

PRODUCT DATA SHEET

SikaBiresin® RE 896-(95) RESIN/RE 896 HARDENER

ELECTRICAL HOT CURE EPOXY SYSTEM

GOOD THERMAL CONDUCTIVITY AND EXCELLENT CRACK RESISTANCE PERFORMANCE

DESCRIPTION

Hot-curing two-component liquid epoxy encapsulation system with good thermal conductivity and excellent crack resistance for stator application.

PROPERTIES

- Hot curing two-component liquid epoxy resin
- Good bond strength with alumina / copper
- Good gap filling capability
- Excellent crack resistance
- Solvent free, 100% solid content, no VOC release during cured process
- Good thermal conductivity
- Good ATF oil & water resistance

PHYSICAL PROPERTIES

Composition	Resin SikaBiresin® RE 896-(95)	Hardener SikaBiresin® RE 896	MIXED
Mix ratio by weight at 25 °C	100	13	
Mix ratio by volume at 25 °C	100	27,6	
Aspect	Viscous liquid	Liquid	
Colour	Black	Dark amber	Black
Viscosity at 25 °C (mPa.s)	BROOKFIELD RVT	30	-
Viscosity at 80 °C (mPa.s)	BROOKFIELD RVT	5.800	-
Viscosity at 70 °C (mPa.s)	BROOKFIELD RVT	-	600
Specific gravity at 25 °C (g/cm3)	ISO 1675: 1985	2,50	1,20
Specific gravity cured solid	ISO 2781: 1996		2,30
Pot life at 70 °C (min)	BROOKFIELD RVT		60
Gel time at 90 °C (min)	Gel Timer by hot plate		95

MECHANICAL PROPERTIES at 23 °C ⁽¹⁾

Hardness	ISO 868 : 2003	Shore D	90
Flexural strength		MPa	125
Flexural modulus	ISO 178: 2010	MPa	10.500

(1) Average values obtained on standard specimens / Hardening 2 hours at 90°C and 6 hour at 140 °C

THERMAL AND SPECIFIC PROPERTIES ⁽¹⁾

Working temperature	-	°C	-40~180
Thermal conductivity	EN 993-15	W/m.K	1,0
Glass transition temperature (Tg)	ISO 11359 : 2002	°C	98
Coefficient of thermal expansion (CTE) [below Tg]	ISO 11359-2 : 1999	10 ⁻⁶ K ⁻¹	35
Auto-extinguishing	UL94: 1979	-	V0
Directive 2015/863/EU (ROHS) ⁽²⁾	-	-	Conform

(1) Average values obtained on standard specimens / Hardening 2 hours at 90°C and 6 hour at 140 °C.

(2) 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 - 2 mm)	CEI 60243-1 E2 :1998	kV/mm	17
Dielectric constant ϵ (100 Hz)	CEI 60250 : 1969	-	4,9
Dissipation factor $\tan \delta$ (100 Hz)	CEI 60250 : 1969	-	0.02
Volume resistivity (1000 V)	CEI 60093 E2 : 1980	Ω .cm	1.2x10 ¹⁶

(1) Average values obtained on standard specimens / Hardening 2 hours at 90°C and 6 hour at 140 °C.

PROCESSING

- Preparation
 - RE 896-(95) Resin recommended to carefully homogenize in the container before use.
 - In the storage vessels of the production equipment, the resin should be stirred up from time to time to avoid sedimentation.
- Mixing
 - To facilitate stirring and removal, resin is heated to 60°C in the original container.
 - To be degassed, the resin component should be homogenized in holding tank A at 70 - 80°C under a vacuum of 1-5 mbar, the hardener component in holding tank B at 20 - 40°C and a vacuum of 1 - 5 mbar.
 - A metering unit should be used to feed the resin and hardener components to an impeller mixer.
 - After dosing and mixing with a static mixer, the system is fed directly to the vacuum chamber, mixture temperature is suggested at 50~60 °C for potting.
- Cure conditions (recommendation)
 - Alternative curing conditions must be checked for different designing product and application. Recommendation at least 2 hour at 90°C plus 2 hour at 120 °C.
 - To determine whether crosslinking has been carried to completion and the final properties are optimal, it is necessary to measure the glass transition temperature.

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 resin SikaBiresin® RE 896-(95).

Shelf life is 12 months for the RESIN and 12 months for HARDENER in a dry place and in their original unopened containers at a temperature between 15 to 35°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 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.

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