

EPIC RESINS
POLYMERS FOR INDUSTRY SINCE 1958

LED CIRCUITRY RESINS



EPIC RESINS QUALITY SOLUTIONS FOR LED APPLICATIONS

Epic Resins manufactures a variety of epoxy and polyurethane potting compounds to meet the complex needs of LED lighting manufacturers. These products are designed to protect LED circuitry from harsh demands of outdoor environments, heat generation, liquid exposure and hazardous environments. Epic Resins LED potting and encapsulating materials are used to protect electronic circuitry in a variety of applications including:

- LED Drivers
- Power Supplies
- LED Lamps with Integrated Drivers
- Outdoor LED Displays
- Automotive Lighting
- Decorative and Outdoor Strip Lighting
- Pool and Spa Lighting
- Emergency Lighting and Signaling



SAMPLE APPLICATIONS

The Epic Resins technical sales staff will help you select the proper material for your application. As a custom formulator, if Epic Resins does not currently have a product that fits your needs our state of the art R&D laboratory has the unique capability to custom formulate a product that will fit your specific requirements.

Since 1958 Epic Resins has continually built our reputation for high quality, innovative, cost-effective and customer-focused product development. Our ISO 9001 and ISO 14001 recognized management systems provide the framework that results in unmatched batch-to-batch quality and consistency.

ELECTRONIC POTTING AND ENCAPSULATING COMPOUNDS SELECTION CHART

Product	UL Recognized	Mix Ratio by Weight (A:B)	Mix Ratio by Volume (A:B)	Mixed Viscosity @ 25°C, 20 RPM (cps)	Gel Time @ 25°C	Glass Transition Temp. (Tg)
EPOXIES						
R1055/H5083	Yes	100:18	3.25:1	2,300 – 3,300	300 – 360 Min (100 Grams)	70 – 80 °C
S7512	No	100:9	100:22.1	4,000 – 5,000	150 – 260 Min (100 Grams)	48 – 52 °C
S7513	No	100:14.2	4:1	2,500 – 3,500	100 – 250 Min (100 Grams)	40 – 45 °C
POLYURETHANES						
D9980	No	100:97	1:1	300 – 600	10 – 20 Min (100 Grams)	19 – 24 °C
S7144	No	100:43	3:1	250 – 350	25 – 35 Min (100 Grams)	(-21) – (-23) °C
S7302	No	100:19.5	4:1	2,500 – 3,500	45 – 55 Min (100 Grams)	(-70) – (-65) °C
S7475	Yes	100:17	4:1	3,500 – 4,500	40 – 50 Min (100 Grams)	-55 °C
S7478	Yes	100:8.52	100:12	5,000 – 7,000	25 – 35 Min (100 Grams)	(-5) – (-10) °C
S7515	No	51.5:100	1:2	500 – 700	5 – 10 Min (13 Grams)	25 – 30 °C
S7524	Yes	100:58.4	2:1	170 – 230	20 – 35 Min (100 Grams)	(-19) – (-15) °C
S7527	Yes	100:16.7	5:1	3,000 – 4,000	30 – 50 Min (100 Grams)	(-2.5) – (-1.52) °C

Product	Coefficient of Thermal Expansion (CTE)(EXP-6) in/in °C	Dielectric Strength (volts/mil)	Dissipation Factor (100 kHz)	Volume Resistivity (ohm-cm)	Shore Hardness @ 25°C
EPOXIES					
R1055/H5083	43 – 47	550 @ 0.080"	0.020 – 0.022	1.90e+15 - 2.10e+15	85 – 90 Shore D
S7512	34 – 37	410 @ 0.100"	0.015 – 0.025	2.00e+15 - 2.50e+15	88 – 91 Shore D
S7513	35 – 45	510 @ 0.100"	0.020 – 0.040	1.50e+15 - 2.00e+15	84 – 87 Shore D
POLYURETHANES					
D9980	85 – 95	385 @ 0.100"	0.014 – 0.018	1.00e+15 – 1.20e+15	75 – 80 Shore D
S7144	190 – 210	420 @ 0.125"	0.042 – 0.046	1.10e+13 – 1.20e+13	77 – 83 Shore A
S7302	175 – 190	365 @ 0.125"	0.020 – 0.030	2.40e+12 – 2.80e+12	68 – 72 Shore A
S7475	355 – 365	472 @ 0.095"	0.010 – 0.011	2.70e+12 – 2.80e+12	50 – 65 Shore 00
S7478	100 – 130	450 @ 0.100"	0.040 – 0.070	1.50e+12 – 2.00e+12	75 – 80 Shore A
S7515	200 – 250	340 @ 0.100"	0.040 – 0.060	1.00e+11 – 1.50e+11	30 – 35 Shore D
S7524	285 – 295	422 @ 0.102"	0.105 – 0.125	1.80e+12 – 2.00e+12	61 – 65 Shore A
S7527	165 – 175	855 @ 0.033"	0.025 – 0.032	3.10e+14 – 3.40e+14	88 – 92 Shore A

LED POTTING AND ENCAPSULATING COMPOUNDS



EPOXIES

R1055/H5083

EPIC R1055/H5083 is a UL recognized vacuum grade modified epoxy system with a 180°C RTI. Low mixed viscosity and a long gel time allows this material to achieve 100% penetration of tightly wound coils and tight tolerance spaces in potting applications.

S7512

EPIC S7512 is a thermally conductive epoxy potting compound that possesses a long work life and low mixed viscosity that helps to fully encapsulate tight tolerance areas.

POLYURETHANES

D9980

EPIC D9980 is a rigid, two component aliphatic polyurethane designed to be UV stable, optically clear and display minimal color change and high gloss retention after 1,000 hours of accelerated weather testing. EPIC D9980 has been used in applications that operate up to 130°C.

S7144

EPIC S7144 possesses excellent hydrolytic stability, making this product an excellent choice for use in outdoor LED signage where moisture protection is required.

S7302

EPIC S7302 is a medium durometer polyurethane potting compound used in applications that are subject to regular thermal cycling between -70°C and 135°C with short excursions up to 160°C. EPIC S7302 has low viscosity allowing excellent penetration as well as good adhesion to both plastic and metal case materials.

S7475

EPIC S7475 is a premium, RoHS compliant, polyurethane potting compound that is UL 94 V-0 recognized. Low mixed viscosity allows this material to flow under PCB's and into tight tolerance areas. EPIC S7475 is suited for applications that will see constant thermal cycling due its very low glass transition temperature and soft durometer.

S7478

EPIC S7478 is a flexible, thermally conductive, polyurethane that is UL 94 V-0 recognized in cross sections as thin as 3 mm and maintains a UL RTI rating of 140°C. EPIC S7478 is useful in applications that generate a significant amount of heat and require environmental protection.

S7513

EPIC S7513 is a thermally conductive epoxy potting and casting compound with a low coefficient of thermal expansion (CTE) and low mixed viscosity allowing penetration of intricate areas of electronics applications while reducing stress to delicate components during thermal cycling.

S7515

EPIC S7515 is an optically clear aliphatic polyurethane that has exceptional UV resistance. Low mixed viscosity and short gel time allow for easy air release and quick turnover of parts in high volume production settings.

S7524

EPIC S7524 is a transparent, UL 94 V-0 recognized, polyurethane potting compound. This system is unfilled and is excellent for applications requiring low mixed viscosity for better flow into tight tolerance areas. EPIC S7524 would be an excellent choice for White Goods applications, sensor potting, switches and control modules.

S7527

EPIC S7527 is a UL 94 V-0 recognized polyurethane potting compound with excellent thermal and electrical properties. EPIC S7527 is outstanding for potting and encapsulating sensitive electronics which will be exposed to outdoor environments. EPIC S7527 is designed for use in equipment conforming to UL 8750, the standard for LED equipment for use in lighting products. This polyurethane has undergone extensive UL testing and has achieved a 150°C RTI rating, a rating previously unavailable with flexible polyurethane potting compounds.

CUSTOMER SERVICE AND TECHNICAL SUPPORT

Epic Resins takes great pride in developing customer focused solutions. Our technically trained sales staff will work side by side with your engineering and manufacturing teams to provide application analysis and custom product formulation.

Epic Resins provides the highest level of customer service by partnering in research and development activities with our customers including testing various mechanical and electrical properties to ASTM test methods in our well-equipped Research and Development laboratory. Epic Resins Applications Lab offers a unique opportunity for our customers where we are able to help reduce the time to market on new products by using our in-house meter mix and dispense (MMD) equipment for process design and process verification activities.



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