

PRODUCT DATA SHEET

SikaBiresin® RE 461 POLYOL / SikaBiresin® RE 101 ISOCYANATE*

*(previously RE 12461 / RE 1010)

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

DESCRIPTION

Casting resin for mechanical and numerous electrical applications for low and medium voltage when requiring an extinguish characteristic.

PROPERTIES

- Semi Flexible
- Low viscosity
- Several reactivity
- UL 94 V0, UL 746 HAI, HWI
- EN 45545, NF F 16101
- Good thermal conductivity

PHYSICAL PROPERTIES

Composition		POLYOL SikaBiresin® RE 461	ISOCYANATE SikaBiresin® RE 101	MIXED
Mix ratio by weight		100	16	
Mix ratio by volume at 25 °C		100	20	
Aspect		liquid	liquid	Liquid
Colour	SikaBiresin® RE 461-(11)–(16)	White	Dark amber	White
	SikaBiresin® RE 461-(35)	Red		Red
	SikaBiresin® RE 461-(74)	Grey		Grey
	SikaBiresin® RE 461-(94)	Black		Black
Viscosity at 25 °C	(mPa.s) ISO 2555 : 2018	7.000	20	1.100
Specific gravity at 25 °C	(g/cm ³) ISO 1675 : 1985	1,57	1,22	-
Specific gravity cured solid	ISO 2781 : 1996	-	-	1,55
Gel time at 25 °C (200 g)	(min) Gel Timer TECAM	SikaBiresin® RE 461-(11)		10
		SikaBiresin® RE 461-(94)		30
		SikaBiresin® RE 461-(74) (35)		35
		SikaBiresin® RE 461-(16)		50

MECHANICAL PROPERTIES at 23 °C ⁽¹⁾

Hardness	ISO 868 : 2003	Shore D1 / D15	46 / 36
Tensile Strength		MPa	7
Elongation at break	ISO 37 : 2011	%	110

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

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March 19, Version 01 /2019

TDS14F0099

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THERMAL AND SPECIFIC PROPERTIES ⁽¹⁾

Working temperature	-	°C	-50 to + 120
Maximum working temperature (10 000 hrs)	-	°C	130
Thermal conductivity	EN 993-15	W/m.K	0,70
Glass transition temperature (Tg)	ISO 11359 : 1999	°C	-5
Coefficient of thermal expansion (CTE) [-40 to -20]°C	ISO 11359 : 1999	10 ⁻⁶ K ⁻¹	45
[+20 to +120]°C			140
Auto-extinguishing	UL94 : 1979	-	V0 6 mm ⁽⁴⁾
Hot wire ignition (HWI)	UL 746 A	Category PLC	1 - 3 mm ⁽⁴⁾ 0 - 6 mm ⁽⁴⁾
High current arc ignition (HAI)	UL 746 A	Category PLC	0 - 3 mm ⁽⁴⁾ 0 - 6 mm ⁽⁴⁾
Fire behaviour ⁽²⁾	NF F 16101 : 1988	-	I 3 – F1
	EN 45545-2 : 2013	R 22	HL1
		R 23	HL2
		R 24	HL3
Water absorption (23°C – 24 Hours)	ISO 62 : 1999	%	0,3
Directive 2015/863/EU (ROHS) ⁽³⁾	-	-	Conform

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

(2) Products SikaBiresin® RE 461-(16), SikaBiresin® RE 461-(35) and SikaBiresin® RE 461-(94) are certified EN 45545-2. SikaBiresin® RE 461-(94) is also certified NF F16101.

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

(4) UL file number: E113398.

DIELECTRIC AND INSULATING PROPERTIES at 23°C ⁽¹⁾

Dielectric strength (50 Hz - 1 mm)	CEI 60243-1 E2 : 1998	kV/mm	25
Dielectric constant ϵ (100 Hz)	CEI 60250 : 1969	-	7,7
Dissipation factor $\tan \delta$ (100 Hz)	CEI 60250 : 1969	-	0,12
Volume resistivity (1.000 V)	CEI 60093 E2 : 1980	Ω .cm	2.10 ¹⁴
Tracking resistance	CEI 60112 E3 : 1979	-	IRC-600 - < 0.1

(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 101 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 101.
Shelf life is 12 months for the POLYOL and 12 months for 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 or find your local contact on www.sikaadvancedresins.com

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.

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 NOTES

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.

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