

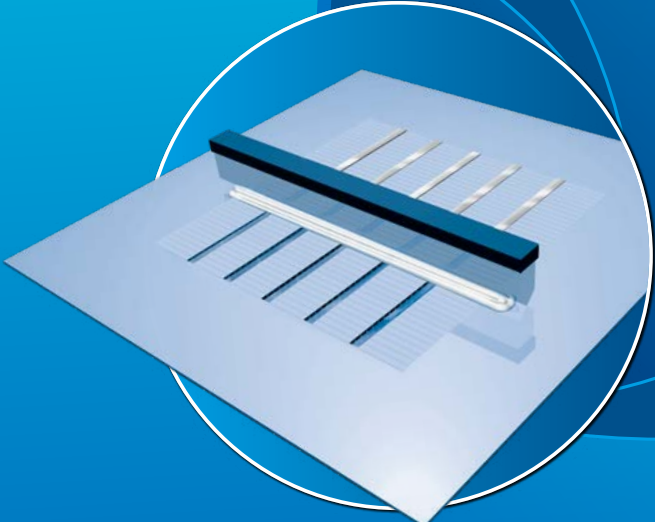
Hecaro™

Electrically Conductive Adhesive for PV

MODULE
PRODUCTION COSTS
DOWN



- 25 YEARS OF ECA EXPERIENCE
- SCREEN PRINTING
- PROVEN RELIABILITY
- FAST CURING PROCESS
- LOWEST SILVER CONTENT



MODULE
RELIABILITY
UP



ELECTRICALLY CONDUCTIVE ADHESIVE



Heraeus' newly developed electrically conductive adhesive (ECA) for PV applications – Hecaro™ – resumes Heraeus' long tradition in providing ECAs to the automotive and semiconductor industry. Hecaro™ is the answer to the PV industry's need for a reliable, cost-effective, fast curing and screen-printable material. Using a unique set of pure Ag particles Hecaro™ provides highest conductivity while viscosity and curing time allow for high-throughput processing.

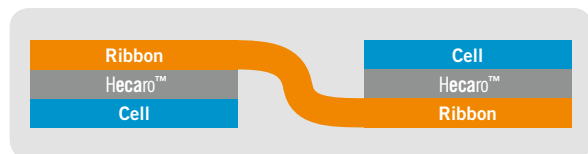
Hecaro™ can be used for all cell and module concepts currently found in PV. The material is appropriate for the application in shingled PV modules, for interconnecting HJT and IBC cells, and enables the replacement of soldering processes in conventional PV modules. Hecaro™ has proven its reliability in long-term climate chamber testing.

APPLICATION CONCEPTS

FOR CELL INTERCONNECTION / BUSBAR REPLACEMENT

Additional Benefits

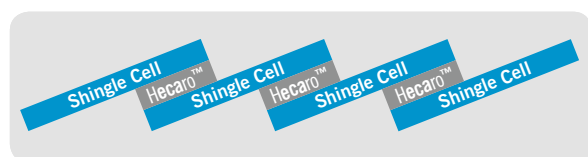
- No solder required
- Higher reliability



FOR SHINGLED CELL MODULES

Additional Benefits

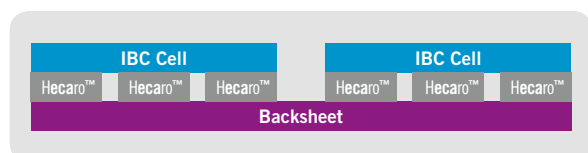
- No ribbon required
- Higher module power



FOR BACK CONTACT SOLAR CELLS

Additional Benefits

- No ribbon required
- No shading



MATERIAL PROPERTIES

Silver content: < 50 %

Solid content: 78 +/- 1 %

Density: 3 ± 0.2 g/cm³

Pot life: 48 h

Viscosity (CP 25-2 Anton Paar):

15–30 Pas at 50 s⁻¹

Typical properties of cured ECA

Volume resistivity: 0.3 mOhm cm

Storage modulus at 25°C: 700 MPa

Glass transition temperature: 15°C

Shear strength: 6 MPa

RECOMMENDED PROCESSING GUIDELINES

Printing: Screen parameter recommendations with stainless steel screen:

≥ 300 μm opening:

- 200 mesh, 40 μm or
- 250 mesh, 30 μm or
- 290 mesh, 20 μm

EOM thickness: 8–16 μm

Curing: Typically cured on a hot plate with set points of 180–200°C in 30 seconds or 150–200°C for 3 minutes in circulated air oven.

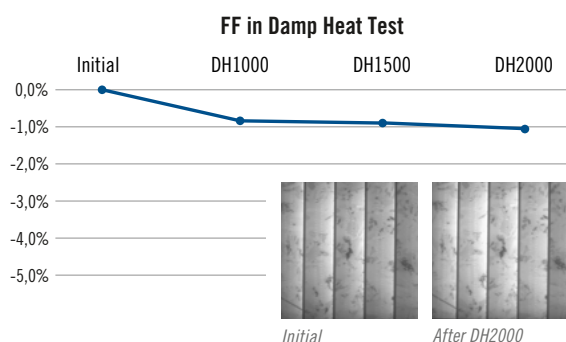
Storage:

REFRIGERATION REQUIRED.

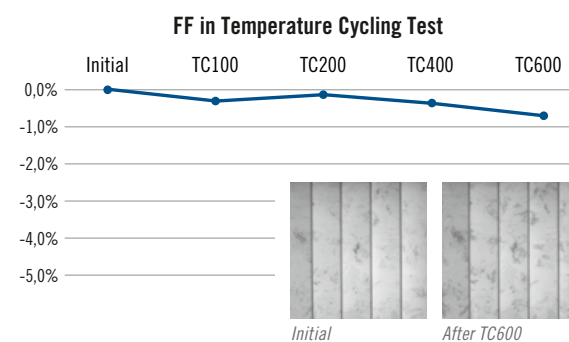
Store in a freezer at or below -20°C. Allow adhesive to come to room temperature prior to opening the container to avoid condensation. Stir well before using.

RELIABILITY DATA

DH2000 passed



TC600 passed



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