

WL 125 Series Pre-Applied Wafer-level Underfill Product

High Process Yield
Higher Reliability
Low Cost Ownership

Description

The WL 125 Series are pre-applied wafer-level underfills designed for wafer-to-wafer, chip to wafer, chip to chip and chip to substrate application, particularly for 3-10 μ m bumped wafer. The WL 125 Series consists of three products: WL 125L, WL 125M, WL 125H. WL 125 Series underfills can be applied onto wafers by spin coating or printing process. After coating or printing, bumps are exposed by the special method of dissolution. After the exposure of bumps, the coated wafer is B-staged at 125°C for a few minutes, followed by dicing. 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. WL 125 can minimize 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	WL 125 Series Underfill
PROPERTIES OF UNCURED MATERIAL	
Appearance	Colorless Liquid
Specific Gravity (ASTM D 1475-60)	0.95-1.05 g/cc
Viscosity (Brookfield, 0.5 rpm)	L: 10 – 50 cp M: 50 – 100 cp H: 100 – 250 cp

B-stage conditions	125°C for 5 min.
PROPERTIES OF CURED MATERIAL	
Glass Transition Temperature (Tg) (ASTM D3418-82)	125°C
C.T. E (ASTM E 831), PPM /°C	$\alpha_1 = 65$; $\alpha_2 = 175$
Lap Shear Strength (FR4/FR4)	2300 psi
Extractable ions (MIL-STD-883E)	
Na+	<5ppm
K+	<5ppm
F-	<5ppm
Cl-	<10ppm
Surface insulation resistance (J-STD-004)	Pass

Recommended Cure Process

In-line curing or curing thermal compression bonding process

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 UV light, moisture, evaporation and foreign materials. Process ability of these products can be adversely affected by evaporation and contamination.



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Safety

WL 125 is a friendly, non-toxic material. However, general hygiene practice is recommended when handling this material. For detailed information please consult our SDS.

Package

WL 125 capillary underfill series are available in 10cc and 30cc. Other packages are available depending upon customer's request. Contact YINCAE for order information.