

NF 160 Reflowable Underfill Product Datasheet

Soldering and Underfilling in One Process

Low Cost Ownership

Enhance Component Reliability

Description

NF 160 reflowable underfill combines soldering and underfilling process in one step and is designed for high temperature soldering reflow processes (e.g. SAC), and can be used for chip scale package, ball grid array devices, package on package, land grid array, and some flip chip applications. 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, can be dispensed, dipped, or printed, minimizes induced stresses, 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	NF 160 Reflowable Underfill
PROPERTIES OF UNCURED MATERIAL	
Appearance	Brownish Liquid
Specific Gravity (ASTM D 1475-60)	1.07 g/cc
Viscosity (Brookfield, 0.5 rpm)	750 – 70 kcp
PROPERTIES OF CURED MATERIAL	
Glass Transition Temperature (Tg) Via TMA (ASTM D3418-82)	125°C

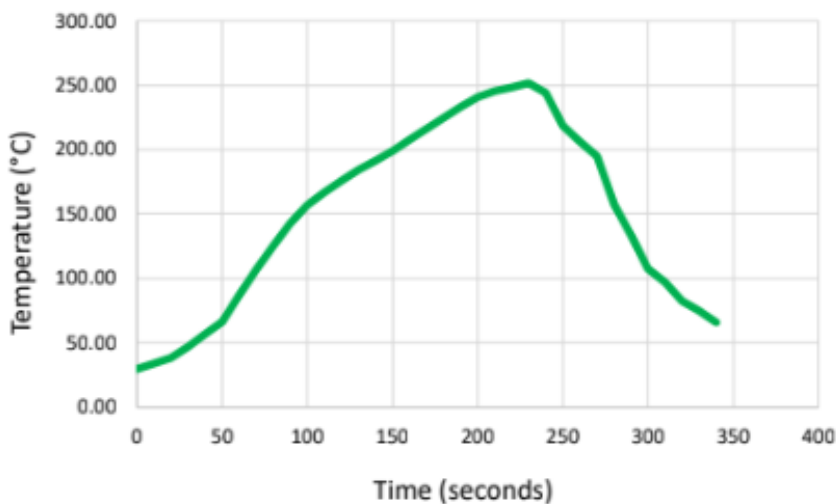
C.T. E (ASTM E 831), PPM /°C	$\alpha_1 = 60$; $\alpha_2 = 132$
Lap Shear Strength (FR4/FR4)	2480 psi
Extractable ions (MIL-STD-883E)	
Na ⁺	<5ppm
K ⁺	<5ppm
F ⁻	<5ppm
Cl ⁻	<10ppm
Surface insulation resistance (J-STD-004)	Pass

Application

NF 160 can be applied using dipping, dispense, print (stencil or screen) or pin transfer process. The dispense pattern should be optimized to reduce voids and achieve high yield. The best reliability can be achieved by optimizing the process parameters and reflow profile.

Dispense NF 160 onto Substrate -> Place BGA/CSP/FC Components -> Reflow Soldering NF 160 Cure

Recommended Curing Conditions



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

NF 160 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

NF 160 filled fluxing underfill series are available in 10cc and 30cc. Other packages are available depending upon customer's request. Contact YINCAE for order information.