



TECHNICAL INFORMATION

EPOCAP[®] 45137/55137 (formerly EPOCAP[®] 25137) Epoxy Encapsulation System

PRODUCT DESCRIPTION

EPOCAP 45137/55137 is a room temperature cure, two-component, epoxy potting and encapsulating system. This system is UL recognized for Hazardous Locations under file TVLE2.E189694 for Class I, Groups A, B, C and D; Class II, Groups E, F, and G. It is a filled system and exhibits very low shrinkage. It also has good chemical resistance to various fuels and alcohol/fuel mixtures.

This system is designed for potting low to medium voltage electrical components.

HOW TO USE

The individual components containing fillers should be stirred or agitated without introducing excessive air before use to ensure that all fillers are properly dispersed. To obtain the best cured properties, accurate proportioning and thorough mixing are essential. To obtain void free castings, the mixed system should be degassed under vacuum at approximately 29 inches of mercury (or better) for a few minutes, both immediately after mixing and then again after castings are poured, if the work life of the system allows.

MIXING AND CURING SCHEDULE

<u>Ratio</u>	<u>45137</u>	<u>55137</u>
By weight	100	5.5
By volume	100	9

The cure schedule is dependent upon the temperature. The recommended cure schedule will vary with the desired properties. The recommended schedule to achieve the typical properties is shown below:

7 days at 25 °C (77°F)

OR

18 hours @ 25 °C (77 °F) plus 2 hours @ 100 °C (212 °F)

TYPICAL UNCURED PROPERTIES

	<u>45137</u>	<u>55137</u>	<u>Mixed</u>
Color	Red	Amber	Red
Viscosity @ 25 °C, cps	12,000	40	-----
Weight per Gallon, lbs.	13.5	8.2	13.1
Specific Gravity @ 25 °C	1.63	0.99	1.58

Gel time, minutes 100 gm mass @ 25 °C	-----	-----	60
Filler Type	Abrasive	None	Abrasive
Shelf Life (in separate sealed containers), months	12	12	-----

TYPICAL CURED PROPERTIES

(Tested at 25 °C unless otherwise indicated)

<u>Test</u>	<u>Result</u>
Hardness, Shore D	80
Tensile Strength, psi	7,968
Tensile Modulus, psi	1,235,000
Compressive Strength, psi	12,030
Compressive Modulus, psi	294,000
Flexural Strength, psi	15,280
Flexural Modulus, psi	1,107,000
Elongation, %	0.84

TYPICAL THERMAL PROPERTIES

<u>Test</u>	<u>Result</u>
Heat Distortion Temperature, °C	52.5
Recommended Service Temperature, °C	105
Thermal Conductivity, W/m-K	1.2

TYPICAL ELECTRICAL PROPERTIES

<u>Dielectric Constant</u>	<u>100 Hz</u>	<u>1000 Hz</u>	<u>100 kHz</u>
<u>Test Temperature, °C</u>			
25	4.07	4.00	3.88
105	6.54	5.88	4.96

Dissipation Factor

<u>Test Temperature, °C</u>	<u>100 Hz</u>	<u>1000 Hz</u>	<u>100 kHz</u>
25	0.0145	0.0096	0.0230
105	0.3902	0.0999	0.0508

Volume Resistivity, ohm-cm

<u>Test Temperature, °C</u>	
25	1.06 x 10 ¹⁵

Dielectric Strength volts/mil @ 1/8" thickness

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TYPICAL CHEMICAL RESISTANCE PROPERTIES

(Tested at 25 °C unless otherwise indicated)

<u>Total Immersion In:</u>	<u>Immersion</u>	<u>% Weight</u>
	<u>Time,</u>	<u>Gain</u>
	<u>Days</u>	<u>(Loss)</u>
Reference C Fuel	7	0.08
	14	0.14
Reference A Fuel	7	(0.005)
	14	0.003
85% MeOH/15% Reference C Fuel	7	4.54
	14	6.68
15 % MeOH/85% Reference C Fuel	7	5.48
	14	7.43
15 % TBME / 85% Reference C Fuel	7	0.06
	14	0.08
Water @ 82 °C	7	1.46
	14	1.78

STORAGE AND HANDLING

These materials should be stored in a dry environment within a temperature range of 16 °C to 27 °C (60 °F to 80 °F). Extremes of temperature beyond this range may result in crystallization or polymerization of the materials. Introduction of a nitrogen blanket into the containers before closing will improve the storage life of the products.

A wide variety of cleaning solutions are available for cured and uncured epoxies and polyurethanes. For more information on proper recommendations and procedures, contact the Technical Department.

SAFETY

These materials are intended for industrial use only and the practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

Although the system contains low volatility materials, care should be taken in handling. Use adequate ventilation in the work area.

These materials may cause dermatitis in susceptible individuals. Keep off skin and out of eyes. In case of accidental skin contact, wash thoroughly with soap and water. In case of eye contact, flush eyes thoroughly with water and consult a physician immediately.

Refer to Materials Safety Data Sheet for additional information.

ADDITIONAL INFORMATION

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NOTE

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