EPO-TEK® N20E

Technical Data Sheet
For Reference Only
Electrically Conductive Epoxy

Date:	February 2022		**Recommended Cure: 150°C / 1 Hour**
Rev:	VI		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	1 : 1		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 2.93	Part B: 2.86	150°C / 5 Minutes
Pot Life:	1.5 Days		120°C / 15 Minutes
Shelf Life- Bulk:	One year at room temperature		80°C / 3 Hours
Shelf Life- Syringe:	One year at -40°C		

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.

Product Description: EPO-TEK® N20E is a two component, electrically and thermally conductive, epoxy adhesive designed for semiconductor and electronics assembly. Its applications and field conditions include the optical, sensor, consumer, and industrial industries.

Typical Properties: Cure condition: 150°C / 1 Hour 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: Dark grey	Part B: Dark grey	
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 20 rpm:	5,000 - 10,000	cPs	
Thixotropic Index:	1.9		
* Glass Transition Temp:	≥ 70	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	27	x 10^{-6} in/in°C	
Above Tg:	89	x 10^{-6} in/in°C	
Shore D Hardness:	50		
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi	
Degradation Temp:	478	°C	
Weight Loss:			
@ 200°C:	0.07	%	
@ 250°C:	0.22	%	
@ 300°C:	0.81	%	
Suggested Operating Temperature:	< 300	°C (Intermittent)	
Storage Modulus:	1,145,788	psi	
Ion Content:	Cl^-: 34 ppm	Na^+: 265 ppm	
	NH_4^+: 16 ppm	K^+: 10 ppm	
* Particle Size:	≤ 45	microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.2	W/mK
* Volume Resistivity @ 23°C:	≤ 0.07	Ohm-cm

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EPO-TEK® N20E Advantages & Suggested Application Notes:

- Pot life of more than one day allows for mass production and minimal waste.
- Suggested Applications:
  - PCB / Electronics: EMI and Rf shielding of RF and Microwave devices.
  - Opto-electronics: IR, digital imaging, and sensor device interconnects.
- Versatility in cure allows for low temperature, box oven, SMT tunnel oven, hand held, or snap curing techniques to be realized
- Thixotropic nature allows for deposition methods like dispensing, screen printing, stamping, or other patterning techniques.

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