Product Information Sheet

EPO-TEK® OE121 Black

Date: September 2017
Rev: IV
No. of Components: Two
Mix Ratio by Weight: 100 : 35
Specific Gravity: Part A: 1.18 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, low temperature curing epoxy adhesive designed for semiconductor flip chip underfill. It is color coded black for visual ID during the underfilling process. It may also be used for adhesive, potting, sealing, and encapsulation applications found within the electronics, medical, and optical industries. It is a black version of EPO-TEK® OE121.

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: Black	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:		81		
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^-:	62 ppm	Na^+:	16 ppm
	NH_4^+:	15 ppm	K^+:	1 ppm
* Particle Size:		≤ 20	microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	N/A	
Volume Resistivity @ 23°C:	≥ 1 x 10^{13}	Ohm-cm
Dielectric Constant (1KHz):	3.67	
Dissipation Factor (1KHz):	0.012	

OPTICAL PROPERTIES @ 23°C:		
Spectral Transmission:	< 1% @ 340-1260	nm
Refractive Index:	N/A	

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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