

## Helios ETL D Slot Die (H-DZ41006)

Helios ETL D Slot Die (H-DZ41006) Semi Conductive Ink was developed for the printed electronics market and is particularly well suited for standard and invert OPV device.

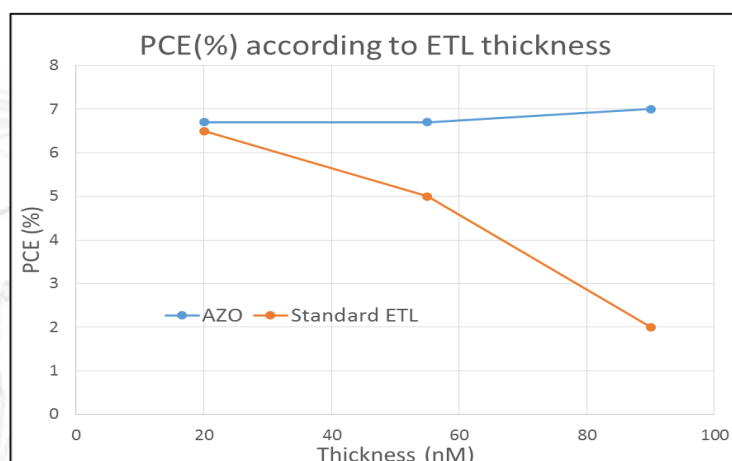
Helios ETL D Slot Die (H-DZ41006) Semi Conductive Ink shows great performance on slot die coating and is compatible with various flexible substrates (Kapton, PET, PET/ITO, ...) but also Glass/ITO. The use of Helios ETL D Slot Die (H-DZ41006) Semi Conductive Ink is greatly improving the devices performances by reducing the roughness of the TCE without a negative impact on the electrical conductivity and the transparency.

Life time of the devices is also increased. The use of Helios ETL D Slot Die (H-DZ41006) Semi Conductive Ink provides ETL layer with high performances. In addition, compared to standard ETL, the PCE not retained even with higher thickness.

### Process: Slot Die

#### Ready-to-Use Ink

Material	AZO nanoparticles
Solvent type	Alcohol
Viscosity (20°C)	< 4 mPa.s
Surface Tension	23 ± 5 mN/m
Storage stability	6 months at 18-25 °C Away from light



#### Key advantages & benefits

- Easy deposition under atmospheric conditions (temperature and pressure)
- Good optical performances (Visible light transmission > 90%)
- Non-Toxic (No CMR ink)
- Compatible with ITO layer and Ag NWs layer
- Compatible with most flexible substrates
- Low drying temperature making printing onto flexible substrates possible

#### Typical Electrical Properties

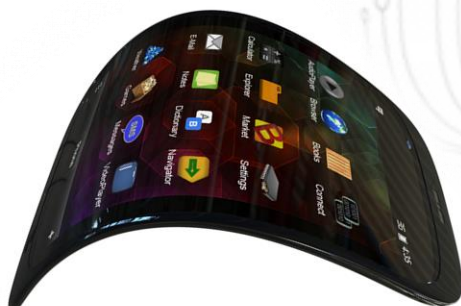
Work function	3.6 ± 0.1 eV
Conductivity	10 <sup>-3</sup> – 10 <sup>-4</sup> S/cm

## Typical Processing Guideline

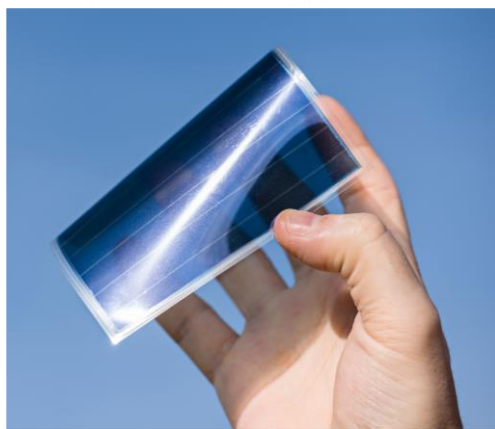
- Helios ETL D Slot Die (H-DZ41006) Semi Conductive Ink can be homogenized for 5 minutes in an ultrasonic bath in order to get rid of any aggregates
- Filtration on a 0.45 µm PTFE filter syringe to avoid any nozzles clogging
- Drying conditions: Oven, IR oven, Vacuum oven
- Clean-up solution: Ethanol/Acetone

## Applications

### Flexible OLED Display



### OLED & OPV grid



## 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:



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