

## Solvent-Based Clevios™

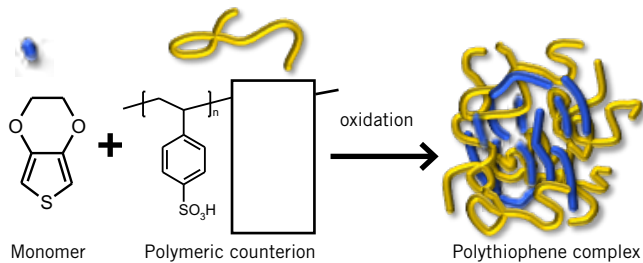


Polythiophene  
(RD Clevios™ P SB 12)  
dispersed in anisole/butanol

### Waterless Conductive Polymer for Solvent-Based Polymer Systems

New polythiophene-based systems from Heraeus Epurio:

- Waterless, non-aqueous, intrinsically conductive, transparent polymers
- Antistatic / dissipative effect (< 10 E9 Ohm/sq) at low dosage
- Compatible with many polymer systems such as polyacrylates

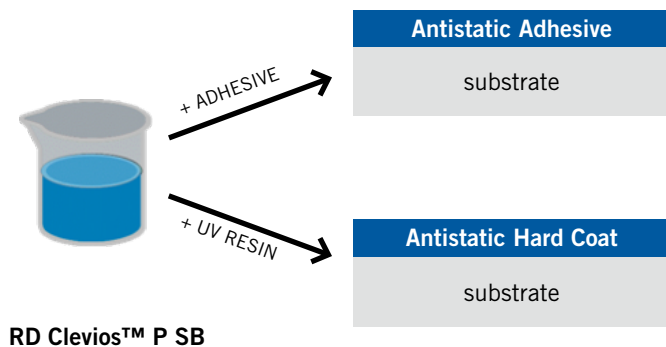


Solvent compatibility	RD Clevios™ P SB 6	RD Clevios™ P SB 12
Typical sheet resistance (Ohm/sq) of undiluted polythiophene	1 x 10 <sup>4</sup>	2 x 10 <sup>5</sup>
PGME	No	Yes
MEK	No	Yes
Butylbenzoate	Yes	Yes
Isopropanol	No	Yes
PGMEA	Yes	Yes
Ethanol	No	Yes
Toluene	Yes	Yes
Butylacetate	Yes	Yes
Ethylacetate	No	Yes

Solvent compatibility of water-free polythiophene dispersions

### Solvent-Based Clevios™ Formulations

Antistatic properties of solvent-borne hard coat and adhesive formulation



< 10<sup>9</sup> Ohm/sq

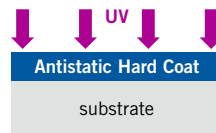
- Electronic conductivity
- High optical transmission

New solvent-based Clevios™ can add antistatic functions to adhesive and hard-coating formulations

## Application Scope of Solvent-Based RD Clevios™

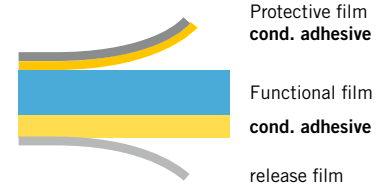
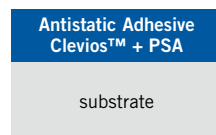
### Antistatic UV-Curable Hard Coatings

Solvent-based RD Clevios™ P SB for display protective films, e.g. for smartphones, automotive display, etc.



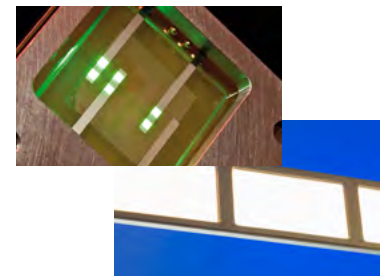
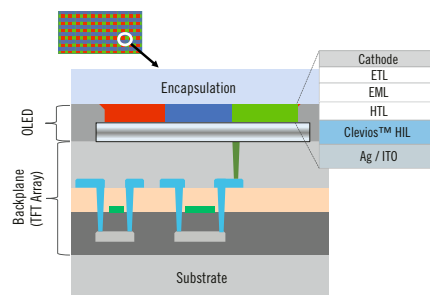
### Transparent Conductive Adhesives (PSA)

High conductivity makes solvent-based RD Clevios™ P SB the ideal material to combine with PSA as fluorine-free alternative to ionic liquids



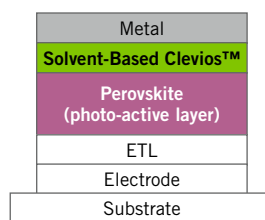
### Printed OLEDs

RD Clevios™ HIL Jet 8 is a solvent-based PEDOT dispersion optimized as OLED hole-injection layer (HIL) material for inkjet



### Perovskite Solar Cells

Solvent-based Clevios™ HTL Solar 3 and 4 are optimized as hole-transport layers and can be directly coated on perovskite layers



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# Clevios™