GLUDITEC
Glue & Dispensing Technology

Technical Data Sheet

ES3401

One component Epoxy for Electronics Devices

ES3401 is a one component epoxy adhesive for the application of electronic devices. This resin develops tough, strong, structural bonds which provide excellent shear, peel, and impact strength. This resin can be applied to the encapsulation of electronic products. The durability of this product is high level and this resin can pass many environmental test experiments.

FEATURE

- This product is solvent-free, non-volatile, which offers excellent protection and vibration resistance for electronic devices.
- This product has excellent dimensional stability over a wide temperature range.
- This resin offers excellent retention of electrical insulation properties under high humidity conditions. It is also effective against moisture and water and still remain the excellent retained strength o after environmental test experiments.
- Comply to the 2011/65/EU RoHS regulations
- Comply to Chlorine < 900ppm, Bromine < 900ppm, Chlorine + Bromine < 1500 ppm

TYPICAL UNCURED PROPERTIES

Properties	ES3401
Appearance	Liquid
Color	Black
Viscosity *25°C, S14, 3 rpm cps	270,000 ~ 460,000
Thixotropic Index	4~6

TYPICAL CURING PROPERTIES

Properties	ES3401
Pot Life, 25°C, days	7
Through Cured Time 120°C, min	40

DIRECTION OF USE

1. The package of this resin which is refrigerated in 2~13°C can be brought to ambient conditions by allowing to stand at room temperature for 2 hours. Do not loosen container cover before temperature equilibration.

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

TYPICAL CURED PROPERTIES

Properties	ES3401
Glass Transition Temp., (DSC), °C	131
CTE (*2) (<Tg), μm/m/°C	47
CTE (*2) (>Tg), μm/m/°C	161
Durometer Hardness, Shore D	90
Specific Heat 0°C, J/g°C	4.76
Specific Heat 25°C, J/g°C	4.87
Specific Heat 50°C, J/g°C	5.03
Specific Heat 75°C, J/g°C	5.27
Specific Heat 100°C, J/g°C	5.42
Water Absorption Ratio (25°C/24hr), %	0.59
Water Absorption Ratio (80°C/24hr), %	2.06
Water Absorption Ratio (97°C/1.5hr), %	0.84
Degradation Temp (TGA 10°C/min), °C	318
Weight Loss Ratio @100°C, %	0.17
Weight Loss Ratio @150°C, %	0.33
Weight Loss Ratio @200°C, %	0.47
Weight Loss Ratio @250°C, %	0.83
Weight Loss Ratio @300°C, %	2.99
Weight Loss Ratio @350°C, %	13.50
Volume Resistivity, Ohm-cm	4.5×10^{15}
Surface Resistivity, Ohm	4.5×10^{14}
Dielectric Constant 1KHz	3.2

(*1) Cure Condition: 120°C/ 40 min
(*2) CTE: Coefficient of Thermal Expansion

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STORAGE AND SHELF LIFE

This resin should be kept without any possibility of moisture and heat exposure. It should be stored at 2^0C ~ 13^0C before opening the containers. This product has one year minimum shelf life. Before using, it should place this product at 14~34^0C for 1 to 2 hours. The properties will be changed when replacing this product at room temperature for a 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 resin is 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.

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