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Technical Data Sheet

JD 322

One Component Epoxy Adhesive

Product Description

JD322 is one-component epoxy adhesive for electronic components bonding. Cured product exhibits excellent adhesion strength. This product can fast cure at medium-low temperature and is suited for various different kinds of materials bonding, it is especially great for plasitcs bonding. The durability of this product is very high level that can pass many environmental test experiments. This product is greatly suited for memory cards C-MOS assembling and heat sensitive components bonding.

Features

1. This product is solvent-free one-component epoxy.
2. The hardening surface of this product will not exhibit a surface oiliness. Cured product exhibits low gloss.
3. This product offers excellent retention of electrical insulation properties under high humidity conditions.
4. This product offers excellent chemical resistance and solvent resistance.
5. Cured product exhibits excellent protection effect and shock resistance for components.
6. This product exhibits excellent dimensional stability over a wide temperature range.
7. This product complies to the 2011/65/EU RoHS regulations.
8. This product complies to chlorine < 900ppm, bromine < 900ppm, chlorine + bromine < 1500ppm.

Typical Uncured Properties

	JD322
Appearance	Liquid
Color	Black
Viscosity 25°C, S14 5rpm, cps	128,000~192,000
Thixotropic Index	4~6
Filler Grain Size, um	2~5 (Max<10)
Filler Ratio, %	23
Chloride (Cl), ppm	< 50
Potassium (K), ppm	< 10
Sodium (Na), ppm	< 30

Typical Curing Properties

Pot Life 25°C, day	2
Recommended Cure Time, 80°C, min	60
Recommended Cure Time, 90°C, min	50
Recommended Cure Time, 100°C, min	40
Recommended Cure Time, 120°C, min	30
Recommended Cure Time, 150°C, min	20

Direction of Use

1. The package of this resin which is refrigated at -20°C ~ -5°C can be brought to ambient conditions by allowing to stand at 2~13℃ for 1 hou 14~34℃ for 1 to 2 hours. 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 real part will depend on 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., (DSC), °C	132
Glass Transition Temp., (TMA), °C	152
CTE*3 (<Tg), μm/m/°C	48
CTE*3 (>Tg), μm/m/°C	162
Specific Heat 0°C, J/g°C	0.92
Specific Heat 25°C, J/g°C	1.01
Specific Heat 50°C, J/g°C	1.10
Specific Heat 75°C, J/g°C	1.18
Specific Heat 100°C, J/g°C	1.26
Durometer Hardness, Shore D	90
Specific Gravity	1.33
Water Absorption Ratio (25°C/ 24hr), %	0.36
Water Absorption Ratio (80°C/ 24hr), %	1.54
Water Absorption Ratio (97°C/ 1.5hr), %	0.86
Shear Strength, 80℃*60min, LCP vs PCB-FR4, kg/cm^2	102
Shear Strength, 90℃*50min, LCP vs PCB-FR4, kg/cm^2	135
Shear Strength, 100℃*40min, LCP vs PCB-FR4, kg/cm^2	156
Shear Strength, 120℃*30min, LCP vs PCB-FR4, kg/cm^2	162
Shear Strength, 120℃*60min, LCP vs PCB-FR4, kg/cm^2	197
Shear Strength, 150℃*20min, LCP vs PCB-FR4, kg/cm^2	173
Shear Strength, 150℃*60min, LCP vs PCB-FR4, kg/cm^2	218
Thrust Force*2 PC vs PCB-FR4, kg	112.6
Thrust Force*2 PC vs IR Glass, kg	113.8
Thrust Force*2 PA vs PCB-FR4, kg	110.4
Thrust Force*2 PA vs IR Glass, kg	112.4
Thrust Force*2 LCP vs PCB-FR4, kg	111.4
Thrust Force*2 LCP vs IR Glass, kg	112.2
Thrust Force*2 LCP lid vs Epoxy, kg	113.5
Thrust Force*2 SBS vs Epoxy, kg	12.1
Thrust Force*2 FR4 vs Stainless Steel, kg	112.9
Thrust Force*2 LCP vs Stainless Steel, kg	9.6
Thrust Force*2 Wafer Die vs PCB, kg	8.5
Substrate Breaking Strength, Epoxy Sheet, kg/cm^2	285
Elongation, %	7.2
Flexural Module, GPa	11
Young's modulus, 25°C, GPa	8
Young's modulus, 120°C, GPa	0.4
Volume Shrinkage, %	2.9
Weight Loss Ratio @100°C, %	< 0.5
Weight Loss Ratio @150°C, %	< 0.5
Weight Loss Ratio @200°C, %	< 0.5
Weight Loss Ratio @250°C, %	< 0.5
Weight Loss Ratio @300°C, %	< 0.5
Weight Loss Ratio @350°C, %	1.15

Degradation Temp., (TGA 10°C/min), °C	413
Thermal Conductivity, W/mK	0.5
Thermal Resistance, m²K/W	0.006
Volume Resistivity, ohm-cm	$4.5*10^{15}$
Surface Resistivity, ohm	$4.5*10^{14}$
Dielectric Strength, KV/mm	16
Temperature Resistance Range, ℃	-40~150

	Dielectric Constant	Dielectric Loss
1KHz	3.315	0.02
100Hz	3.332	0.03
500Hz	3.322	0.02

*1 Specimen Cure Condition: 120°C / 30min
*2 Specimen Cure Condition: 80°C / 60min
*3 CTE: Coefficient of Thermal Expansion

Storage and Shelf Life

This product should be kept without any possibility of moisture and heat exposure. Shelf lif of this product is 6 months when stored at -20°C ~ -5°C in the original and unopened containers. Before use, this product should be placed at 14~34°C for 1 to 2 hours. If this product is not used over 2 days, store it at 2~13℃. The viscosity of this product will be changed when placing at 14~34°C for over 7 days. If the viscosity of this product is two times over the original one, it is recommended that stop using this product.

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 Safety Data Sheet.