



TECHNICAL INFORMATION

EPOCAP® 49174/59174 (formerly EPOCAP® 19174) Epoxy Encapsulation System

PRODUCT DESCRIPTION

EPOCAP 49174/59174 is a two-component, room temperature cure electrical potting and encapsulating system with a long work life. This semi-rigid, low viscosity system has excellent thermal shock resistance and excellent impregnation properties. It is recommended for potting tightly wound coils, transformers, time delay relays and other low or medium voltage electrical or electronic devices. The system is UL recognized for UL-94-VO flame rating at 0.250".

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

| Ratio | 49174 | 59174 |
|-----------|-------|-------|
| By weight | 100 | 30 |
| By volume | 100 | 50 |

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 2 hours at 65 °C (150 °F)

TYPICAL UNCURED PROPERTIES

| | 49174 | 59174 | Mixed |
|--------------------------|----------|-------|----------|
| Color | Black | Amber | Black |
| Viscosity @ 25 °C, cps | 55,000 | 500 | 4,000 |
| Weight per Gallon, lbs. | 14.1 | 8 | 12 |
| Specific Gravity @ 25 °C | 1.69 | 0.96 | 1.43 |
| Gel time, minutes | | | |
| 100 gm mass @ 25 °C | --- | --- | 120 |
| Filler Type | Non- | | Non- |
| | Abrasive | None | Abrasive |

Shelf Life (separate sealed

containers), months 12 12 ---

TYPICAL CURED PROPERTIES

(Tested at 25 °C unless otherwise indicated)

| Test | Result |
|---------------------------------|---------|
| Hardness, Shore D | 80 |
| Tensile Strength, psi | 2,030 |
| Compressive Strength, psi | 9,700 |
| Flexural Strength, psi | 3,950 |
| Flexural Modulus, psi | 162,500 |
| Linear Shrinkage, in./in. | 0.0012 |
| Water Absorption, % Weight Gain | |
| After: 7 days immersion | 0.56 |

TYPICAL THERMAL PROPERTIES

| Test | Result |
|---|------------------------|
| Heat Distortion Temperature, °C | < 25 |
| Coefficient of Linear Thermal Expansion, in./in./ °C (+30 to 90 °C) | 131 x 10 ⁻⁶ |
| Thermal Conductivity, cal. x cm./sec. x cm ² x °C | 10 x 10 ⁻⁴ |
| Dry Heat Aging @ 130 °C, % Weight Loss After: | |
| 24 hrs. | 2.31 |
| 7 days | 4.26 |
| UL Flame Retardancy Test | |
| UL-94-VO @ 0.250" | Passes |
| Recommended Service Temperature, °C | 105 |

TYPICAL ELECTRICAL PROPERTIES

| Dielectric Constant | |
|----------------------|---------|
| Test Temperature, °C | 100 kHz |
| 25 | 4.6 |
| 100 | 8.7 |

| Dissipation Factor | |
|----------------------|---------|
| Test Temperature, °C | 100 kHz |
| 25 | 0.063 |
| 100 | 0.99 |

| Volume Resistivity, ohm-cm | |
|----------------------------|-----------------------|
| Test Temperature, °C | |
| 25 | 1 x 10 ¹³ |
| 105 | 3.4 x 10 ⁸ |

Dielectric Strength, Volts/mil 544



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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, nevertheless, care should be taken in handling. Adequate ventilation of work place and ovens is essential.

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 Material Safety Data Sheet for additional information.

ADDITIONAL INFORMATION

Visit our web site at:

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NOTE

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