



Displaying Vision

Heraeus Precious Metals – Materials for Display Applications

Heraeus – Displaying Vision

Displays require economic and novel materials to provide platforms for innovative technologies. Heraeus provides a broad range of materials for “next generation” displays, lighting and touch panels.

Three Heraeus businesses provide solutions to complex product developments in display technologies. Heraeus Thick Film, Conductive Polymers and Daychem can offer products tailor-made to agreed specifications and are backed up with high levels of technical support.

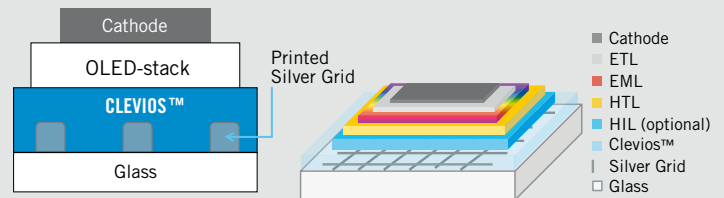
Heraeus Thick Film

With over 40 years of experience in the thick film business, Heraeus offers organometallic and polymer thick film silver pastes for low temperature applications like, touch screens OLED lighting & displays and printed electronics.

Benefits include:

- Low temperature curing but high conductivity
- Ideal for use as conductive bus bar lines and micro conductive grids
- Customizable to individual requirements and backed up with a full applications laboratory

An example of Heraeus Silver Organometallic for use in OLED displays and lighting is given below.



Heraeus Conductive Polymers

Clevios™ materials are intrinsically conductive polymers based on PEDOT. They deliver conductivity for electrode applications, are used as OLED hole-injection layers and also have planarizing properties. Clevios™ provides conductivity to < 100 Ohm/sq, flexibility and a high level of transparency, for example in touch technologies.

Advantages of Clevios™ are:

- Low cost display, potentially flexible
- Replacing current TCO technology with conductive polymers
- Allowing more economic printing technologies to be used

For touch displays highly conductive Clevios™ in combination with Clevios ETCH is used to create conductive patterns, as outlined in the diagram below.



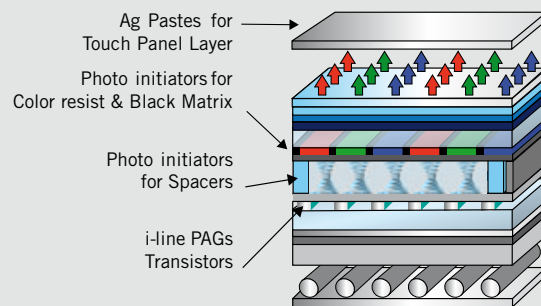
Heraeus Daychem

Daychem has been providing specialty chemicals for semiconductor and display applications for over 30 years. Specializing in developing Photo-Acid Generators (PAG's), Photo Initiators, Monomers, or Cross-linkers.

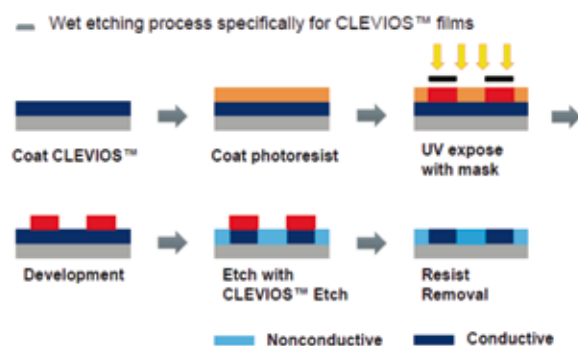
Daychem's additional strengths include:

- Development partner for new chemistries
- Novel synthesis routes and complete multi-step synthesis
- Scale-up processes: from grams to hundreds of kilograms

Daychem offers i-Line PAG's and cross-linkers. Daychem's i-Line PAG's are used in insulation layers to produce today's LCD displays. Daychem's cross-linkers are used for example to make photoresists harder and are at least suitable for acrylate and methacrylate systems.



Clevios™ ETCH – Patterning Positive Tone



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