronic equipment.

[2] UL file number: E113398.

DIELECTRIC AND INSULATING PROPERTIES

(approx. values obtained on standard specimens after hardening 16 hours / 80 °C + 24 hours / 23 °C)

Dielectric strength (50 Hz – 1 mm)	CEI 60243-1 E2	kV/mm	22
Dielectric constant ε (100 Hz)	CEI 60250	-	7
Dissipation factor tan δ (100 Hz)	CEI 60250	-	0.14
Volume resistivity (1,000 V)	CEI 60093 E2	Ω · cm	4.10^{13}
Comparative Tracking resistance	UL 746 A	Category PLC	0 [2]
Inclined Plane Tracking (IPT) at 2,5 kV	ASTM D2303	min	60

[2] UL file number: E113398.

PACKAGING UNITS

■ Polyol (A), **SikaBiresin® RE531-93**	10 kg / 25 kg / 280 kg
■ Isocyanate (B), **SikaBiresin® RE102**	5 kg / 22 kg

PROCESSING DATA

- All surfaces in contact with the product must be clean and dry.
- Prior to use check the material for homogeneity and crystallization.
- After prolonged storage at low temperature, crystallization of components may occur. This process can be easily reversed by heating the affected component to a maximum of 60 °C (no longer than 16 hours) until the crystals have disappeared. Allow to cool down to requested processing temperature before use.
- Component A must be stirred thoroughly before to be mixed.
- Both components must be mixed homogeneously respecting the defined mixing ratio.
- The material and processing temperature shall be between 18 °C and 25 °C. Consider the shorter pot life and lower viscosity if the product is processed at higher temperatures. The curing must be performed at temperature ≥ 18 °C.
- Containers must be closed tightly immediately after use to prevent moisture ingress.
- Once opened the product shall be used up as soon as possible.

STORAGE CONDITIONS

Shelf life	■ Polyol (A), **SikaBiresin® RE531-93**	12 months
	■ Isocyanate (B), **SikaBiresin® RE102**	12 months
Storage temperature	■ Polyol (A), **SikaBiresin® RE531-93**	15 °C – 25 °C
	■ Isocyanate (B), **SikaBiresin® RE102**	15 °C – 25 °C

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
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