

**Date:** November 2019  
**Rev:** V  
**No. of Components:** Two  
**Mix Ratio by Weight:** 100 : 11  
**Specific Gravity:** Part A: 2.61 Part B: 1.10  
**Pot Life:** 19 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-HVMX is a two-component, electrically conductive, epoxy 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. It is a higher viscosity version of EPO-TEK® H20E-SLR-MX.

**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: Amber	
* Consistency:	Smooth thixotropic paste		
* Viscosity (23°C) @ 50 rpm:	7,174	cPs	
Thixotropic Index:	3.5		
* Glass Transition Temp:	≥ 88	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)	
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	51	x 10 <sup>-6</sup> in/in°C
	Above Tg:	262	x 10 <sup>-6</sup> in/in°C
Shore D Hardness:	55		
Lap Shear @ 23°C:	1,844	psi	
Die Shear @ 23°C:	≥ 10	Kg	3,556 psi
Degradation Temp:	400 °C		
Weight Loss:			
	@ 200°C:	0.36	%
	@ 250°C:	1.27	%
	@ 300°C:	2.40	%
Suggested Operating Temperature:	< 300 °C (Intermittent)		
Storage Modulus:	886,816	psi	
* Particle Size:	≤ 20 microns		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.5	W/mK
* Volume Resistivity @ 23°C:	≤ 0.004	Ohm-cm

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.

14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782

[www.epotek.com](http://www.epotek.com)

## EPO-TEK<sup>®</sup> H20E-SLR-HVMX Advantages & Suggested Application Notes:

- Meter mix format enables cost reduction by eliminating frozen shipments and freezer storage, maximizing pot life on the manufacturing floor, and reduction in precious metal waste.
- Strengths include dispensable rheology, fast cure, electrical contact resistance similar to solder and a long pot life.
- Enhanced green strength for holding ribbons in position prior to cure.
- Optimized viscosity for large needle dispensing.
- 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.

**Epoxy Technology, Inc. Epoxies 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.**

14 FORTUNE DRIVE, BILLERICA, MA 01821 (978) 667-3805, FAX (978) 663-9782

[www.epotek.com](http://www.epotek.com)