# GLT322

## *One Component Epoxy Adhesive*

GLUDITEC

## INTRODUCTION

GLT322 is a one component epoxy adhesive for electronic devices bonding. This product exhibits good adhesion strength. This resin can be fast cured at low temperature and is suited for different kinds of materials bonding, it is especially good for plasitcs bonding. The durability level of this product is very high and this resin can pass many environmental test experiments. This product is well suited for heat sensitive components bonding, such as memory cards and C-MOS assembling.

## TYPICAL UNCURED PROPERTIES

| | GLT322 |
|---|---|
| Appearance | Liquid |
| Color | Black |
| Viscosity 25oC, 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 25oC, day | 2 |
| Recommended Cure Time 80oC, min | 60 |
| Recommended Cure Time 90oC, min | 50 |
| Recommended Cure Time 100oC, min | 40 |
| Recommended Cure Time 120oC, min | 30 |
| Recommended Cure Time 150oC, min | 20 |

## 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.

## TYPICAL CURED PROPERTIES

| | |
|---|---|
| Glass Transition Temp.,(DSC), °C | 132 |
| Glass Transition Temp.,(TMA), °C | 152 |
| CTE*8(<Tg), μm/m/ °C | 48 |
| CTE*8(>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*1, LCP vs. PCB-FR4, kg/cm2 | 102 |
| Shear Strength*2, LCP vs. PCB-FR4, kg/cm2 | 135 |
| Shear Strength*3, LCP vs. PCB-FR4, kg/cm2 | 156 |
| Shear Strength*4, LCP vs. PCB-FR4, kg/cm2 | 197 |
| Shear Strength*5, LCP vs. PCB-FR4, kg/cm2 | 173 |
| Shear Strength*6, LCP vs. PCB-FR4, kg/cm2 | 218 |
| Thrust force PC vs. PCB-FR4, kg | 12.6 |
| Thrust force PC vs. IR Glass, kg | 13.8 |
| Thrust force PA vs. PCB-FR4, kg | 10.4 |
| Thrust force PA vs. IR Glass, kg | 12.4 |
| Thrust force LCP vs. PCB-FR4, kg | 11.4 |
| Thrust force LCP vs. IR Glass, kg | 12.2 |
| Thrust force LCP lid vs. Epoxy, kg | 13.5 |
| Thrust force SBS vs. Epoxy, kg | 2.1 |
| Thrust force FR4 vs. Stainless Steel, kg | 12.9 |
| Thrust force LCP vs. Stainless Steel, kg | 9.6 |
| Thrust force Wafer Die vs. PCB, kg | 8.5 |
| Breaking Strength, Epoxy sheet, kg/cm2 | 285 |
| Elongation, % | 7.2 |
| Degradation Temp., (TGA 10oC /min), °C | 413 |
| 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 |
| Flexural Module, GPa | 11 |

## TYPICAL CURED PROPERTIES

| | |
|---|---|
| Young's modulus, GPa | 8 |
| Volume Shrinkage, % | 2.9 |
| 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 Constant 100HZ | 5.6 |
| Dielectric Constant 10KHZ | 5.4 |
| Dielectric Constant 1MHZ | 5.2 |
| Dielectric Strength, KV/mm | 16 |
| Temperature Resistance Range, °C | -40~150 |
| *1 Specimen Cure Condition: | 80°C /60min |
| *2 Specimen Cure Condition: | 90°C /50min |
| *3 Specimen Cure Condition: | 100°C /40min |
| *4 Specimen Cure Condition: | 120°C /60min |
| *5 Specimen Cure Condition: | 150°C /20min |
| *6 Specimen Cure Condition: | 150°C /60min |

*7 CTE: Coefficient of Thermal Expansion

## FEATURES

1. This product is solvent-free and non-volatile system.
2. The hardening surface will not exhibit a surface oiliness . Cured product has poor gloss.
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 resin has 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.

## STORAGE AND SHELF LIFE

This resin should be kept without any possibility of moisture and heat exposure. It should be storage at -20°C ~ -5°C before opening the containers. The shelf lif of this product is six months.
Before using, this product should be stored at 14~34°C for 1 to 2 hours. The properties will be changed when replace this product at room temperature for long time.

## DIRECTION OF USE

1. The package of this resin which is refrigated in -20°C~-5°C can be brought to ambient conditions by allowing to stand at room temperature 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 really part will depend upon fators 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.