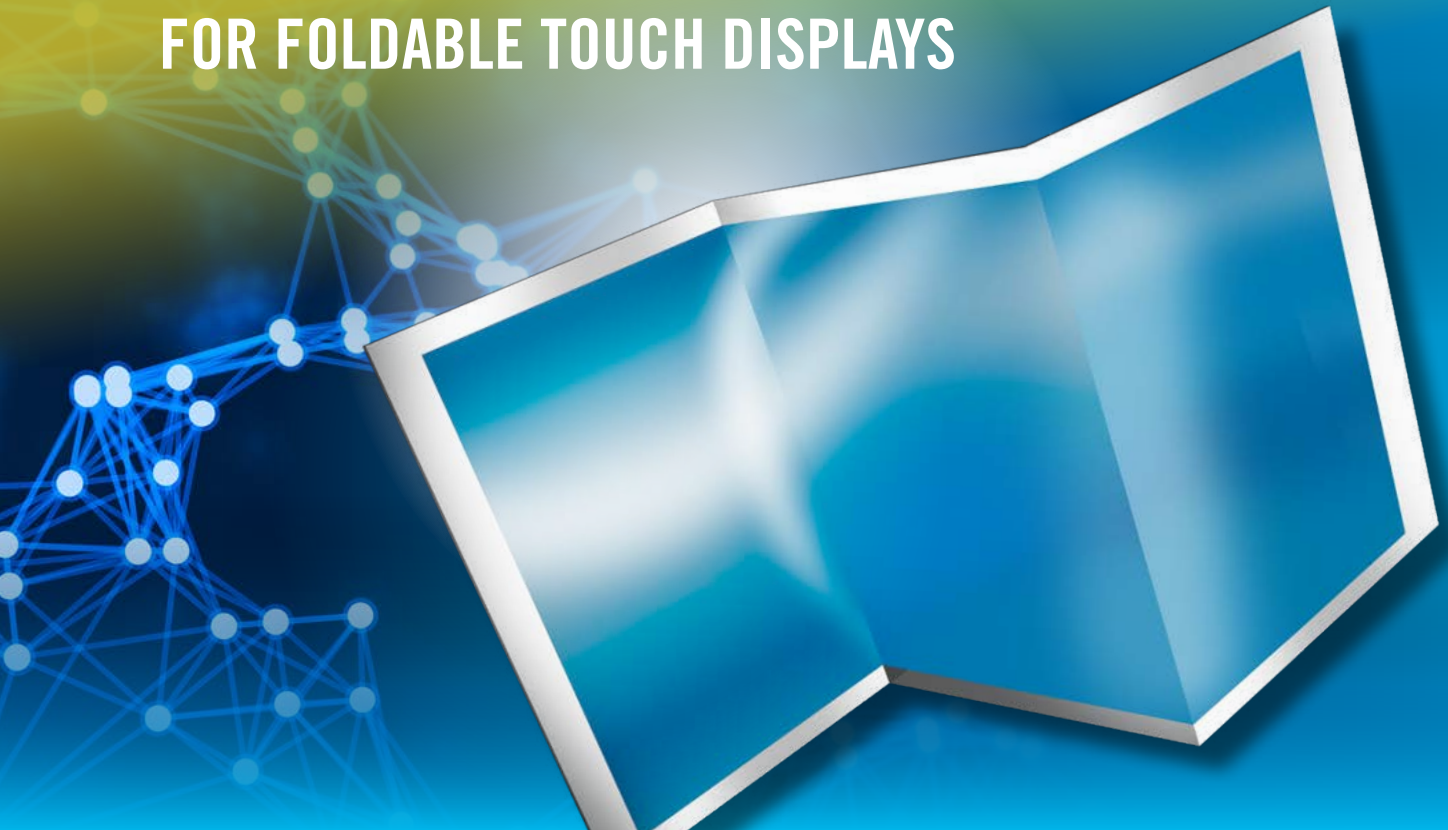


CLEVIOS™ HY E – FOR FOLDABLE TOUCH DISPLAYS



Foldable | Conductive | Durable

Clevios™ HY E – The Next-Generation Material for Foldable Touch Displays

Clevios™ HY E is a unique hybrid material made from conductive polymers (PEDOT) and silver nanowires (AgNW). It combines the strengths of both technologies: PEDOT provides improved flexible properties, invisible patterning, intrinsic ESD protection, and improved sheet resistance isotropy, while silver nanowires realize low sheet resistances and high transmissions of the coated transparent electrode layers.

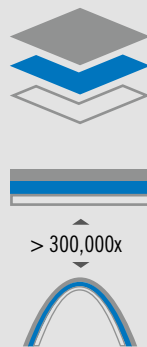
- Over 300,000 times stable bending at 1 mm radius for reliable foldable touch displays
- Invisible wet-patterning technology for superior optical properties of touch sensors
- 30–150 Ohm/sq with excellent SR isotropy
- Wet-coating or printing on plastics, e.g. PET, CPI, PC

CLEVIOS™ HY E – The Next-Generation Material for Foldable Touch Displays

Foldable – Conductive – Durable – Solution Processible

Properties

- Aqueous dispersion, ready to use
- Cost effective wet-coating, e.g. by slot-die coating
- Good adhesion to PET, CPI, PC
- Protective overcoat Clevios™ OC 1
- Low sheet resistance, adjustable from 15–150 Ω/□
- Excellent SR isotropy and built-in ESD protection
- High transmission > 95 %
- Stable SR after > 300 k bendings at R = 1 mm radius
- Laser and wet patternable

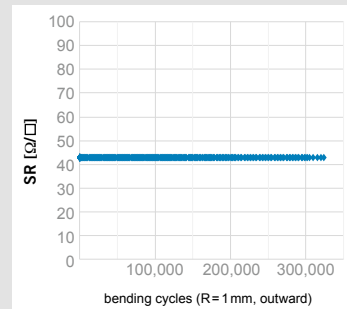


Sample

- Clevios™ OC 1 (≈ 0,7 μm)
- Clevios™ HY E (≈ 0,15 μm)
- PET Substrate (25 μm)

Bending test

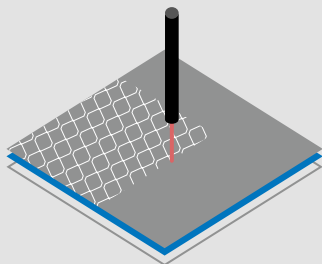
- Bending radius: 1 mm



Patterning of Clevios™ HY E

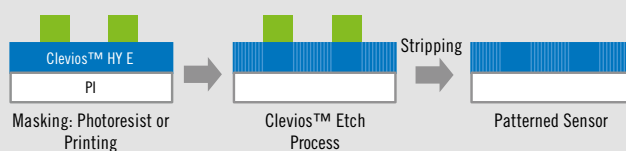
Laser Patterning

- Clevios™ OC 1
- Clevios™ HY E
- PET Substrate



Wet Patterning Process

- Clevios™ technology for nearly invisible patterns (no contrast)
- Chemical deactivation, no physical etching or removal of material
- Simplification of designs with wide gaps possible ("invisible")
- Masking by photoresist or printable mask (screen-, gravure-, flexoprinting)
- High isolation resistances



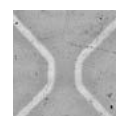
- ✓ Invisible to the Human Eye



Superior Optical Properties



- ✓ Visible by Inspection Tool*



→ Process Control

Applications for Clevios™ HY E include foldable touch displays, OLED and OPV.

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