



ISO-9001-2015 Certified

718 Park East Drive, Woonsocket, RI 02895, USA

Phone: (401) 726-4500

Email: [info@epoxyset.com](mailto:info@epoxyset.com) ■ Web: [www.epoxysetinc.com](http://www.epoxysetinc.com)

# TECHNICAL BULLETIN

## EPOXICAST™ M22

### CAVITY FILL EPOXY ENCAPSULATING COMPOUND

**EPOXICAST™ EC-M22** is a highly filled, low stress liquid encapsulant with very good moisture resistance. It is exceptionally fluid and has very long working life at room temperature. A cavity or potting dam is needed for flow control. The cured system has a low coefficient of thermal expansion, high glass transition temperature, and good dielectric properties.

**EC-M22** can be used for bare chip protection in a variety of advanced packages such as IC memory cards, chip carriers, hybrid circuits, chip-on-board, multi-chip modules, and pin grid & ball grid arrays.

#### TYPICAL HANDLING PROPERTIES:

Epoxicast	M22
Viscosity at 25°C, cp	30,000-40,000
Pot life (500 gram) at 25°C, days	2
Gel time (25 gram) at 125°C, min	10-12
Shelf Life @ -40°C, months	12

**Recommended Cure**     **1 hr/100°C + 2 hr/165°C**

**Alternate Cure**         **4 hr/150°C**

#### TYPICAL CURED PROPERTIES:

(Tested @ 25°C unless otherwise indicated)

Color	Black
Specific Gravity	1.82
Hardness, Shore D	92
Linear Shrinkage (%)	0.1
Water Absorption (24 hr at RT), %	0.02
Glass Transition Temperature, (°C)	146
Service temperature range, °C	-55 to 180
Coefficient of Thermal Expansion, 10 <sup>-6</sup> /°C	
From -55°C to 25°C	25
From 25°C to 120°C	35
Dielectric Constant (1 kHz)	3.6
Dissipation Factor (1 kHz)	0.003
Volume Resistivity, ohm-cm	2.0x10 <sup>16</sup>

#### **Encapsulated Motor Controllers has passed the following thermal Shock tests:**

Liquid to liquid (-40°C to 165°C)	500 cycles
Air to air (-40°C to 165°C)	1000 cycles
High temperature storage (165°C)	1000 hours

#### INSTRUCTIONS FOR USE:

1. Frozen packages must be completely thawed before use.
2. Do not remove the cover of the syringe and let it thaw at room temperature for 30 to 60 minutes depend on quantity.
3. Wipe any condensed moisture from the container and open the cover.
4. Proceed with the potting or encapsulating application and cure as recommended.
5. Some difference in properties may occur with the alternate or other cure schedule.

#### AVAILABILITY:

**Premixed and frozen** - Packaged in 10cc and 30cc disposable syringes and ship in dry ice at -80°C.

#### FOR INDUSTRIAL USE ONLY:

Practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

#### WARNING!

Adequate ventilation of work place and ovens is essential. These materials may cause injury to the skin following prolonged or repeated contact and dermatitis in susceptible individuals. In case of skin contact, wash thoroughly with soap and water. For eyes, flush immediately with plenty of water for at least 10 minutes and seek medical attention. Refer to Material Safety Data Sheet (**MSDS**) for additional health and safety information.

**DISCLAIMER:** All data given here is offered as a guide to the use of these materials and not as a guarantee of their performance. The user should evaluate their suitability for own purposes. Properties are typical and should not be used in preparing specifications. Statements are not to be construed as recommendations to infringe any patent.