EPO-TEK® T905BN-3

Technical Data Sheet
For Reference Only
Thermally Conductive Epoxy

Date:	December 2023		**Recommended Cure: 80°C / 2 Hours**
Rev:	IX		
No. of Components:	Two		Minimum Alternative Cure(s):
Mix Ratio by Weight:	100 : 14		*May not achieve performance properties listed below*
Specific Gravity:	Part A: 1.65	Part B: 0.96	100°C / 1 Hour
Pot Life:	3 Hours		60°C / 4 Hours
Shelf Life- Bulk:	One year at room temperature		23°C / 48 Hours

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: EPO-TEK® T905BN-3 is a thermally conductive, electrically insulating epoxy designed for heat sinking and encapsulation.

Typical Properties: Cure condition: 80°C / 2 Hours 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: Grey	Part B: Clear
* Consistency:	Granular paste	
* Viscosity (23°C) @ 50 rpm:	2,000 - 7,000	cPs
Thixotropic Index:	1.5	
* Glass Transition Temp:	≥ 40	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	37	x 10^{-6} in/in°C
Above Tg:	151	x 10^{-6} in/in°C
Shore D Hardness:	76	
Lap Shear @ 23°C:	> 1,600	psi
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi
Degradation Temp:	347	°C
Weight Loss:		
@ 200°C:	< 0.05	%
@ 250°C:	0.16	%
@ 300°C:	1.00	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	721,520	psi
* Particle Size:	≤ 300	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	2.0	W/mK
Volume Resistivity @ 23°C:	≥ 3 x 10^{11}	Ohm-cm
Dielectric Constant (1KHz):	3.51	
Dissipation Factor (1KHz):	0.009	

EPOXY TECHNOLOGY, INC.
14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782
www.epotek.com

A Meridian Adhesives Group Company

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EPO-TEK® T905BN-3 Advantages & Suggested Application Notes:

- Potting applications:
  - Low viscosity, self leveling epoxy is ideal for potting applications .
  - Low exothermic chemistry is ideal for large volume casting or potting – up to 10 liters can be realized.
  - Reasonable pot-life allows for repeated cycles of vacuum and pressure, yielding bubble free epoxy and potted elements.
- High thermal conductivity allows for adhesive bonding of heat sinks and metal cases.
- Suggested applications:
  - Hybrids: staking and globbing high power SMDs to ceramic PCB
  - Medical: cooling of ultrasound and x-ray circuits, via adhesive and potting
  - Optical: thermally enhanced laser diode packaging
  - Electronics: encapsulating inductors, Cu coils and SMDs in transformer casings
- After cure, it is capable of being machined, grinded and polished into desired shapes.
- A grey color with a unique granular-like appearance. It should not be used above delicate Au wire bonds, resulting in sweep or break.

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