



Epoxy for Underfill

Product Description

JD100-5 is one component epoxy adhesive for the application of rework and electronic devices. Cured product is easy to operate and suited for various applications of electronic components, such as casting and sealing. This resin can be fast cured at high temperature, is able to reduce the working time and increase the efficiency at the same time. This product develops tough, strong, structural bonds which provide excellent shear, peel and impact strength. The durability of this resin is very high levels and this resin can pass many environmental test experiments. This product is well suited for flip-chip underfill packaging process, and it can quickly fill the gap between the wafer complete package.

Features

1. This product is solvent-free, non-volatile, system and has no volative materials and will not release any toxic volatilizations.
2. The hardening surface will not exhibit a surface oiliness and poor gloss.
3. This product has low shrinkage.
4. The reactivity of this product is good at the temperature higher than 150°C.
5. Cured product is effective against moisture and water.
6. This product complies to the 2011/65/EU RoHS regulations.
7. This product complies to chlorine < 900ppm, bromine < 900ppm, chlorine + bromine < 1500ppm.

Typical Uncured Properties

Appearance	Liquid
Color	Black
Viscosity 25°C, S14 3rpm, cps	90,000~200,000
Thixotropic Index	> 4
Specific Gravity	1.57
Filler Content, %	55
Particle Size, um	2~10

Typical Curing Properties

Pot Life 25°C, days	3~5
Through Cure Time 150°C, min	30

Direction of Use

1. The package of this resin which is refrigerated in-40~-5°C can be brought to ambient conditions by allowing to stand at room temperature for 2~3 hours. Do not loosen container cover before temperature equilibration.
2. It should be applied to a clean surface which is free of dirt, grease or mold release. In many cases, a simple solvent wipe is sufficient.
3. After heat curing stage, cool down the part gradually can minimize the thermal stress.

4. Cure time on the really part will depend upon factors such as part geometry, materials to be bonded, bondline thickness and efficiency of the oven. Cure schedule should be confirmed with actual production parts and equipment.

Typical Cured Properties*1

Glass Transition Temp.,(TMA), °C	124
CTE*2 (<Tg), µm/m/ °C	32
CTE*2 (>Tg), µm/m/ °C	110
Durometer Hardness, Shore D	90
Flexural Modulus, GPa	8
Specific Gravity	1.6
Water Absorption Ratio (25°C /24hr), %	0.1
Water Absorption Ratio (80°C /24hr), %	0.6
Water Absorption Ratio (97°C /1.5hr), %	0.2
Degradation Temp., (TGA 10°C /min), °C	335
Weight Loss Ratio@100°C, %	0
Weight Loss Ratio@150°C, %	0
Weight Loss Ratio@200°C, %	0
Weight Loss Ratio@250°C, %	0.26
Weight Loss Ratio@300°C, %	2.46
Weight Loss Ratio@350°C, %	6.38
Volume Resistivity, ohm-cm	4.5*10 ¹⁵
Surface Resistivity, ohm	4.5*10 ¹⁴
Dielectric Constant 1KHz	3.2

*1 Specimen Cure Condition : 150°C / 30min

*2 CTE: Coefficient of Thermal Expansion

Storage and Shelf Life

This resin should be kept without any possibility of moisture and heat exposure. It should be storage at -40°C ~ -5°C before opening the containers. Shelf life of this product is eight months.

Before using, it should place this product at 14~34°C for 2 to 3 hours. After using, replace this product at -40°C ~ -5°C immediately. The viscosity and properties will be changed when replace this product at room temperature for long time.

Caution

Some findings indicate a lack of potential for carcinogenicity with the compositions of this product by long term recurrent application to the skin. However, contact with skin is likely to produce mild transient reddening. It is important to remove adhesive from skin with soap and water thoroughly. DO NOT use solvents for cleaning hands. This product of moderate acute toxicity by swallowing. If swallowed, call a physician. Avoid contact with eyes. In case of contact, flush with water for at least 15 minutes and get medical attention immediately. For specific information on this product, consult the Material Safety Data Sheet.