

Date: July 2019
Rev: VII
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: Six months 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 ⁻⁶ in/in°C
	Above Tg:	130	x 10 ⁻⁶ 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 ⁻ : 53 ppm	Na ⁺ : 13 ppm	
	NH ₄ ⁺ : 39 ppm	K ⁺ : 7 ppm	
* Particle Size:	≤ 20	microns	

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

Epoxyes and Adhesives for Demanding Applications™

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.

EPOXY TECHNOLOGY, INC.

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www.epotek.com

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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