EPO-TEK® TR2139-LH

Technical Data Sheet
For Reference Only
Low Halogen Thermally Conductive Epoxy

Date:	June 2024
Rev:	I
No. of Components:	Two
Mix Ratio by Weight:	100 : 5
Specific Gravity:	Part A: 1.54 Part B: 1.10
Pot Life:	2.5 Days
Shelf Life- Bulk:	One year at -40°C

Recommended Cure: 150°C / 1 Hour

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® TR2139-LH is a two component, electrically insulating epoxy adhesive designed to meet low halogen standards.

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: Beige	Part B: Amber	
* Consistency:	Smooth slightly thixotropic paste		
* Viscosity (23°C) @ 10 rpm:	22,000-34,000	cPs	
Thixotropic Index:	1.8		
* Glass Transition Temp:	≥ 100	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
Below Tg:	45	x 10^{-6} in/in°C	
Above Tg:	137	x 10^{-6} in/in°C	
Shore D Hardness:	85		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 20	Kg	7,112 psi
Degradation Temp:	419	°C	
Weight Loss:			
@ 200°C:	< 0.05	%	
@ 250°C:	0.19	%	
@ 300°C:	0.43	%	
Suggested Operating Temperature:	< 350	°C (Intermittent)	
Storage Modulus:	610,418	psi	
Ion Content:	Cl^-: ppm	Na^+:	ppm
	NH_4^+: ppm	K^+:	ppm
* Particle Size:	≤ 20	microns	

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	0.5	W/mK

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EPO-TEK® TR2139-LH Advantages & Suggested Application Notes:

- Designed for high throughput dispensed die attach applications
- Offers long pot life (2.5 days)
- Meets international low halogen standards
- Applications:
  - ASIC die attach in acoustic microphones for MEMS devices in mobile applications
  - Die attach in medical grade hearing aids
  - Packaging and encapsulation in watch manufacturing

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