EPO-TEK® H20E-SLR

Technical Data Sheet
For Reference Only
Electrically Conductive Epoxy

Date:	November 2019	
Rev:	V	
No. of Components:	Two	
Mix Ratio by Weight:	10 : 8	
Specific Gravity:	Part A: 1.96	Part B: 2.44
Pot Life:	20 Hours	
Shelf Life- Bulk:	One year at room temperature	

Recommended Cure: 140°C / 10 Minutes

Minimum Alternative Cure(s):
May not achieve performance properties listed below
140°C / 35 Seconds
120°C / 15 Minutes
100°C / 2 Hours
80°C / 4 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.

Product Description: EPO-TEK® H20E-SLR is a two-component, electrically conductive, epoxy adhesive for meter mix dispensing applications. It is designed for solar ribbon bonding of photovoltaic modules. It provides the electrical back-contact for ribbon stringing of solar cells into modules and panels.

Typical Properties: Cure condition: 140°C / 10 Minutes 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: Silver	Part B: Silver
* Consistency:	Smooth thixotropic paste	
* Viscosity (23°C) @ 50 rpm:	4,424	cPs
Thixotropic Index:	3.3	
* Glass Transition Temp:	≥ 81	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	48	x 10^{-6} in/in°C
Above Tg:	228	x 10^{-6} in/in°C
Shore D Hardness:	53	
Lap Shear @ 23°C:	1,040	psi
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi
Degradation Temp:	388	°C
Weight Loss:		
@ 200°C:	0.61	%
@ 250°C:	1.99	%
@ 300°C:	3.47	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	1,041,110	psi
* Particle Size:	≤ 20	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.2	W/mK
* Volume Resistivity @ 23°C:	≤ 0.004	Ohm-cm

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EPO-TEK® H20E-SLR Advantages & Suggested Application Notes:

- Strengths include dispensable rheology, fast cure, electrical contact resistance similar to solder and a long pot life.

- Photovoltaic Suggested Applications:
  - Electrically conductive stringing of thin film, organic and crystalline Si solar cells.
  - Compatible with SnCu and AgCu metalized solar ribbons, and TCO substrates such as ITO, ZnO and SnO.
  - Versatility in ribbon bonding geometries, such as dotted or continuous line.
  - In-line/in-situ curing processes in <1 minute at 140°C can be achieved.
  - Reliable green strength holds solar ribbons in position prior to cure.
  - Low temperature cure is well suited for CIGS and OPV/DSC solar cells requiring a low temperature process.
  - EVA film lamination post processing such as 150°C/15-30 minutes enhances performance properties.
  - Suitable for use on IEC 61646, IEC 61730 and UL 1703 certified solar panels.

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