

SMT 158U Capillary Underfill Product Datasheet

Outstanding Thermal Cycling Performance

Excellent Mechanical Shock Performance

High Process Yield

Description

SMT 158U capillary underfill is a combination of capillary flow and no-flow underfill, rapid curing, fast flowing liquid epoxy which can be used as an underfill 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 concerns. 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

Product Name	SMT 158U Underfill
PROPERTIES OF UNCURED MATERIAL	
Appearance	White
Specific Gravity (ASTM D 1475-60)	1.8 g/cc
Viscosity (Brookfield, 0.5 rpm)	500 – 800 cp

PROPERTIES OF CURED MATERIAL	
Glass Transition Temperature (Tg) (ASTM D3418-82)	159 °C
C.T. E (ASTM E 831), PPM /°C	$\alpha 1 = 65$; $\alpha 2 = 178$
Extractable ions (MIL-STD-883E)	
Na+	<5ppm
K+	<5ppm
F-	<5ppm
Cl-	<10ppm
Surface insulation resistance (J-STD-004)	Pass

Recommended Curing Conditions

In – line curing or 15 minutes at 150 °C

Note: 15 min 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

SMT 158U is a friendly, non-toxic material. However, general hygiene practice is recommended when handling this material. For detailed information please consult our SDS.

Package

SMT 158U capillary underfill series are available in 10cc and 30cc. Other packages are available depending upon customer's request. Contact YINCAE for order information.