



INTRODUCES...

Epoxy for Potting and Encapsulating

Two part epoxy potting and encapsulating compounds are an easy and economical way to provide extreme protection to electronic devices.

Whereas conformal coatings provide a thin protective layer, potting and encapsulating compounds embed electronic devices deep within an extremely hard and durable polymer, providing the ultimate protection from moisture, salt water, chemicals, impact, shock, vibration, heat, electrical arcs, static, and visual inspection. Epoxies provide such strong protection that embedded devices may operate while completely submerged in water, fuel, or chemicals.

These two part systems provide extremely long shelf lives, and long working times, yet they may be cured at room temperature and quickly cured with moderate heat, most formulae curing in one hour at only 65°C (149°F).

- ▶ Easy to mix
- ▶ Long pot life
- ▶ Easy to pour
- ▶ Low cure temperatures
- ▶ Cure time can be accelerated with heat
- ▶ Easy to machine
- ▶ Water and chemical resistant
- ▶ Extreme impact resistance
- ▶ Electrically insulating
- ▶ Protects from static and arcing
- ▶ Provides technology protection
- ▶ RoHS compliant





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Epoxy Comparison Table:

	Standards	Black (832B)	Translucent (832C)	Thermally Conductive (832TC)	High Temperature (832HT)	Flame Retardant (833FRB)	Flame Retardant (834FRB)	Optically Clear Epoxy (8321C)
Uncured Working Properties								
A:B mix ratio (by volume)		2:1	2:1	1:1	2:1	2:1	2:1	3:1
Viscosity Mixture (cP)	ASTM D2983	3,300	3,300	18,000	40,000	3,800	2,600	260
Viscosity Part A (cP)	ASTM D2983	2,200	2,200	21,000	54,800	1,800	1,600	900
Viscosity Part B (cP)	ASTM D2983	8,100	8,100	15,000	11,000	8,300	7,000	10
Working Life (h)		1	1	2	1	1	1	1.5
Cure time at room temp. (h)		24	24	96	24	24	24	48
Cure time at 65 °C (h)		1	1	2	1	1	1	2 h @ 80°C
Shelf Life (year)		≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Cured Properties								
Color		Black	Translucent	Black	Black	Black	Black	Water Clear
Hardness	Shore D	80	85	82	80	83	83	76
Flame Retardant	UL 94V-0	No	No	No	No	Yes	Yes	No
UL Certification File #						E334302	E334302	
Mechanical Properties								
Tensile strength (lb/in ²)	ASTM D638	8,250	8,100	2,700	7,900	—	6,400	—
Elongation %	ASTM D638	3.30%	6.40%	1.90%	3.40%	—	—	—
Compressive strength (lb/in ²)	ASTM D695	22,400	26,500	4,100	11,900	18,600	—	13,300
Flexural strength (lb/in ²)	ASTM D790	16,500	5,500	5,300	14,600	5,800	9,500	8,700
Lap shear strength (lb/in ²)	ASTM D1002	606	640	3,200	1,790	840	—	590
Electrical Properties								
Volume resistivity (ohm·cm)	ASTM D257	5.30E+12	1.20E+16	2.60E+15	9.30E+15	2.70E+15	1.40E+15	2.00E+16
Dielectric strength for 1/8" (V/mil)	ASTM D149	442	406	370	454	348	344	460
Breakdown Voltage for 1/8" (V)	ASTM D149	55,300	50,700	46,200	56,800	43,500	43,000	57,000
Dielectric constant @1 MHz	ASTM D150	2.77	2.99	4.41	2.83	3.18	3.18	3.13
Dielectric dissipation @1 MHz	ASTM D150	0.017	—	0.011	0.014	0.014	0.014	0.019
Comparative Tracking Index	ASTM D3628	—	—	—	—	320	100	—
Thermal Properties								
Tg, glass transition temp. (°C)	ASTM D3638	—	—	25	68	56	56	41
CTE before Tg (ppm/°C)	ASTM D257	104	72	66	76	—	—	83
CTE after Tg (ppm/°C)	ASTM D257	—	—	167	154	—	—	236
Thermal Conductivity (W/(m·K))	ASTM E1530	—	—	0.68	0.22	0.24	0.24	—
Constant service temp (°C)		-30 to +140	-30 to +140	-30 to +175	-30 to +250	-30 to +175	-30 to +175	-30 to +120
Max withstand temperature (°C)		145	145	225	275	225	225	—
Heat deflection temperature (°C)	ASTM D648	47	44	35.4	53.9	—	—	—