

## EN 158B2 Encapsulant Fill Product Datasheet

Outstanding Thermal Cycling Performance

Excellent Mechanical shock Performance

High Process Yield

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### **Description**

EN 158B2 encapsulant fill is a combination of capillary flow and encapsulant, rapid curing, fast flowing, easy reworking liquid epoxy which can be used as an underfill encapsulant for chip scale package, ball grid array devices, package on package and land grid array and some flip chip application. It is also suitable for bare chip protection in a variety of advanced packages such as memory cards, chip carriers, hybrid circuits and multi-chip modules. It is designed for high production and friendly environments where process speed, and mechanical shock are the key concern. This material is easily dispensed, minimizes induced stresses and provides outstanding reliability performance (e.g. temperature cycling performance) and excellent mechanical resistance. The performance of the drop test has been improved by two orders of magnitude compared with that with the use of solder paste.

### **Typical Physical Properties**

|                                                      |                           |
|------------------------------------------------------|---------------------------|
| <b>Product Name</b>                                  | EN 158B2 encapsulant fill |
| PROPERTIES OF UNCURED MATERIAL                       |                           |
| Appearance                                           | Black                     |
| Specific Gravity (ASTM D 1475-60)                    | 2.0 g/cc                  |
| Viscosity (Brookfield, 0.5 rpm)                      | 25-45k cp                 |
| PROPERTIES OF CURED MATERIAL                         |                           |
| Glass Transition Temperature (Tg)<br>(ASTM D3418-82) | 149 °C                    |

|                                           |                                    |
|-------------------------------------------|------------------------------------|
| C.T. E ( ASTM E 831), PPM /°C             | $\alpha 1 = 20$ ; $\alpha 2 = 136$ |
| Lap Shear Strength (FR4/FR4)              | 2480 psi                           |
| Extractable ions (MIL-STD-883E)           |                                    |
| Na+                                       | <5ppm                              |
| K+                                        | <5ppm                              |
| F-                                        | <5ppm                              |
| Cl-                                       | <10ppm                             |
| Surface insulation resistance (J-STD-004) | Pass                               |

## **Recommended Curing Conditions**

35-45 minutes at 150 °C

Note: Curing time includes the time to allow the bond location to reach the desired cure temperature. Alternate cure profiles may be evaluated.

## **Storage & Shelf Life**

6 months provided materials are kept in a sealed original container at –40 °C. Storage beyond this period can produce higher viscosity. Protect from moisture, evaporation and foreign materials. Process ability of these products can be adversely affected by evaporation and contamination.

## **Safety**

EN 158B2 is a friendly, non-toxic material. However, general hygiene practice is recommended when handling this material. For detailed information, please consult the product SDS.

## **Package**

EN 158B2 encapsulant fill series are available in 10 cc and 30cc. Other packages are available depending upon customer's request. Contact YINCAE for order information.