ISO-9001-2015 Certified

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# TECHNICAL BULLETIN

## EPOXICAST™ M3120RW
## ONE COMPONENT, REWORKABLE UNDERFILL

**EPOXICAST™ M3120RW** is a reworkable epoxy underfill is designed for CSP and BGA applications. It cures quickly at moderate temperatures to minimize stress to other components. When cured, this material provides excellent mechanical properties to protect solder joints during thermal cycling. M3120RW has high Tg with moderate cure temperatures.

- **One Component**
- **Fast cure at moderate temperatures**
- **Compatible with most Pb-free solders**

**High Tg**
**Room Temperature Flow Capability**
**Long Work Life at Room Temperature**

**TYPICAL HANDLING PROPERTIES:**

| | |
|---|---|
| Epoxicast | M3120-RW |
| Viscosity at 25°C, cp | 950 |
| Pot life (500 gram) at 25°C, days | >2 week |
| Gel time (25 gram) at 100°C, min | 15-20 |
| Shelf Life @ -40°C, months | 12 |

**Recommended Cure** **20 min @ 130°C**
**Alternate Cure** **5-10 min @ 175°C**

**TYPICAL CURED PROPERTIES:**
(Tested @ 25°C unless otherwise indicated)

| | |
|---|---|
| Color | Amber |
| Specific Gravity | 1.15 |
| Hardness, Shore D | 86 |
| Linear Shrinkage (%) | 0.1 |
| Lap Shear Strength, psi | 1400 |
| Water Absorption (24 hr at RT), % | 0.02 |
| Glass Transition Temperature, (°C) | 100 |
| Service temperature range, °C | -55 to 250 |
| Coefficient of Thermal Expansion, $10^{-6}$/°C | |
| Below Tg | 55 |
| Above Tg | 172 |
| Dielectric Constant (1 kHz) | 3.6 |
| Dissipation Factor (1 kHz) | 0.003 |
| Volume Resistivity, ohm-cm | $1.0 \times 10^{16}$ |

**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.

**STORAGE:**
Optimal Storage: -20°C to -40°C. Storage below -80°C or greater than -15 °C can adversely affect product properties.

**WARNING!**
Adequate ventilation of workplace 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.