



ISO-9001-2015 Certified

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TECHNICAL BULLETIN

EPOXICAST™ M21 SEMICONDUCTOR LIQUID ENCAPSULANT

EPOXICAST™ M21 is a highly filled, low viscosity liquid encapsulant with very good moisture resistance. It is exceptionally fluid and has very long working life at room temperature. M21 will cure very quickly at elevated temperatures. **It is excellent for use as a filling epoxy in dam-and-fill encapsulation as well as underfills for CSP/BGA applications.** The cured system has a low coefficient of thermal expansion, high glass transition temperature, and good dielectric properties.

- **Halogen Free**
- **High Tg**
- **Compatible with most Pb-free solders**

- **Stable electrical performance in temperature humidity bias**
- **Room Temperature Flow Capability**
- **Long Work Life at Room Temperature**

<u>TYPICAL HANDLING PROPERTIES:</u>	
Epoxicast	M21
Viscosity at 25°C, cp	4,000-6,000
Pot life (500 gram) at 25°C, days	2
Gel time (25 gram) at 125°C, min	8-10
Shelf Life @ -40°C, months	12
Recommended Cure	60 min @ 1250°C
Alternate Cure	15 min @ 150°C
<u>TYPICAL CURED PROPERTIES:</u>	
(Tested @ 25°C unless otherwise indicated)	
Color	Black
Specific Gravity	1.62
Hardness, Shore D	90
Linear Shrinkage (%)	0.12
Water Absorption (24 hr at RT), %	0.02
Glass Transition Temperature, (°C)	124
Service temperature range, °C	-55 to 220
Coefficient of Thermal Expansion, 10 ⁻⁶ /°C	
Below Tg	37
Above Tg	>120
Dielectric Constant (1 kHz)	3.6
Dissipation Factor (1 kHz)	0.003
Volume Resistivity, ohm-cm	1.0x10 ¹⁶

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 5 to 20 minutes depend on quantity and size.
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.