

MATERIAL ID**U300-2****CUSTOM FORMULATION
DATA SHEET**Date: 1/97
Rev: 2/98, 7/98

Per: RHE

Material Description: Liquid underfill encapsulant for flip chip
Number of components: Two
Mix Ratio: 10:1 by weight
Cure Schedule (minimum): 150°C/15 min: 120°C/45 min: 80°C/3 hr.
Pot Life: 4 days
Shelf Life: 1 year at 25°C
NOTE: Keep container(s) closed when not in use. Filled systems should be stirred very thoroughly before mixing or use.

MATERIAL CHARACTERISTICS (typical)*:**PHYSICAL PROPERTIES:**

Consistency:	flowable liquid
Viscosity (23°C@ 5 rpm):	2,000 cPs
Thixotropic Index:	3.0
Specific Gravity:	1.2
Shore D Hardness:	88
Lap Shear:	1,500 psi
Die Shear:	>10 kg / > 3,400 psi
Degradation Temp:	440°C
Operating Temp:	
Continuous:	200°C
Intermittent:	300°C
Glass Transition:	130°C
Coeff. of Thermal Expansion:	
Below Tg:	32×10^{-6} in/in°C
Above Tg:	105×10^{-6} in/in°C
Storage Modulus:	1.1×10^6 psi
Outgas to 300°C:	0.6%
NASA Outgassing (150°C/30M):	Pass
Weight Loss During Cure:	0.9%
Moisture Resistance:	85/85 - 1000 hr - pass; autoclave - pass,
H ₂ O/100°C/30 min	0.02%
Flexural Strength:	10,000 psi
Compressive Strength:	19,600 psi
Impact Resistance:	0.38 ft/lb - in
Linear Shrinkage:	.01 in/in

ELECTRICAL/THERMAL PROPERTIES

Volume Resistivity:	1×10^{14} ohm-cm
Dielectric Strength:	450 volt/mil
Dielectric Constant:	4.1
Thermal Shock:	-50°C + 50°C (10 cycle) - pass

The data above is INITIAL only - it may be changed at anytime, for any reason without notice to anyone. It is provided only as a guide for evaluation/consideration.

*These material characteristics are typical properties which are based on a limited number of samples tested in the laboratory. All properties are based on the cure indicated above. Some properties may vary as manufactured quantities are scaled up to production levels.

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