



## Product Information Sheet

### EPO-TEK® H31D-LV

**Date:** September 2017  
**Rev:** II  
**No. of Components:** Single  
**Mix Ratio by Weight:** N/A  
**Specific Gravity:** 2.13  
**Pot Life:** 28 Days  
**Shelf Life- Bulk:** Six months 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.
- Failure to ship frozen may result in viscosity growth beyond the range of values herein; customer assumes all risk

**Product Description:** A single component, silver-filled, electrically conductive epoxy designed for semiconductor die attach applications found in hybrids, JEDEC, and opto-electronic packaging. It is a NASA approved low outgassing epoxy. It is a lower viscosity version of EPO-TEK® H31D.

**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):	Silver		
* Consistency:	Smooth paste		
* Viscosity (23°C) @ 20 rpm:	10,000-15,000	cPs	
Thixotropic Index:	1.6		
* Glass Transition Temp:	≥ 110 °C (Dynamic Cure: 20-250°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)		
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	35	x 10 <sup>-6</sup> in/in°C
	Above Tg:	143	x 10 <sup>-6</sup> in/in°C
Shore D Hardness:	85		
Lap Shear @ 23°C:	1,350	psi	
Die Shear @ 23°C:	≥ 5	Kg	1,778 psi
Degradation Temp:	456 °C		
Weight Loss:			
	@ 200°C:	0.07	%
	@ 300°C:	0.08	%
Suggested Operating Temperature:	< 350 °C (Intermittent)		
Storage Modulus:	310,264	psi	
Ion Content:			
	Cl:	17 ppm	Na <sup>+</sup> : 145 ppm
			K <sup>+</sup> : 33 ppm
* Particle Size:	≤ 20	microns	
ELECTRICAL AND THERMAL PROPERTIES:			
Thermal Conductivity:	0.9	W/mK	
* Volume Resistivity @ 23°C:	≤ 0.008	Ohm-cm	

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.

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