Innovate with Clevios™
PEDOT Conductive Polymers
The use of intrinsically conductive polymers is rapidly developing. Marketed under the name of Clevios™ this groundbreaking 3,4-polyethylene-dioxythiophene base product range is set to continue its success story.

Clevios™ PEDOT/PSS is a class leader in the field of conductive chemistry. New kinds of flexible displays, high performance electrolytic capacitors, antistatic and conductive protective and shielding layers, OLED, OPV and printed electronics are just a few of the many possible applications for Clevios™.

**Key Characteristics**

**Film**
- Conductivity tunable over wide range
- Transparent and clear
- Excellent mechanical flexibility
- High thermal and chemical stability

**Dispersion**
- Aqueous dispersions
- Safe handling
- Easy to use by coating and printing
- Tailored product range
- Manufactured on industrial scale

**Clevios™ Conductivity / Resistivity Range**

<table>
<thead>
<tr>
<th>Resistance (Ω/□)</th>
<th>Conductivity (S/cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10^10</td>
<td>1.0 x 10^-5</td>
</tr>
<tr>
<td>10^9</td>
<td>1.0 x 10^-4</td>
</tr>
<tr>
<td>10^8</td>
<td>1.0 x 10^-3</td>
</tr>
<tr>
<td>10^7</td>
<td>1.0 x 10^-2</td>
</tr>
<tr>
<td>10^6</td>
<td>1.0 x 10^-1</td>
</tr>
<tr>
<td>10^5</td>
<td>1.0</td>
</tr>
<tr>
<td>10^4</td>
<td>10</td>
</tr>
<tr>
<td>10^3</td>
<td>10^2</td>
</tr>
<tr>
<td>1</td>
<td>10^4</td>
</tr>
</tbody>
</table>

**Application Methods**
- Screen Printing
- Inkjet Printing
- Gravure Printing
- Slot-Die Coating
- Spray Coating
- Dip Coating
- Spin Coating
Areas of Application

**Antistatic coatings of plastic and glass**
Clevios™ provides transparent, antistatic, and dissipative properties on PET and other substrates to avoid static charges that can cause dust attraction, and damage by electro-static discharge (ESD). Uses include packaging trays, protective / release films, instrument housings etc.

**Capacitive Touch Panels**
Transparent touch sensors in touch displays can be made with Clevios™ coated plastic films. Patterning of the sensors is done by the Clevios™ Etch technology. The unique flexible properties of Clevios™ enable the next-generation flexible and foldable touch displays.

**Printed Capacitive Touch Keys, Sliders and Switches**
Transparent sensor electrodes are screen-printed using Clevios™. The unique flexible properties enable 3D-shaped touch sensitive surfaces by thermoforming. Uses include toys, whiteware, automotive etc.

**Smartwindows**
Coatings of highly conductive Clevios™ on PET film or glass act as the transparent electrodes in smartwindows to switch the PDLC (polymer dispersed liquid crystal) layer by applying an electric field.

**Electroluminescence (EL)**
Clevios™ is used for screen printing of transparent electrodes in thick-film electroluminescence. Its flexible properties enable new uses on paper or fabric substrates for smart packagings and wearables.

**OLED Lighting / OLED Displays**
Clevios™ is used in organic light emitting diodes as hole-injection layer (HIL) in OLED displays, and as transparent electrode layer with excellent planarization properties on metal-mesh and -nanowires in OLED lighting.

**Organic Solar Cells / 3rd Gen PV**
Clevios™ Solar grades are used as hole transport layer (HTL) and transparent top electrode. Solvent-based types are under development for perovskite solar cells.

**Capacitors**
Clevios™, used as cathode material, has revolutionized the performance of electrolytic capacitors.

**LCD Shielding**
Clevios™ coatings on display glass can be used in IPS LCD for ESD and EMI shielding.
The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Heraeus. All information is given without warranty or guarantee. It is expressly understood and agreed that the customer assumes and hereby expressly releases Heraeus from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind Heraeus. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent. Properties of the products referred to herein shall as general rule not be classed as information on the properties of the item for sale. In case of order please refer to issue number of the respective product data sheet. All deliveries are based on the latest issue of the product data sheet and the latest version of our General Conditions of Sale and Delivery.