



One Component Epoxy Adhesive

Product Description

JC821-51 is a one component epoxy adhesive for electronic devices bonding. This product exhibits good adhesion strength. This resin can be fast cure at low temperature and is suited for different kinds materials bonding, it is especially good for plastics bonding. The durability of this product is very high levels and this resin can pass many environmental test experiments. This product is well suited for heat sensitive components bonding, Memory cards and C-MOS assembling.

Features

1. This product is solvent-free and non-volatile system.
2. The hardening surface will not exhibit a surface oiliness.
3. This resin offers excellent retention of electrical insulation properties under high humidity conditions.
4. This resin offers excellent chemical resistance and solvent resistance.
5. It is highly vibrate-resist at ordinary temperature.
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

	JC821-51
Appearance	Liquid
Color	Black
Viscosity 25°C, S14 50rpm, cps	18,000~30,000
Thixotropic Index	>2.6

Typical Curing Properties

Pot Life 25°C, days	3
Recommended Cure Time 80°C, min	60

The suggested parameters of high temperature process can be passed IR-reflow three times.

Recommended Cure Time 90°C, min	60
Recommended Cure Time 120°C, min	45
Recommended Cure Time 150°C, min	30

Direction of Use

1. The package of this resin which is refrigerated in -40°C ~ -5°C can be brought to ambient conditions by allowing to stand at 2~10°C for 1hour and then put the resin at room temperature 14 ~ 34°C for 1 to 1.5 hours. It can prevent sharp thaw which might cause syringe expansion and have bubbles. Do not loosen container cover before temperature equilibration.
2. Bonding surfaces should be clean, dry and properly prepared.
3. Apply adhesive to one or both substrates to be bonded. The parts must be held in contact until the adhesive is cured.
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	68
CTE*2 (<Tg), µm/m/ °C	49
CTE*2 (>Tg), µm/m/ °C	167
Specific Heat 0°C, J/g°C	3.33
Specific Heat 25°C, J/g°C	3.50
Specific Heat 50°C, J/g°C	3.85
Specific Heat 75°C, J/g°C	3.97
Specific Heat 100°C, J/g°C	4.06
Durometer Hardness, Shore D	82
Specific Gravity	1.37
Water Absorption Ratio (25°C /24hr), %	0.35
Water Absorption Ratio (80°C /24hr), %	3.25
Water Absorption Ratio (97°C /1.5hr), %	1.62
Shear Strength *3 Al vs. Al, kgf/cm ²	213
Thrust *4 LCP vs. PCB, kg	6.4
Degradation Temp., (TGA 10°C /min), °C	292
Weight Loss Ratio@100°C, %	< 0.5
Weight Loss Ratio@150°C, %	0.71
Weight Loss Ratio@200°C, %	1.41
Weight Loss Ratio@250°C, %	2.69
Weight Loss Ratio@300°C, %	5.89
Weight Loss Ratio@350°C, %	25.05
Thermal Conductivity, W/mK	0.3
Thermal Resistance, m ² K/W	0.01
Volume Resistivity, ohm-cm	5*10 ¹⁵
Surface Resistivity, ohm	5*10 ¹⁴
Dielectric Constant, 100Hz	4.1
Dielectric Constant, 10KHz	4.3
Dielectric Constant, 1MHz	4.5
Dielectric Strength, KV/mm	17

*1 Specimen Cure Condition : 80°C / 60min

*2 CTE: Coefficient of Thermal Expansion

*3 Specimen Size : 4mm x 25mm

*4 Specimen Size : 6 x 6mm Holder, Loop coating, Width 0.3mm.

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 six months. Before using, it should place this product at 14~34°C for 1 to 2 hours.

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.

The data contained in this bulletin is provided only as a guide for evaluation/consideration. These material characteristics are typical properties that are based on a limited number of samples tested in the laboratory. We cannot assume responsibility for results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any product or method. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide.