

Comparison chart of MG's solvent free Epoxy systems

Typical properties	Standards	832B	832C	832TC	832HT	833FRB	8321C
Color		Black	Clear	Black	Black	Black	Water Clear
Viscosity Part A (cps)		2500	2500	17,920	54,800	4000	900
Viscosity- Part B (cps)		11000	11000	23,070	11,000	14000	10
Mix viscosity (cps)		3300	3300	40,000	40,000	11500	10
Mix ratio (by volume)		2:1	2:1	1:1	2:1	2:1	3:1
Working time		1 hour	1 hour	2 hours	1 hour	1 hour	2-3 hours
Curing Schedule: Room temp.		24 hours	24 hours	96 hours	24 hours	24 hours	48 hours
Elevated temp.		65°C @ 1 hour	65°C @ 1 hour	65°C @ 2 hours	65°C @ 1 hour	65°C @ 1 hour	80°C @ 2 hours
Flammability test	UL 94V-0	NA	NA	NA	NA	UL 94V-0	NA
Total Reflectance in 350-700nm		NA	NE	NA	NA	NA	10%

Physical properties

Tensile strength (PSI)	ASTM D638	8,475	3,246	2,734	7,861	NE	NE
Elongation %	ASTM D638	3.3	6.4	1.87	3.38	NE	NE
Compressive Strength (PSI)	ASTM D695	14,675	8,971	4,088	11,870	18,632	13,299
Fluxural Strength in (PSI)	ASTM D790	16,500	5,549	5,352	14,600	5,830	12,388
Lap shear strength in (PSI)	ASTM D1002	957	702	NA	1,794	843	590
Hardness (Shore D)		80-82	85	82	80	83-84	76-78
Comprative Tracking Index (V)	ASTM 3638	NE	NE	NE	NE	322	NE

Electrical Properties

Surface resistivity (ohms/sq)	ASTM D257	5.3×10^{12}	5.5×10^{15}	3.16×10^{15}	5.3×10^{13}	2.0×10^{15}	$> 1.0 \times 10^{17}$
Volumer resistivity (Ohms.cm)	ASTM D257	NE	1.22×10^{16}	2.58×10^{15}	9.3×10^{15}	2.71×10^{15}	2.0×10^{16}
Dielectric Strength (V/mil)	ASTM D149	471	425	373	326	769	436
Dielectric constant, (@ 100 KHz)	ASTM D150	2.83	3.19	4.41	2.83	3.25	3.19
Breakdown Voltage (kV)	ASTM D149	51.9	NA	NA	54.4	NA	60.6
Comprative Tracking Index (v)	ASTM D3628	NE	NE	NE	NE	322V	NE

Thermal Properties

Glass Transition temp.(Tg)	ASTM D3418					56	41
Heat Deflection Temp. (°C)	ASTM D648	46.638	43.548	35.35	53.9	51.9	NE
Constant service temp. (°C)		(-30C to +140C)	(-30C to +140C)	(-30C to +140C)	(-30C to +140C)	(-30C to +140C)	(-30C to +140C)
Maximum withstanding temp. (°C)		225	225	250	250	225	200
Thermal conductivity (W/ m*K)	ASTM-E-1530-99	NE	NE	0.682	0.21	NE	NE
Thermal Diffusivity (mm ² /s)		NE	NE	0.38	1.33×10^{-13}	NE	NE
Coefficient of thermal expansion	ASTM E 831	0.036" / 10" @ 32°F,	NE	148.3×10^{-6} mm/mm°C	125×10^{-6} mm/mm°C	NE	83.0 μm/m/°C