



# EPO-TEK® TJ1104-LH

Technical Data Sheet  
For Reference Only

Low Halogen Thermally Conductive Epoxy

Date:	March 2024
Rev:	VIII
No. of Components:	Single
Mix Ratio by Weight:	N/A
Specific Gravity:	1.72
Pot Life:	> 7 Days
Shelf Life- Bulk:	One year at -40°C
Shelf Life- Syringe:	One year at -40°C

## Recommended Cure: 150°C / 1 Hour

### Minimum Alternative Cure(s):

*May not achieve performance properties listed below*

200°C / 5 Minutes

180°C / 15 Minutes

140°C / 40 Minutes

### 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® TJ1104-LH is a black, single component, low halogen, electrically insulating die attach adhesive with extended pot life.

**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):	Black
* Consistency:	Thick paste
* Viscosity (23°C) @ 1 rpm:	80,000-130,000 cPs
Thixotropic Index:	2.0
* 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:	43 x 10 <sup>-6</sup> in/in°C
Above Tg:	130 x 10 <sup>-6</sup> in/in°C
Shore D Hardness:	88
Lap Shear @ 23°C:	> 2,000 psi
Die Shear @ 23°C:	≥ 20 Kg 7,112 psi
Degradation Temp:	393 °C
Weight Loss:	
@ 200°C:	0.07 %
@ 250°C:	0.11 %
@ 300°C:	0.27 %
Suggested Operating Temperature:	< 325 °C (Intermittent)
Storage Modulus:	1,328,890 psi
Ion Content:	Cl <sup>-</sup> : 53 ppm    Na <sup>+</sup> : 13 ppm NH <sub>4</sub> <sup>+</sup> : 39 ppm    K <sup>+</sup> : 7 ppm
* Particle Size:	≤ 20 microns

### ELECTRICAL AND THERMAL PROPERTIES:

Thermal Conductivity:	0.5 W/mK
Volume Resistivity @ 23°C:	≥ 4 x 10 <sup>13</sup> Ohm-cm
Dielectric Constant (1KHz):	3.68
Dissipation Factor (1KHz):	0.010

Epoxies and Adhesives for Demanding Applications™

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EPOXY TECHNOLOGY, INC.

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*Low Halogen Thermally Conductive Epoxy*

## EPO-TEK® TJ1104-LH Advantages & Suggested Application Notes:

- Designed as a black colored nonconductive die attach.
- Black color allows for easy visual recognition.
- Extremely high strength and moisture resistance making it great for semiconductor and hybrid applications.
- Use as a wire bond encapsulation glob top in high end watches.
- Can be applied with syringe, screen printing, or jetting.
- Designed for LCP bonding with excellent adhesion to a wide variety of substrates.

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