

Thermoset DC-812 Epoxy Encapsulant

Description

LORD Thermoset DC-812 epoxy encapsulant is a two-component system designed specifically for potting high voltage, automotive ignition coils.

Features and Benefits

Low Viscosity – maintains low viscosity for complete and void-free encapsulation.

Environmentally Resistant – provides good resistance to thermal shock.

High Temperature Electrical Performance – provides excellent electrical stability at high temperature.

Application

Mixing – Preheat Thermoset DC-812 resin to 95-105°C. Preheat Thermoset DC-812 hardener to 60-70°C. Using automatic meter/mix/dispense equipment, mix resin with hardener at a ratio of 100 parts resin to 46 parts hardener, by volume.

Processing – Preheat ignition coils to 105-110°C for 2 hours. Using automatic meter/mix/dispense equipment, introduce mixed Thermoset DC-812 encapsulant system into coils under a vacuum of 1 torr. Maintain the filled coils at a 1 torr or less vacuum for 10-20 seconds.

Curing – Cure encapsulant using one of the following cure schedules:

- 12-16 hours at 80-90°C
- 2 hours at 90-95°C followed by 2 hours at 115-125°C
- 4 hours at 80-85°C, followed by 2 hours at 115-125°C, followed by 2 hours at 145-155°C

In special circumstances where conditions do not permit the use of either cure schedule, alternate curing cycles may be determined by consultation with LORD.

Cleanup – Disposable containers and utensils are recommended when working with epoxies. However, when disposable materials are impractical, uncured encapsulant can be removed by cleaning equipment with solvent. Solvent-cleaned utensils should be thoroughly dried before reuse; any remaining solvent can contaminate the next mixture.

Typical Properties*

	DC-812 Resin	DC-812 Hardener	Mixed
Appearance	Gray Liquid	Amber Liquid	Tan Liquid
Viscosity, cps @ 25°C	60,000	100	–
Specific Gravity @ 25°C	1.55	1.21	1.46
Gel Time, min @ 121°C	–	–	20
Working Life, day @ 25°C	–	–	1-2

*Data is typical and not to be used for specification purposes.

LORD TECHNICAL DATA

Shelf Life/Storage

Shelf life is six months for Thermoset DC-812 resin and one year for Thermoset DC-812 hardener from date of manufacture when stored at 25°C in original, unopened container.

Thermoset DC-812 resin must be periodically rotated within its container to prevent settling.

Cautionary Information

Before using this or any LORD product, refer to the Material Safety Data Sheet (MSDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Typical Cured Properties**

Volume Resistivity, ohm-cm @ 25°C ASTM D 257	1.4 x 10 ¹⁶
Coefficient of Linear Thermal Expansion, ppm/°C ASTM D 696	32
Hardness Shore D, ASTM D 2240	90
Tensile Strength, MPa ASTM D 638	76.5
Elongation at Break, % ASTM D 638	3.2
Moisture Absorption, % ASTM D 570	0.26
Dielectric Strength, V/mil ASTM D 149	500
Dielectric Constant @ 25°C 1 MHz, ASTM D 150	3.09
Dissipation Factor, % @ 25°C 1 MHz, ASTM D 150	0.016

**Data is typical and not to be used for specification purposes. Cure schedule of 2 hours at 90C plus 2 hours at 120C.

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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