EPOXY TECHNOLOGY

Product Information Sheet

EPO-TEK® OE121

Date: September 2017
Rev: III
No. of Components: Two
Mix Ratio by Weight: 100 : 35
Specific Gravity: Part A: 1.16 Part B: 0.96
Pot Life: 5 Hours
Shelf Life- Bulk: One year at room temperature

Recommended Cure: 80°C / 3 Hours

Minimum Alternative Cure(s):
May not achieve performance properties listed below
90°C / 1 Hour
23°C / 2 Days

NOTES:

- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.

Product Description: A two component, optically clear, low stress, capillary grade semiconductor underfill. It is clear and colorless and capable of curing at low temperatures in the range of 23°C to 80°C, suggested for opto-device flip chip packaging. It can also be used for general potting and encapsulation.

Typical Properties: Cure condition: varies as required Different batches, conditions & applications yield differing results. Data below is not guaranteed. To be used as a guide only, not as a specification. * denotes test on lot acceptance basis

PHYSICAL PROPERTIES:

* Color (before cure):	Part A: Clear Yellow		Part B: Clear/Colorless	
* Consistency:	Pourable liquid			
* Viscosity (23°C) @ 100 rpm:		300 - 500	cPs	
Thixotropic Index:		N/A		
* Glass Transition Temp:		≥ 55	°C	(Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):				
	Below Tg:	43	x 10^{-6} in/in°C	
	Above Tg:	158	x 10^{-6} in/in°C	
Shore D Hardness:		78		
Lap Shear @ 23°C:		1,716	psi	
Die Shear @ 23°C:		≥ 15	Kg	5,334 psi
Degradation Temp:		350	°C	
Weight Loss:				
	@ 200°C:	1.20	%	
	@ 250°C:	1.71	%	
	@ 300°C:	3.91	%	
Suggested Operating Temperature:		< 275	°C (Intermittent)	
Storage Modulus:		248,652	psi	
Ion Content:	Cl^-:	52 ppm	Na^+:	10 ppm
	NH_4^+:	5 ppm	K^+:	2 ppm
* Particle Size:		N/A		

ELECTRICAL AND THERMAL PROPERTIES:

Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 1 x 10^{13}	Ohm-cm
Dielectric Constant (1KHz):	3.52	
Dissipation Factor (1KHz):	0.009	

OPTICAL PROPERTIES @ 23°C:

Spectral Transmission:	> 94% @ 380-1640	nm
Refractive Index (uncured):	1.5271 @ 589	nm

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