

EPIC RESINS
POLYMERS FOR INDUSTRY SINCE 1958

RADIO FREQUENCY ENCAPSULATING COMPOUNDS



EPIC RESINS QUALITY SOLUTIONS FOR YOUR RADIO FREQUENCY DEVICE APPLICATIONS

Epics Resins specializes in formulating adhesives, potting and encapsulating products. Since 1958 we have continuously enhanced our world class reputation for innovative, cost-effective and customer-focused product development. We achieve large batch consistency and quality by utilizing ISO certified management techniques.

Our goal is to give our customers the advantage to excel in their market applications and manufacturing processes.

Epics is an integral supplier to a broad base of diverse markets. We have over 50 years of technical, manufacturing and service experience in the products and processes that are vital to the radio frequency device market.

Product	UL Recognized	Mix Ratio by Weight	Mix Ratio by Volume	Viscosity @ 25 °C	Gel Time @ 25 °C (minutes)	Specific Gravity	Glass Transition Temp (Tg)
Epoxies							
S7341	No	100 : 42.5	2 : 1	1,400 – 2,000 cps	100 – 150 (185g)	1.08 – 1.10	80 – 85 °C
S7379	No	100 : 44	2 : 1	3,500 – 6,000 cps	100 – 175 (185g)	1.09 – 1.11	70 – 75 °C
S7493	No	100 : 42.2	2 : 1	1,500 – 2,000 cps	60 – 90 (100g)	1.09 – 1.12	107 – 111 °C
Polyurethanes							
S7527	Yes	100 : 16.7	5 : 1	3,000 – 4,000 cps	40 – 50 (100g)	1.42 – 1.44	(-2.5) – (-1.52) °C
RM2017	No	1 : 2	43 : 100	500 – 1,000 cps	30 – 40 (100g)	0.93 – 0.97	(-23.6) – (-24.0) °C
S7325	No	47.8 : 52.2	1 : 1	900 – 1,100 cps	12 – 18 (60g)	0.95 – 0.96	(-40) °C Maximum
S7391-03	No	100 : 104.8	1 : 1	1,000 – 1,500 cps	25 – 35 (100g)	0.91 – 0.94	N/A
S7253-01	Yes	100 : 18.2	100 : 21.4	1,600 – 2,000 cps	20 – 40 (100g)	1.38 – 1.41	(-2.0) – 2.0 °C

Product	Coefficient of Thermal Expansion (CTE) (EXP-6) in/in °C	Dielectric Strength	Dielectric Constant (@ 100 kHz)	Dissipation Factor (@ 100 kHz)	Volume Resistivity (ohm cm)	Shore Hardness @ 25 °C
Epoxies						
S7341	40 – 45 (EXP-6) in/in °C	590 – 630 Volts/mil (0.06 in)	3.10 – 3.50	0.020 – 0.024	6.00e+16 – 8.00e+16	80 – 85 Shore D
S7379	75 – 80 (EXP-6) in/in °C	720 – 724 Volts/mil (0.068 in)	2.70 – 3.10	0.030 – 0.035	4.00e+15 – 6.00e+15	77 – 80 Shore D
S7493	56 – 60 (EXP-6) in/in °C	1,005 – 1,025 Volts/mil (35 mil)	2.30 – 2.50	0.024 – 0.028	4.00e+14 – 6.00e+14	81 – 86 Shore D
Polyurethanes						
S7527	165 – 175 (EXP-6) in/in °C	450 Volts/mil (0.1 in)	3.80 – 4.00	0.025 – 0.032	3.10e+14 – 3.40e+14	88 – 92 Shore A
RM2017	334 – 336 (EXP-6) in/in °C	417 – 492 Volts/mil (102 mils)	2.41 – 2.63	0.020 – 0.023	1.13e+14 – 1.19e+14	42 – 48 Shore A
S7325	550 – 575 (EXP-6) in/in °C	414 – 416 Volts/mil Min.	3.25 – 3.45	0.010 – 0.020	1.50e+11 – 2.50e+11	17 – 20 Shore A
S7391-03	N/A	160 – 220 Volts/mil (125 mils)	2.25 – 2.50	0.009 – 0.012	2.23e+12 – 2.39e+12	17 – 20 mm (Penetrometer)
S7253-01	79.5 – 87.0 (EXP-6) in/in °C	335 – 365 Volts/mil (0.25 in)	3.71 – 4.10	0.031 – 0.035	4.40e+13 – 4.80e+13	82 – 88 Shore A

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S7341

EPIC S7341 is a two component epoxy system designed for potting automatic meter readers (AMR's) for the water meter market. This compound has more than 10 years of field experience in this application. The optical clarity of this material is key for applications in which visibility to LED's or barcodes under the potted surface is important. EPIC S7341 maintains a low dielectric constant up to a frequency of 1GHz and allows this system to be used in applications with frequencies in the 433/868 MHz band. The excellent physical properties and electrical properties over an extended temperature range make this an ideal candidate for rugged applications. The long work life and low exothermal temperatures are essential for applications with temperature sensitive components.

S7379

EPIC S7379 is a two component epoxy system designed for potting automatic meter readers (AMR's) and advance metering infrastructure (AMI) applications for the gas metering market. Designed around our popular S7341, EPIC S7379 is formulated with improved crack resistance which is critical for handling the thermal shock outdoor environment applications endure. The low dielectric constant allows this system to be used in applications in frequencies of 433/868 MHz band.

S7493

EPIC S7493 is a two component epoxy potting compound designed with a convenient volumetric mix ratio and a fast cure schedule at a moderate temperature to develop optimum properties. The cured epoxy is affected minimally by 100% RH and retains a significant portion of room temperature strength between -54°C and 94°C. The unique combination of physical properties coupled with a low dielectric constant prepares this product to be an excellent candidate for RFID tag potting that can be used over a wide range of frequencies.

S7527

EPIC S7527 is a two component polyurethane that is UL 94V0 recognized and has achieved this rating without the use of halogen containing flame retardants. The S7527 features a medium hardness, extended gel time, improved filler stability and low water absorption. The 5:1 by volume mix ratio makes this material meter mix and dispense machine friendly. This polyurethane is suitable for RF applications with short distance transmit ranges such as access card readers.

RM2017

EPIC RM2017 is a two component polyurethane potting compound designed for use in low to high frequency RF applications. EPIC RM2017's low dielectric constant, coupled with its other electrical properties, allow the user to successfully transmit lower frequency signals over greater distances with low signal loss.

S7325

EPIC S7325 is a low hardness two component polyurethane electrical potting compound designed for automotive applications. Additionally, the superior stability of the dielectric constant up to frequencies of 3GHz makes EPIC S7325 an ideal candidate for various RF and blue-tooth applications. The low glass transition temperature and good stability up to 125°C allows this material to be used in wide temperature range applications. The convenient 1:1 volumetric mix ratio makes this material easy to dispense using meter mix and dispense equipment.

S7391-03

EPIC S7391-03 is a two component polyurethane gel designed for use in automatic meter readers (AMR's) for gas and water metering. The low dielectric constant allows this product to be nearly invisible to RF in the 433/868 MHz band. The gel nature of this product allows use in potting applications where very sensitive components are utilized, inducing the least amount of stress on these components. The low density of S7391-03 is an attractive property for weight sensitive applications and the low water absorption is desirable for outdoor applications. EPIC S7391-03 also maintains a convenient 1:1 volumetric mix ratio and low viscosity for ease of processing.

S7253-01

EPIC S7253-01 is a two component polyurethane potting compound that is UL 94 V0 recognized. This versatile material is suitable for RF applications that operate at a low frequency and have to transmit signals over short distances. EPIC S7253-01 has proven suitability for potting access card readers and other outdoor electronic devices. This material adheres to various metals and plastics providing impenetrable encapsulation of delicate electronics. The low weight loss of EPIC S7253-01 at elevated temperatures suggests that this product is suitable for applications that will reach up to 150°C.

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