One-part Epoxy Potting Compound

Description

9510 is a black, rigid, one-part epoxy potting compound. It has unlimited working time at room temperature and does not require frozen storage.

It provides excellent electrical insulation and protects against static discharges, vibration, thermal shock, environmental humidity, salt water, fungus, and many harsh chemicals. 9510 has a low viscosity and can be readily used in manual, pneumatic and robotic dispensing processes.

Features and Benefits

- *Up to 12 months shelf life at room temperature*
- *Minimum cure temperature of 80 °C [176 °F]*
- *Ready to dispense—no mixing is required*
- *Broad service temperature -65 to 150 °C [-85 to 302 °F]*
- *Extremely high tensile and compressive strength*

Usage Parameters

Properties	Value
Working life @22 °C [72 °F]	Unlimited
Full cure @22 °C [72 °F]	Heat cure only
Full cure @80 °C [176 °F]	3 h
Full cure @90 °C [194 °F]	1 h
Full cure @120 °C [248 °F]	30 min

Temperature Ranges

Properties	Value
Constant service temperature	-65 to 150 °C [-85 to 302 °F]
Maximum intermittent temperature	295 °C [563 °F]

Cured Properties

Physical Properties	Method	Value [a]
Color	Visual	Black
Density @25 °C [77 °F]	ASTM D 1475	1.17 g/mL
Hardness	Shore D Durometer	84D
Tensile strength	ASTM D 638	20 N/mm^2 [2 800 lb/in^2]
Compressive strength	ASTM D 695	90 N/mm^2 [13 000 lb/in^2]
Lap shear strength (stainless steel)	ASTM D 1002	9.2 N/mm^2 [1 300 lb/in^2]
Lap shear strength (aluminum)	ASTM D 1002	5.8 N/mm^2 [840 lb/in^2]
Lap shear strength (copper)	ASTM D 1002	8.1 N/mm^2 [1 200 lb/in^2]
Lap shear strength (brass)	ASTM D 1002	7.9 N/mm^2 [1 100 lb/in^2]
Lap shear strength (polycarbonate)	ASTM D 1002	1.1 N/mm^2 [160 lb/in^2]
Electrical Properties	**Method**	**Value**
Breakdown voltage @3.175 mm [1/8"] [b]	ASTM D 149	50 200 V [50.2 kV]
Dielectric strength @3.175 mm [1/8"] [b]	ASTM D 149	400 V/mil [15.8 kV/mm]
Volume resistivity	Method 5011.5 in MIL-STD-883H	2.6 x 10^{13} Ω·cm
Volume conductivity	Method 5011.5 in MIL-STD-883H	3.8 x 10^{-14} S/cm

NOTE: Specifications are for epoxy samples cured at 90 °C for 1 h and conditioned at ambient temperature and humidity.
a) N/mm^2 = mPa; lb/in^2 = psi
b) To allow comparison between products, the dielectric strength was recalculated with the Tautscher equation fitted to 5 experimental values and extrapolated to a standard thickness of 1/8" (3.175 mm).

Cured Properties

Thermal Properties	Method	Value
Glass transition temperature (T_g)	ASTM E 831	70 °C [157 °F]
CTE [a] prior T_g after T_g	ASTM E 831 ASTM E 831	74 ppm/°C [165 ppm/°F] 217 ppm/°C [423 ppm/°F]
Thermal conductivity @25 °C [77 °F] @50 °C [222 °F] @100 °C [212 °F]	ASTM E 1461 92 ASTM E 1461 92 ASTM E 1461 92	0.3 W/(m·K) 0.3 W/(m·K) 0.3 W/(m·K)
Thermal diffusivity @25 °C [77 °F]	ASTM E 1461 92	0.1 mm^2/s
Specific heat capacity @25 °C [77 °F]	ASTM E 1269 01	1.6 J/(g·K)

NOTE: Specifications are for epoxy samples cured at 90 °C for 1 h and conditioned at ambient temperature and humidity.
a) Coefficient of Thermal Expansion (CTE) units are in ppm/°C = in/in/°C × 10-6 = unit/unit/°C × 10-6.

Uncured Properties

Physical Properties	Method	Value
Color	Visual	Black
Viscosity @25 °C [77 °F]	Brookfield viscometer	4 800 cP [4.8 Pa·s] [a]
Density	ASTM D 1475	1.12 g/mL

a) Brookfield viscometer at 20 rpm with spindle LV S63.

Compatibility

Adhesion—9510 epoxy adheres to most plastics and metals used to house printed circuit assemblies; however, it is not compatible with contaminants like water, oil, or greasy flux residues that may affect adhesion. If contamination is present, first clean the surface to be coated with MG Chemicals 824 Isopropyl Alcohol.

For substrates with weak adhesion strength, surface preparation (such as sanding, or pre-coating with a suitable primer) may improve adhesion.

Chemical—The cured epoxy is inert under normal conditions. It can tolerate short-term exposure to fuels or similar non-polar organic solvents, but it may not be suitable for prolonged exposure. Avoid using with strong acids, strong bases, or strong oxidizers.

Storage

Store between -40 and 22 °C [-40 and 72 °F] in a dry area, away from sunlight. Some of the components are sensitive to air. To maximize shelf life, always recap product firmly when not in use.

Shelf life @22 °C [72 °F]	1 y
Shelf life @4 °C [39 °F]	18 months
Shelf life @-10 °C [14 °F]	2 y

Health and Safety

Please see the 9510 Safety Data Sheet (SDS) for further details on transportation, storage, handling, safety guidelines, and regulatory compliance.

Application Instructions

For best results, follow the procedure below. This product does not require mixing prior to use, and can be applied with a spatula, trowel, or automated dispensing machine.

Cartridge:

1. Twist and remove the cap from the cartridge. Do not discard the cap.
2. Dispense the epoxy evenly to both surfaces.
   a. For 30 mL size, insert the cartridge in the 8DG-30-1 dispensing gun (see Application Guide).
3. To stop the flow, pull back on the plunger.
4. Clean nozzle to prevent contamination and material buildup.
5. Replace the cap on the cartridge.

Cure Instructions

Room temperature cure:

Do NOT cure at room temperature. This product will only cure at elevated temperatures.

Heat cure:

- Put in oven at 80 °C [176 °F] for 3 h.
  —OR—
- Put in oven at 90 °C [194 °F] for 1 h.
  —OR—
- Put in oven at 120 °C [248 °F] for 30 min.

Dispensing Accessories

Consult the table below for appropriate accessory selection. See the Application Guide for instructions on using the dispensing accessories.

Cat. No.	Dispensing Gun	Static Mixer
9510-30ML	8DG-30-1	N/A
9510-300ML	See note	N/A

NOTE: 9510-300ML cartridges are compatible with caulking guns that are readily available for purchase at local hardware stores.

Packaging and Supporting Products

Cat. No.	Packaging	Net Weight	Net Volume
9510-30ML	Cartridge	33.6 g [1.18 oz]	30 mL [1.01 fl oz]
9510-300ML	Cartridge	336 g [11.8 oz]	300 mL [10.1 fl oz]

Technical Support

Please contact us regarding any questions, suggestions for improvements, or problems with this product. Application notes, instructions and FAQs are located at www.mgchemicals.com.

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Disclaimer

This information is believed to be accurate. It is intended for professional end users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

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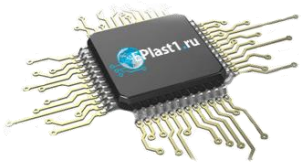

Как с нами связаться

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