

Helios ETL Spray H-SZ11034 semi-conductive ink was developed for the printed electronics market and is particularly well suited for OPV and PV.

Helios ETL Spray H-SZ11034 shows great performances on spray coating and is compatible with various flexible substrates (polyimide, PET, PET/ITO, ...) but also glass/ITO.

### Processing: Spray coating

#### Ready-to-Use Ink

Material	ZnO nanoparticles
Solvent type	Alcohol mix
Viscosity (20°C)	11,0 ± 3,0 mPa.s
Surface tension	29 ± 5 mN/m
Storage stability	6 months at 18-25 °C away from light

#### Typical Electrical Properties

Work function	4.0 ± 0.1 eV
Valence band	7.9 ± 0.1 eV
Conductivity (before illumination)	10 <sup>-8</sup> – 10 <sup>-7</sup> S/cm
Conductivity (under illumination with UV light)	10 <sup>-4</sup> – 10 <sup>-3</sup> S/cm

#### Key advantages & benefits

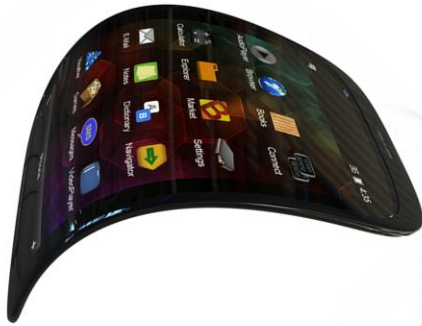
- Easy deposition under atmospheric conditions (Temperature and Pressure)
- Good optical performances (Visible light transmission > 90%)
- Non CMR ink
- Compatible with ITO and Ag NWs layers
- Compatible with most flexible substrates
- Low drying temperature making printing onto flexible substrates possible
- Thin layers are obtained (20 nm) with low roughness (RMS = 3 ± 1 nm)

#### Typical Processing guidelines

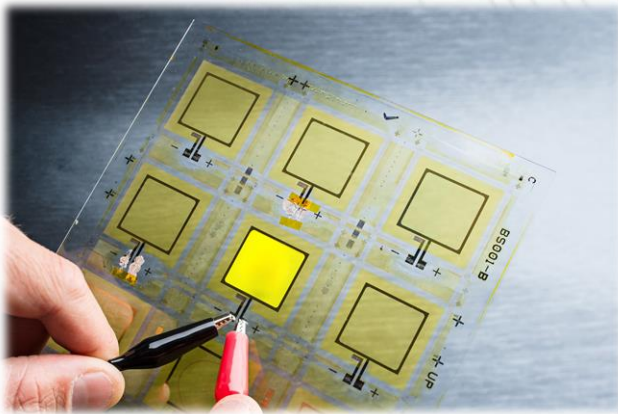
- Helios ETL Spray H-SZ11034 Semi Conductive Ink can be homogenized for 5 minutes in an ultrasonic bath in order to get rid of any aggregates
- Filtration on a 0.45 µm PTFE filter syringe to avoid any nozzles clogging
- Drying conditions: Oven, IR oven, Vacuum oven
- Clean-up solution: Ethanol/Acetone

## Applications

### Flexible OLED Display



OLED on glass/ITO



### Flexible Transparent OPV



## Shipping & Packaging

- Standard sample order is 100 ml
- Standard bulk order is 1 l
- Standard delivery time is 10 days

For more information on our semi conductive inks, please contact:



39, Avenue Gaston Imbert - 13106 Rousset Cedex  
FRANCE

Tel : +33 (0)4 42 37 05 80

Fax : +33 (0)4 42 20 07 03

[contact@genesink.com](mailto:contact@genesink.com)

<http://www.genesink.com>

#### Limited Warranty

GenesInk guarantees the quality of its products. Since GenesInk cannot anticipate or control factors and variables under which the products and information will be used, GenesInk cannot guarantee the results. Shelf life of material is defined for unopened containers from date of shipment. The information provided by GenesInk is provided in good faith, and the responsibility is limited solely to the exchange of the product supplied. The information provided in this technical sheet is provided as guidelines and is not intended to represent or warrant or ensure suitability of the product for any specific uses..