



DIELECTRIC AND
ENCAPSULATING RESINS
ELECTRONIC, POWER MANAGEMENT,
AUTOMOTIVE, E-MOBILITY

BUILDING TRUST



CREATING A STRONG FUTURE

Worldwide solutions in PUR and EP resins

YOUR ADDED VALUE

Reliability and Safety

Advanced Resins is on your side as a strong global player. As an inherent part of the Swiss concern Sika AG you can rely on us.

Quality and Innovation

Our commitment to delivering high-quality end products is unwavering. Drawing on extensive expertise in the development of top-tier PUR and EP resins, we ensure that our clients benefit from industry-leading quality standards. Additionally, our dedication to quality is backed by external approvals, with adherence to stringent standards.

Flexibility and integrated solutions

As individual as your task. The comprehensive and integrated product range of Advanced Resins Team offers you even more solutions for your applications.

Professional global support worldwide

Local experts provide you with personal on-site support in all issues relating to product processing and plant technology.

Global Availability

The consolidation of worldwide production sites, several development departments and our global dealer network maximizes the availability of our products – wherever you are located.



CUSTOMIZED SOLUTIONS FOR:

- Foundry model making
- Automotive industry
- Transportation industry
- Sports and leisure
- Industrial applications
- Boat and yacht building industry
- Aviation industry
- Renewable energies
- Dielectrics

ADVANCED RESINS IS PART of Sika Industry and with over 75 years of experience, is a world leading provider and developer of high performance resins. It offers customized solution for the composite industry as well as structural adhesive. In addition Advanced Resins offers technical casting for industrial filters.

SikaBiresin® RE by Advanced Resins Team is our brand of Polyurethane and Epoxy Resins for electrical potting and casting. We offer a complete range of flexible and rigid bi-component polyurethane resins as well as epoxies to protect low and medium voltage electrical applications. With our resins SikaBiresin® RE, we guarantee the security and durability of your electrical systems.

Thanks to our two laboratories in Europe as well as two laboratories in China and USA, we are as close as possible to our customers to offer them the best solutions compliant with specific approval such as UL 94, UL 746, EN 45545, AITF etc., for insulation material.

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“As a global leader in electrical potting and casting it is our aim to provide our customers with best in class innovative and tailor made solutions. Being close to our customers is not only a word for us: Worldwide production and on-site support of our experts is the basis of our success. Every day, we are looking forward to create new and better solutions together with our customers.”

MORTEN MUSCHAK

Head Corporate Automotive & Industry

ELECTRICAL INSULATION FOR AUTOMOTIVE INDUSTRY

Our resins provide safety and durability to automotive OEMs for their mechatronic sensor and systems to ensure safety, passenger comfort and CO² reduction. Our resins protect embedded electronics from heat, humidity and chemical aggression.

Drivers' assistance systems improve communication between the driver and its outside environment, as well as the ability to manage autonomous vehicle driving. In the future, electronic systems will strengthen the interaction between the driver and the automobile. For all these applications, Sika offers resin solutions to make the sensors even safer and more reliable.

EXTERNAL APPLICATION

Handle sensor, park sensor, tyre pressure monitoring sensor, latches, etc.



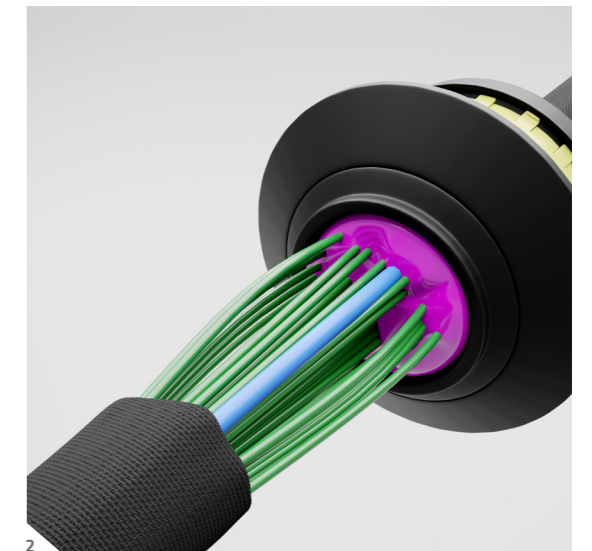
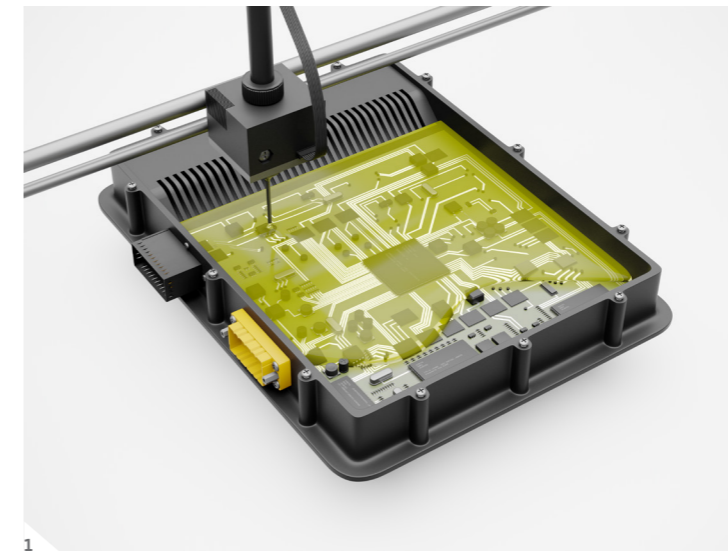
OVERVIEW DIELECTRIC RESINS					
	Characteristics	Shore hardness	Mixed viscosity, at 25 °C [mPa.s]	Pot life, at 25 °C [min]	Density [g/cm ³]
PU					
SikaBiresin® RE263 - RE111	Very soft, unfilled, quick setting material with very good hydrolysis resistance and low dielectric constant ► recommended for sensors	26 A	1,700	12	0.98
SikaBiresin® RE602A - RE602	Semi rigid, chemical delayed thixotropy, with good adhesion on plastic ► used on connectors	60 D	6,000	7	1.30
SikaBiresin® RE812 - RE103	Rigid, good adhesion, very short pot life for short cycle time ► dedicated for switches	80 D	5,700	2	1.38

Placed as close as possible to the engine, our insulating resins help optimize thermal management, improve energy efficiency in order to reduce CO² emissions, but also contribute to the acoustic comfort of the automobile.

The high thermal resistance and the very good chemical resistance to automotive fluids guarantee optimal operation of the electromechanical parts.

ENGINE COMPARTMENT

Harness, electric steering system, gear box sensor, etc.



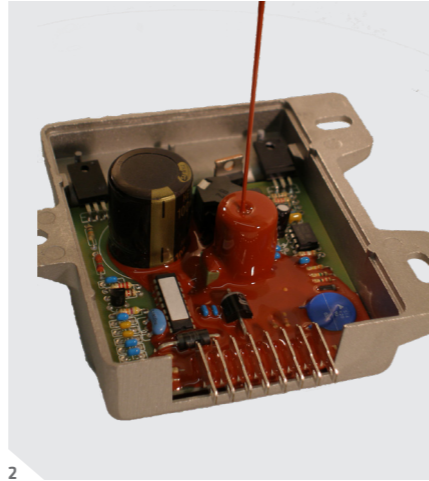
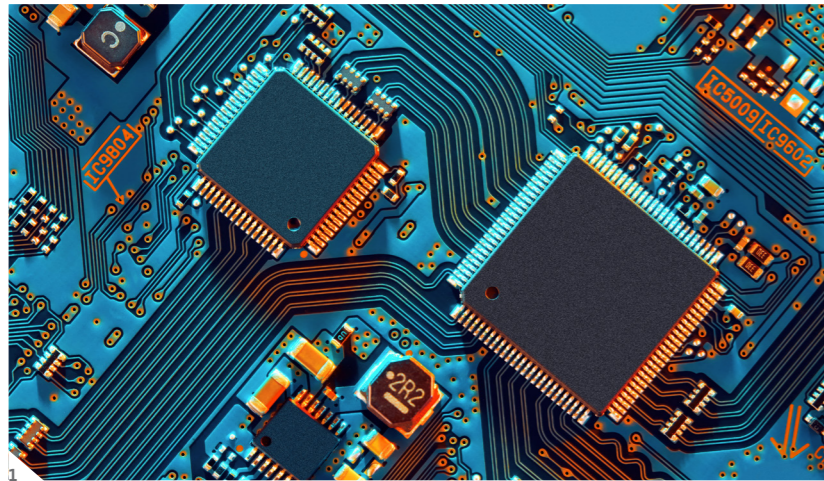
1 Encapsulation Electrical System
2 Main Harness Encapsulation by with SikaBiresin®

OVERVIEW DIELECTRIC RESINS					
	Characteristics	Shore hardness	Mixed viscosity, at 25 °C [mPa.s]	Pot life, at 25 °C [min]	Density [g/cm ³]
PU					
SikaBiresin® RE710-RE102	Soft, low viscosity, short cure	70 A	1,750	11	1.19
SikaBiresin® RE531 - RE102	Semi rigid UL V0, UL 746 RTI 150 °C, EN 45545 approval, high temperature resistance	53 D	1,650	22	1.57
EP					
SikaBiresin® RE915	Single epoxy component low thermal coefficient expansion, high chemical resistance	91 D	60,000	19/120 °C	1.60

ELECTRONIC AND LIGHTING

When varnish protection is not sufficient, our resins protect electronic cards from severe climatic conditions to guarantee exceptional longevity. Typical applications for our resins include underwater, medical and connected devices.

- 1 Underwater Application
- 2 Coating Electronic Circuit



POWER MANAGEMENT

Between the production of electricity and the end user, manufacturers implement electrical equipment throughout the distribution chain to regulate voltage and current but also to monitor devices.

The electricity supply of cities, industry but also transportation must always be guaranteed for the safety of the users. Advanced Resins Team is a major supplier to manufacturers of transformers, capacitors and current and voltage sensors.

Dielectric Measurement Test



OVERVIEW DIELECTRIC RESINS

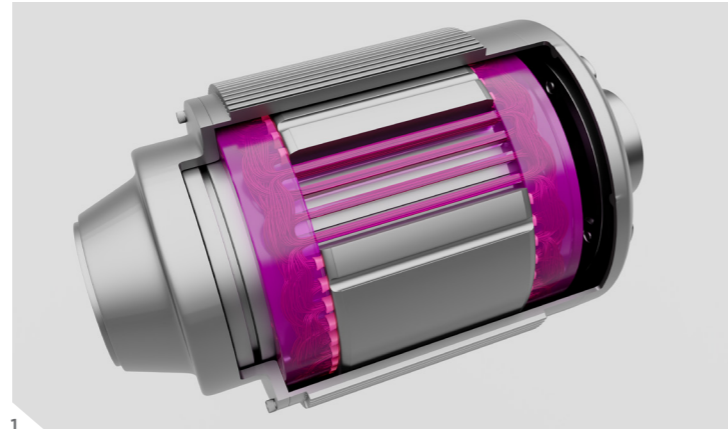
	Characteristics	Shore hardness	Mixed viscosity, at 25 °C [mPa.s]	Pot life, at 25 °C [min]	Density [g/cm ³]
PU					
SikaBiresin® RE451A - RE101	Soft UL 94 VO approval designed to pass thermal shock test -40/+85 °C	45 A	2,150	50	1.28
SikaBiresin® RE501A - RE102	Soft UL 94VO, UL 746 RTI 120 °C approval, high thermal resistance	55 A	2,200	50	1.30
SikaBiresin® RE723 - RE107	Soft and clear UV resistance low viscosity	70 A	300	10	1.13
SikaBiresin® RE461 - RE101	Semi rigid UL VO, EN 45545 approval, multi color and reactivity easy processing	46 D	1,100	30 – 60	1.57

OVERVIEW DIELECTRIC RESINS

	Characteristics	Shore hardness	Mixed viscosity, at 25 °C [mPa.s]	Pot life, at 25 °C [min]	Density [g/cm ³]
PU					
SikaBiresin® RE830 - RE103	Rigid with good thermal conductivity and crack resistance ▶ recommended for CTVT transformer	83 D	1,200	30	1.41
SikaBiresin® RE650 - RE102	Semi rigid ▶ recommended for capacitor	60 A	1,100	85	1.14
SikaBiresin® RE885 - RE103	Rigid, high TG and thermal resistance	88 D	1,900	30	1.53
EP					
SikaBiresin® RE891 - RE203	Rigid epoxy, long pot life, UL 94 VO, high thermal and chemical resistance	89 D	3,000	200	1.49

E-MOBILITY

The accelerated growth of New Electric Vehicles is driven by the consumer and manufacturer need for improved environmental performance with enhanced quality, safety and security features. Heat transfer solution is the new technical challenge for electric and hybrid vehicle manufacturers. Sika's Advanced Resins Team can offer electrical protection and insulation solutions as well as thermal transfer along the current path from the connector, on board charger, battery and electric motor as well as the electronic control unit and management.

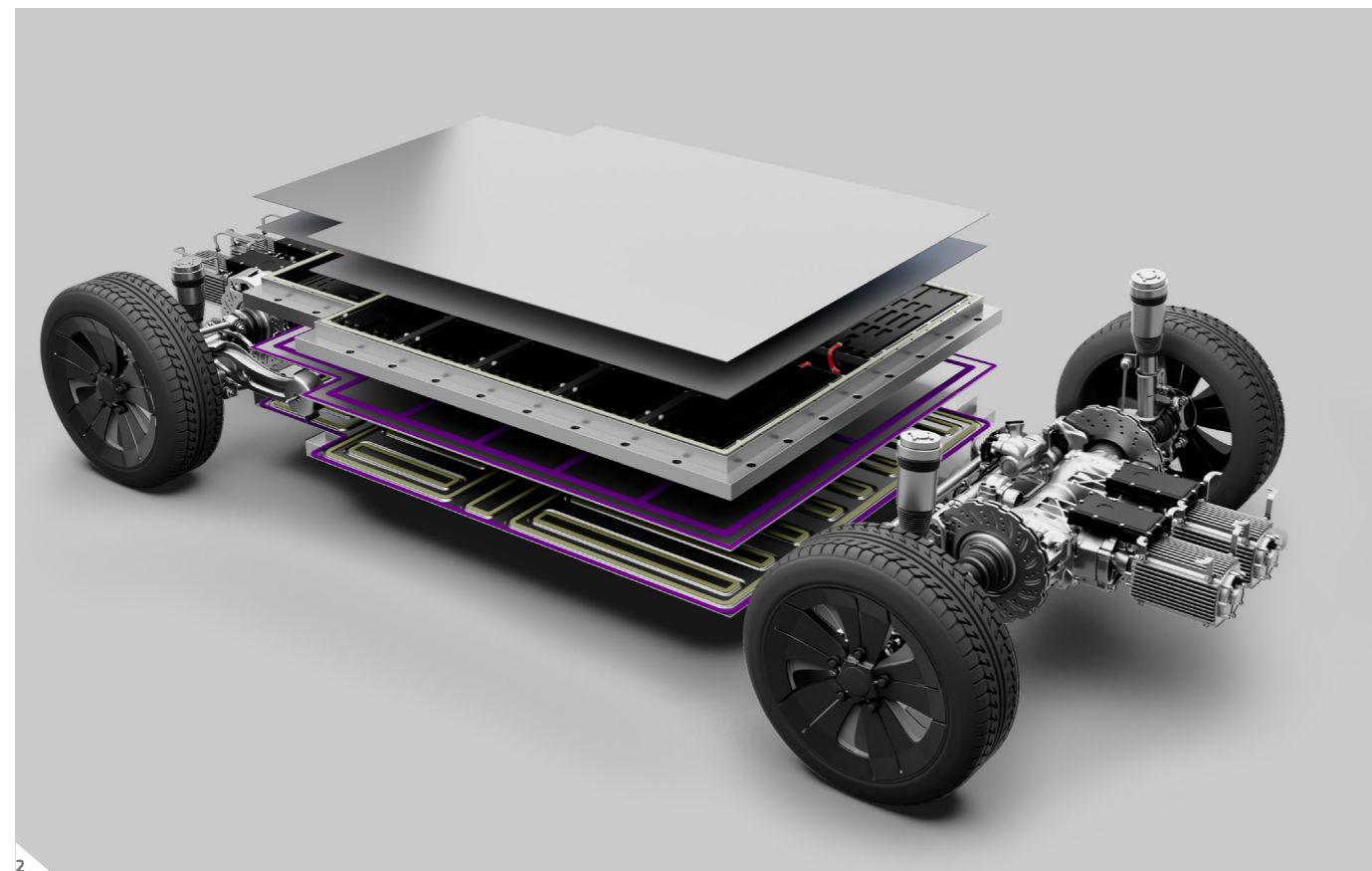


1

Because our customers are constantly looking for innovative solutions to provide more efficient, reliable and safer electric vehicles, we have recently developed a 2-component epoxy resins for the e-Motor Stator encapsulation. This product not only enhance motor performance while facilitation design options, it also allows weight reduction and improvements in manufacturing by cutting cycle times. Our solutions also include multiple dielectric potting chemistries for controllers and on board chargers, as well as harnesses and connectors.

With our full range of SikaBiresin® RE we are able to tackle all major challenges such as:

- 1 Active cooling of high voltage power electronic systems such as OBC (on board charger) and low stress on sensitive component.
- 2 Provide high mechanical and electrical protection as well as crack resistance on e-Motors especially after thermal cycling – 45 °C / + 180 °C
- 3 Deliver durable and safer performance with outstanding heat, chemical and fire resistance.



2

1 e-Motor
2 Battery Pack

OVERVIEW DIELECTRIC RESINS					
	Characteristics	Shore hardness	Mixed viscosity, at 25 °C [mPa.s]	Pot life, at 25 °C [min]	Thermal conductivity [W/m.K]
PU					
SikaBiresin® TC325	Semi rigid thermal conductive pasty good adhesion ► recommended for battery cell bonding	60 D	Thixotropic	30	1.0
SikaBiresin® RE786 - RE102	High thermal conductive material for power electronic application	65 A	5,000	45	1.0
EP					
SikaBiresin® RE896 - RE896	Hot cure epoxy with high crack resistance for e-Motor impregnation	90 D	600/70 °C	60	1.0

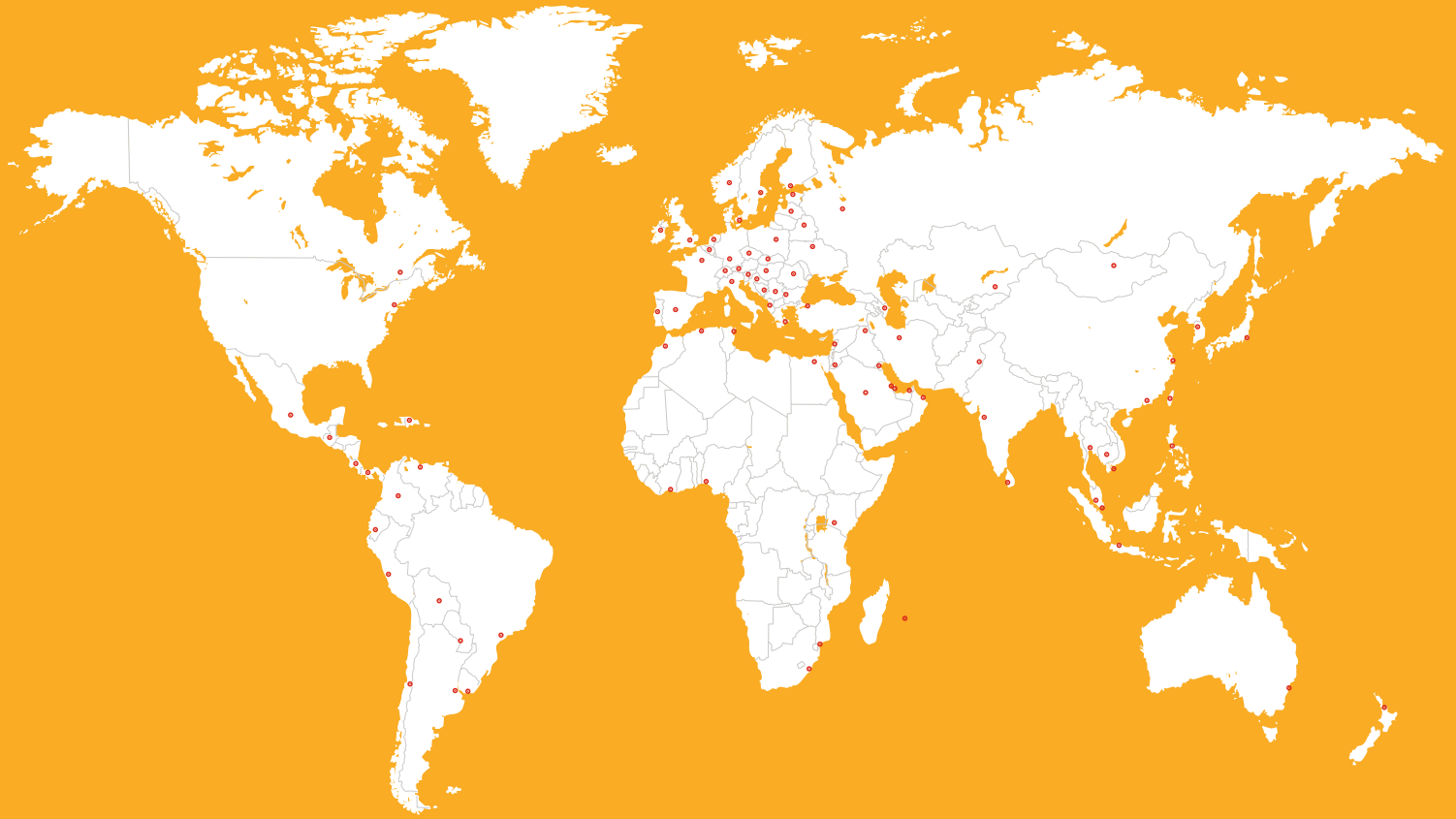
DETAILED INFORMATION: DIELECTRIC RESINS

DIELECTRIC																				
A	B	Characteristics Applications	Colour	Mixing ratio [g]		Mixed viscosity, at 25 °C [mPa.s]	Density	Pot life, at 25 °C [min]	Shore hardness	Tensile strength [MPa]	Elongation at break [%]	Max operating temperature [°C]	Thermal conductivity [W/m.K]	Glass transition temperature [°C]	Water absorption [% / 24h]	Self extinguishing [mm]	Dielectric strength [kV/mm]	Dielectric constant	Dissipation factor	Volume resistivity [Ω.cm]
				A	B															
POLYURETHANE																				
SikaBiresin® RE263	RE111	very soft, water resistance for electronic application	black	100	19	1,700	0.98	11	A 26	0.90	400	100	0.20	- 50	0.30	-	-	3,5	0.02	1E+14
SikaBiresin® RE451A	RE101	soft, UL94 V0, water resistance	black	100	10	2,150	1.28	50	A 47	1.10	145	115	0.40	- 40	0.30	V0 12.7	22	6.0	0.06	2E+12
SikaBiresin® RE501A	RE102	UL94 V0, RTI 120 °C, thermal resistance	black	100	10	2,200	1.30	55	A 57	1.90	300	130	0.30	- 45	1.60	V0 6	21	8.4	0.04	2E+11
SikaBiresin® RE 786		soft, self extinguish, thermal conductivity	black	100	10	5,000	1,76	45	A 65	1,00	380	120	1,00	-35	0,90	V0 3*	24	9,6	0,12	7E+10
SikaBiresin® RE 723	RE 107	soft, transparent, UV resistance	clear	100	100	300	1,13	10	A 72	2,1	70	80	0,20	6	1,70	-	-	11,0	0,16	2E+12
SikaBiresin® RE 820	RE 102	soft, water resistance, radio application	black	100	25	4,300	1,10	10/50	A 82	6,0	230	120	0,25	-50	0,30	-	28	3,5	0,02	1E+16
SikaBiresin® RE 880		soft, thermal resistance	black	100	20	1,500	1,41	40	A 88	6,0	85	130	0,34	-25	0,50	-	23	7,0	0,06	5E+13
SikaBiresin® RE 401	RE 106	semi rigid, self extinguish, isocyanate low toxicity	white	100	21	2,600	1,50	45	A 91	3,5	20	120	0,60	-20	0,5	V0 6*	27	8,0	0,04	5E+12
SikaBiresin® RE 461	RE 101	UL94 V0, EN45545, general purposes	MULTI	100	16	1,100	1,55	10/50	D 46	7,0	110	120	0,70	-5	0,30	V0 6	25	7,7	0,12	2E+14
SikaBiresin® RE 531	RE 102	UL 94 V0, EN45545, RTI 150°C high performance	black	100	14	1,650	1,57	22	D 53	5,0	50	160	0,73	-10	0,30	V0 3	22	7,0	0,14	4E+13
SikaBiresin® RE 551		semi rigid, UL94 V0, affordable price	black	100	14	2,400	1,55	30/60	D 55	5,0	50	130	0,73	- 8	0,30	V0 6	22	7,0	0,14	5E+14
SikaBiresin® RE 560		semi rigid, low viscosity, general purposes	MULTI	100	25	1,300	1,33	25/50	D 56	10,0	110	120	0,32	25	0,30	-	24	4,9	0,06	5E+15
SikaBiresin® RE 602A	RE 602	thixotropic , fast cure	black	100	80	Thixo	1,30	7	D 57	9,0	120	110	0,30	20	0,45	-	18	5,4	0,07	1E+14
SikaBiresin® RE 651	RE 102	semi rigid, self extinguish , general purposes	black	100	20	1,900	1,56	30	D 70	9,0	55	130	0,63	30	0,15	V0 1,5	28	5,3	0,06	4E+12
SikaBiresin® RE 800		rigid, toughness, water resistance	red-black	100	28	1,200	1,38	65	D 80	20,0	20	120	0,35	45	0,20	-	27	4,5	0,03	1E+16
SikaBiresin® RE 812	RE 103	rigid, fast cure, slight thixotropic	beige	100	30	5,700	1,38	2	D 81	20,0	14	130	0,45	50	0,20	-	26	4,8	0,03	2E+16
SikaBiresin® RE 830		rigid, toughness, for CTVT transformer	brown	100	37	1,200	1,41	30	D 83	33,0	12	130	0,45	55	0,20	-	24	4,0	0,01	2E+15
SikaBiresin® RE 851		rigid, self extinguish, thermal conductivity	beige	100	20	3,800	1,63	10	D 85	28,0	4	130	0,75	43	0,17	V0 6*	24	5,0	0,04	2E+16
SikaBiresin® RE 885		rigid, high TG, high performance	MULTI	100	40	1,900	1,53	13/30	D 88	57,0	3	150	0,42	90	0,18	-	25	4,1	0,005	1E+16
EPOXY																				
SikaBiresin® RE 891	RE 203	rigid, UL 94 V0, chemical & thermal resistance	black	100	12	3,000	1,49	200	D 88	40,0	2	160	0,65	65	0,10	V0 6	27	4,0	0,04	5E+15
SikaBiresin® RE 896	RE 896	hot cure epoxy, thermal conductivity, crack resistance	black	100	13	-	2,30	60/70	D 90	70,0	1,2	180	1,00	100	-	V0 6 *	17	5,0	0,02	1E+16
SikaBiresin® RE 915		single hot cure epoxy, chemical & thermal resistance	black	single		60,000	1,60	19	D 91	63,0	1,2	150	0,60	145	0,10	-	-	-	-	-

* Internal test method

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.

GLOBAL BUT LOCAL PARTNERSHIP



WHO WE ARE

Sika AG, Switzerland, is a globally active specialty chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, facades). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting loadbearing structures. Sika's product lines feature highquality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

FOR MORE INFORMATION

www.sika.com/advanced-resins

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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