

Technical Data Sheet

Electrical Insulation Materials

CONAPOXY® FR-1274

Two-Component Epoxy Potting Compound

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CONAPOXY® FR-1274

Product Description

CONAPOXY® FR-1274 is a two-component, mineral-filled, flame-retardant epoxy potting system.

Areas of Application

Potting and encapsulation of electrical / electronic devices such as modules, transformers, and coils as well as strain sensitive applications.

Features and Benefits

- UL94 V-0
- 1:1 Volumetric mix ratio
- Low exotherm
- Long work life
- Excellent thermal shock resistance

Application Methods

- Hand-mix Bench Potting / Casting
- Meter-mix Bench Potting / Casting
- Meter-mix Vacuum Potting / Casting

Transportation / Storage

Store below 25°C / 77°F in a dry controlled environment out of direct sunlight. This material should be suitable for use stored under these conditions in the original sealed containers for twelve (12) months from the date of shipment.

Failure to store the product as recommended above may lead to deterioration in product performance.

This product is sensitive to moisture and atmospheric humidity. Containers, once opened, should be used immediately or blanketed with dry air or nitrogen (CONAP® Dri-Purge) before resealing.

Mix and degas individual components thoroughly prior to use.

CONAPOXY® FR-1274 Part A Resin and CONAPOXY® FR-1274 Part B Hardener contain fillers and should be well mixed prior to use until the filler is redistributed homogeneously.

Health / Safety

Refer to the Safety Data Sheet.

Typical Properties of Material as Supplied

| Property | Conditions | Value | |
|------------------|------------------------------------|--------------------------------|-----------------------------------|
| | | CONAPOXY® FR-1274 Part A Resin | CONAPOXY® FR-1274 Part B Hardener |
| Viscosity | 25°C / 77°F | 27,000 cP | 55,000 cP |
| Specific Gravity | 25°C / 77°F | 1.6 | 1.6 |
| Color | | Black or Tan | Brown |
| Mix Ratio | Parts by weight Parts by volume | 100 100 | 100 100 |
| Flash Point | ASTM D93 | > 94°C > 201°F | > 94°C > 201°F |

CONAPOXY® FR-1274

Typical Properties of Mixed Materials

| Property | Conditions | Value | Units |
|---------------------|---------------------|-----------|----------|
| Viscosity (initial) | 25°C / 77°F | 40,000 | cP |
| Gel Time | 225 g @ 25°C / 77°F | 2 – 3 | hours |
| Peak Exotherm | 200 g @ 25°C / 77°F | 43 110 | °C °F |

Application / Curing Schedule

Mix the FR-1274 Part A and FR-1274 Part B in the ratio specified above until homogeneous. Components may be preheated up to 60°C if reduced viscosity is required. If hand-mixing, degas at >27 in. Hg vacuum before use.

Cure 24 - 48 hours at 25°C / 77°F – **or** – 3 - 5 hours at 60°C / 140°F – **or** – 1 - 2 hours at 80°C / 176°F for maximum properties.

The cure schedules above are based on time after the unit reaches the specified temperature and are recommendations only. The user is responsible for determining the optimum cure conditions for their application.

Typical Electrical Properties

| Property | Test Method | Conditions | Value | Units |
|---------------------|-------------|--------------------------------------------------------------------|------------------------|-------------|
| Dielectric Strength | ASTM D149 | 25°C / 77°F | 400 | volts / mil |
| Dielectric Constant | ASTM D150 | 100 Hz @ 25°C / 77°F 1 kHz @ 25°C / 77°F 1 MHZ @ 25°C / 77°F | 4.4 4.3 3.9 | |
| Dissipation Factor | ASTM D150 | 100 Hz @ 25°C / 77°F 1 kHz @ 25°C / 77°F 1 MHZ @ 25°C / 77°F | 0.08 0.02 0.01 | |
| Volume Resistivity | ASTM D257 | 25°C / 77°F | 8.0 x 10 ¹⁴ | ohm-cm |
| Surface Resistivity | ASTM D257 | 25°C / 77°F | 3.0 x 10 ¹⁷ | ohm |

CONAPOXY® FR-1274**Typical Physical Properties**

| Property | Test Method | Conditions | Value | Units |
|------------------------------------------|-------------|-------------|--------------|----------|
| Color | | 25°C / 77°F | Black or Tan | |
| Specific Gravity | ASTM D792 | 25°C / 77°F | 1.6 | |
| Shore Hardness | ASTM D2240 | 25°C / 77°F | D 80 | |
| Tensile Strength | ASTM D412 | 25°C / 77°F | 5,500 | psi |
| Compressive Strength | | 25°C / 77°F | 10,400 | psi |
| Linear Shrinkage | ASTM D2566 | 25°C / 77°F | 0.1 | % |
| Glass Transition Temp. (T _g) | | | 50 | °C |
| Coefficient of Thermal Expansion | ASTM E831 | | 22 | ppm / °C |
| Thermal Conductivity | ASTM D5930 | | 0.8 | W / m·K |
| Flammability | UL94 | 3 mm | V-0 | |

The above properties are typical values and are not intended for specification use.

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