

Product Information Sheet

MATERIAL ID:

EPO-TEK[®] U300-2

Date: Oct 2013

Rev: IX

Material Description:

A two component epoxy designed for capillary underfill of semiconductor chips and SMDs. Long pot-life, high Tg, and optical clarity are a few of its traits. NASA approved low outgassing epoxy (<http://outgassing.nasa.gov>) suitable for electronic applications such as smart cards, RFIDs, medical implants and wafer level camera optics.

Number of Components: Two

Mix Ratio by Weight: 10 : 1

Recommended Cure: 150°C/1 Hour

Specific Gravity: Part A: 1.20 Part B: 1.10

Pot Life: 2 Days

Shelf Life: One year at room temperature

Minimum Alternative Cure(s): <i>may not achieve performance properties below:</i> 120°C / 90 Minutes 80°C / 3 Hours

NOTES: Container(s) should be kept closed when not in use. Filled systems should be stirred thoroughly before mixing and prior to use.

- TOTAL MASS SHOULD NOT EXCEED 25 GRAMS -

MATERIAL CHARACTERISTICS: To be used as a guide only, not as a specification. Data below is not guaranteed. Different batches, conditions and applications yield differing results; Cure condition: 150°C/1 Hour

* denotes test on lot acceptance basis

PHYSICAL PROPERTIES:			
* Color (before cure):	Part A: Clear/Colorless	Part B: Clear/Colorless	
* Consistency	Pourable liquid		
* Viscosity (23°C): @ 20 rpm	3,700 - 6,700 cPs		
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 115 °C (Dynamic Cure: 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)		
Coefficient of Thermal Expansion (CTE):			
Below Tg:	55 x 10 ⁻⁶ in/in°C		
Above Tg:	184 x 10 ⁻⁶ in/in°C		
Shore D Hardness:	80		
Lap Shear @ 23°C:	1,568 psi		
Die Shear @ 23°C:	20 Kg	6,800	psi
Degradation Temp:	425 °C		
Weight Loss:	@ 200°C	< 0.05 %	
	@ 250°C	< 0.05 %	
	@ 300°C	0.15 %	
Operating Temp:			
Continuous:	- 55°C to 225°C		
Intermittent:	- 55°C to 325°C		
Storage Modulus:	268,482 psi		
Ion Content:	Cl:	100 ppm	NA+: 14 ppm
	NH ₄ ⁺ :	274 ppm	K+: 6 ppm
* Particle Size:	N/A microns		

ELECTRICAL AND THERMAL PROPERTIES:	
Thermal Conductivity:	N/A
Volume Resistivity @ 23°C:	≥ 3 x 10 ¹³ Ohm-cm
Dielectric Constant (1KHz):	3.04
Dissipation Factor (1KHz):	0.011

OPTICAL PROPERTIES @ 23°C:	
Spectral Transmission:	≥ 97% @ 600 - 2,100 nm
Index of Refraction:	1.5746 @ 589 nm

This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.

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