

who needs an electronic  
materials partner that delivers  
solutions, not simply materials?  
**you do.**

**working for you.**

**SunChemical®**

a member of the DIC group



Color & Comfort



## Sun Chemical Advanced Materials: Integrated solutions for printed circuit boards and printed electronics

Sun Chemical Advanced Materials is a trusted solutions provider for printed circuit boards and a broad range of printed electronics applications. By combining unmatched R&D capabilities and global technical service, our Advanced Materials team is the ideal partner from project conception to production.

### Tailor-Made Solutions to Meet Your Needs.

The challenges to success in the electronics market have never been greater. Now more than ever, the path to continued success is through alliance and collaboration with committed, competent and innovative technology partners. Sun Chemical Advanced Materials delivers solutions for printed circuit boards, Integrated Communications Technology (ICT) devices, photovoltaics and printed electronics so your organization can meet today's challenges and opportunities with our Solutions Tailor-Made approach.

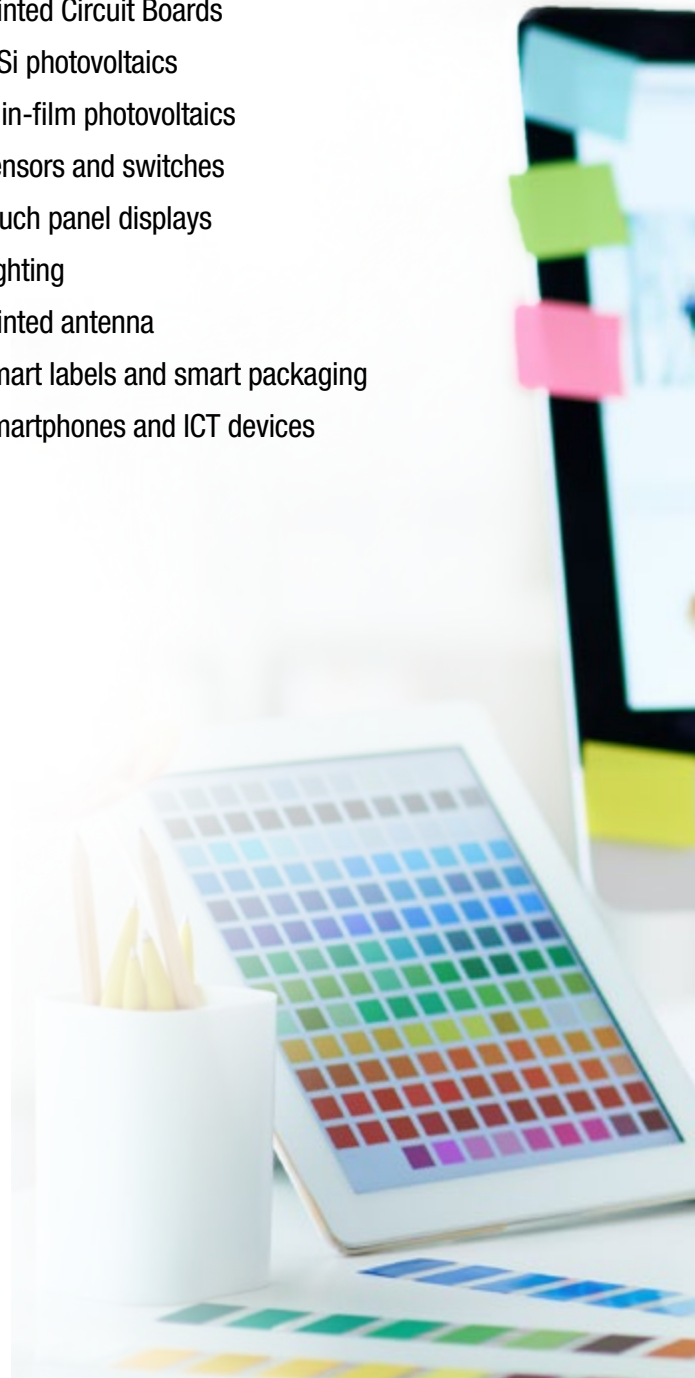
We have long been a global technology leader in printing inks and coatings formulations along with the color pigments, dispersion and specialty materials that are required to meet critical performance parameters.

### *Solutions.* Tailor-Made™

We deliver solutions that are tailor-made to your needs through our broad portfolio of products and technologies.

Our goal is to deliver solutions through close collaboration with like-minded companies seeking to develop new technologies and products. We are leveraging our worldwide network of technological and commercial support to advance applications in:

- Printed Circuit Boards
- c-Si photovoltaics
- Thin-film photovoltaics
- Sensors and switches
- Touch panel displays
- Lighting
- Printed antenna
- Smart labels and smart packaging
- Smartphones and ICT devices



**Who can benefit from a broad-range of solutions for printed circuit boards and printed electronics?**

**You can.**





## Broad Range of Reliable Materials for all Stages of PCB Fabrication

Sun Chemical Advanced Materials' range of technologies ensure the production of printed circuit boards (PCBs) with consistent, repeatable quality while exceeding industry standards for performance and reliability. Along with world-renowned soldermask, Sun Chemical delivers trusted solutions for all stages of PCB fabrication. Additionally, Sun Chemical's products for PCBs are environmentally-friendly and approved by many major global OEMs.

- Imagecure Soldermask
- Legend/Notation Inks
- EPR5000 Peelable Mask
- Etch & Plating Resists

## Imagecure Soldermask (LPISM)

Soldermask for rigid printed circuits boards (PCBs) can be applied using screen print, curtain coat or spray methods and provide a wide process window.

- Available in a range of colors and halogen-free versions
- Global approval by OEMs in automotive, medical, aerospace, telecom and other industries
- 30-50 $\mu$  solder dam capabilities
- 0.2mm hole clearance
- Wide process window
- Versions available for use with direct imaging (DI) equipment

## Legend/Notation Inks

A vast portfolio of legend inks which have excellent adhesion properties and are highly resistant to scuffing, heat and solvents when fully cured.

- Available in various colors
- Screen defined thermal & UV cure versions with exceptional on-screen stability
- Photo-image versions for screen or spray applications
- Compliant with RoHS and WEEE directives
- Excellent adhesion to all clean copper surfaces and various soldermasks and substrates
- Resistant to commonly used soldering processes and solvents
- Optimized for a wide range of process conditions

## EPR5000 Series Peelable Mask

A cost-effective and environmentally-friendly temporary peelable mask for high-temperature soldering and chemical plating.

- Improved peeling and removal
- Excellent adhesion
- Suitable for lead-free soldering processes
- Can be used as a temporary plating resist
- Green, red and blue colors available
- Stable viscosity at up to 40°C storage temperature
- 4.0mm hole tenting capabilities
- 100% solids

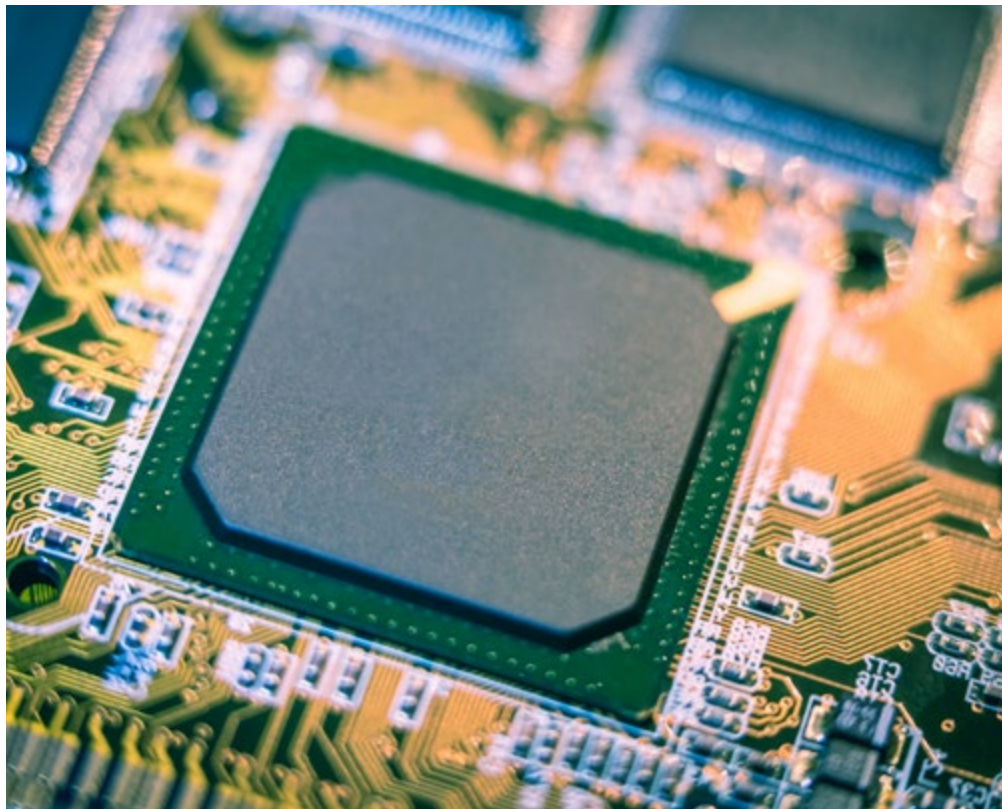
Who can deliver the broadest portfolio and best support for printed circuit boards?

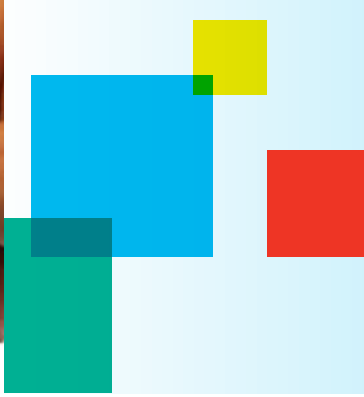
**You can.**

### Etch and Plating Resists

A range of etch and plating resists for printed circuit boards that can be used with either acid or alkaline etch chemistry.

- Resistant to most plating and etching chemistries
- Available in thermal and UV curable versions
- Liquid photoimageable (LPI) types can be applied by screen, roller coat, spray or curtain coating
- Strippable in alkaline or solvent
- Suitable for glass and metal etch processing





## Trusted Solutions Provider

Sun Chemical Advanced Materials' SunTronic portfolio contains four product families of trusted solutions for printed electronics applications, including displays, touch panels, switches and sensors, printed antenna, solid state lighting, thin film photovoltaics and high efficiency c-Si photovoltaic designs. Together, the SunTronic ECLIPSE, SOLYSYS, CELLMET and NANOSILVER product families are a full stack of solutions for printed electronics which can be tailor-made for any application.

- SunTronic ECLIPSE Conductive Inks, Resists, Insulators and Dielectrics
- SunTronic SOLSYS Insulators and Dielectrics
- SunTronic CELLMET Metallization Pastes, Resists, Insulators and Dielectrics
- SunTronic NANOSILVER Inks and Pastes

## SunTronic ECLIPSE Conductive Inks

Silver- and graphite- based inks are available in screen, flexographic and inkjet printable versions.

- Range of conductivities available
- Compatible with a variety of substrates
- Excellent printability and print resolution
- Suitable for RFID, smart packaging, sensors, touch panels and other printed electronics applications

## SunTronic ECLIPSE Resists

Screen and inkjet printable formulations in both UV and thermal curing versions.

- Solvent- and alkali- strippable formulations
- Roll coating versions available

## SunTronic ECLIPSE Insulators and Dielectrics

Screen and inkjet printable formulations.

- Good adhesion to commonly employed substrates
- Excellent electrical properties
- Compatible with SunTronic ECLIPSE conductive inks

## SunTronic SOLSYS Insulators and Dielectrics

Insulators and dielectrics available in thermal and UV curing formulations for screen and inkjet printing.

- Good adhesion to TCO and other surfaces
- Suitable for overprinting of silver pastes
- Excellent printability and print resolution
- Compatible with SunTronic SOLSYS conductive inks



Meeting today's  
opportunities with a  
Solutions Tailor-Made  
approach.

Who has conductive inks, resists and insulators for printed electronics?

**You do.**

### SunTronic CELLMET Resists

- Screen printable
- UV & thermal curing formulations
- Resistant to HF and other acids

### SunTronic CELLMET Insulators and Dielectrics

- Available in solvent and UV-curable formulations
- Good adhesion and printability

### SunTronic NANOSILVER Ink and Pastes

- Inkjet and aerosol jet NANOSILVER ink with superior conductivity and high print resolution
- Featuring outstanding jetting performance monodispersion with low-temperature sintering properties
- Excellent adhesion to a variety of substrates
- Compatible with most industrial and commercial print heads

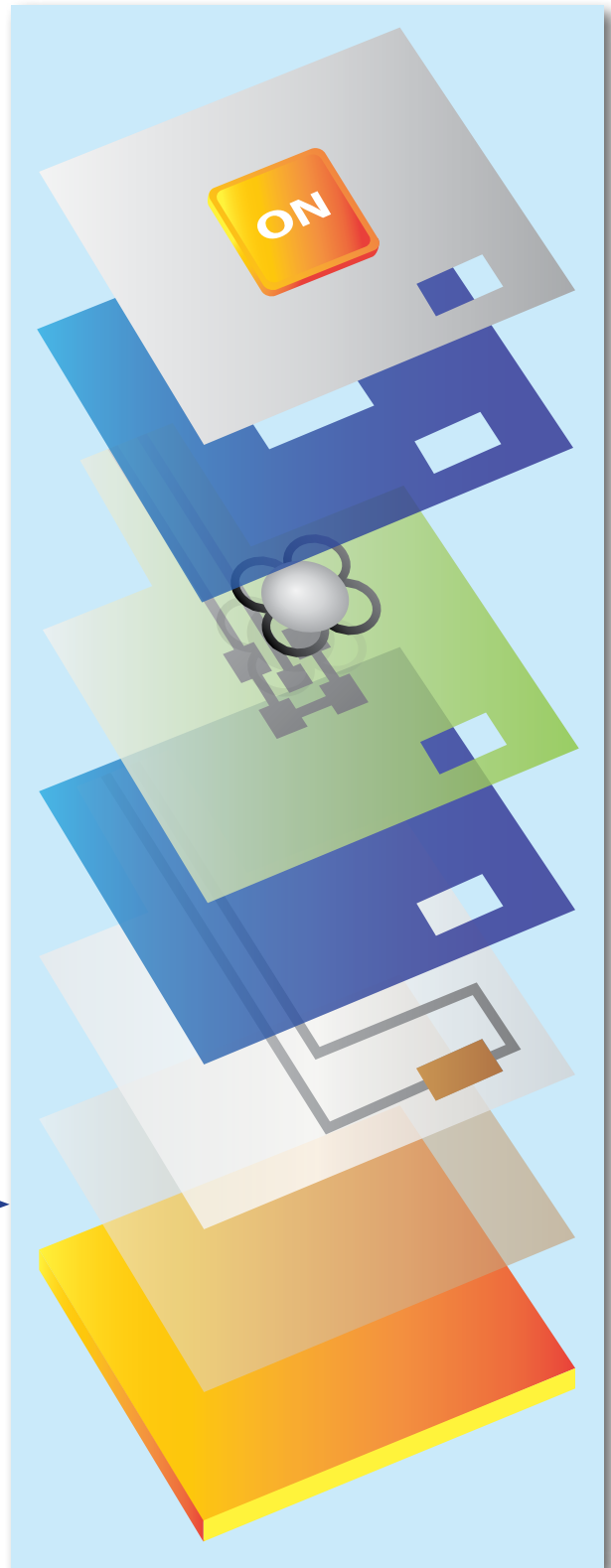




## Sensors and Switches

SunTronic ECLIPSE products for sensors and switches are designed to offer superior process and performance by incorporating formulations for various printing options including screen, offset and inkjet. The electrical performance of our conductors and dielectrics are some of the best in class. The ECLIPSE family of inks and materials offers a broad portfolio of solutions for various switch and sensor designs, including membrane, touch and backlit switches as well as sensors for industrial and medical applications.

- SunTronic ECLIPSE Series silver and graphite printable conductive inks
- SunTronic ECLIPSE Series dielectrics
- Sun Chemical graphic inks
- DIC coated tapes and adhesives
- Suntronic Nanosilver Inks and Pastes





## Displays and Touch Panels

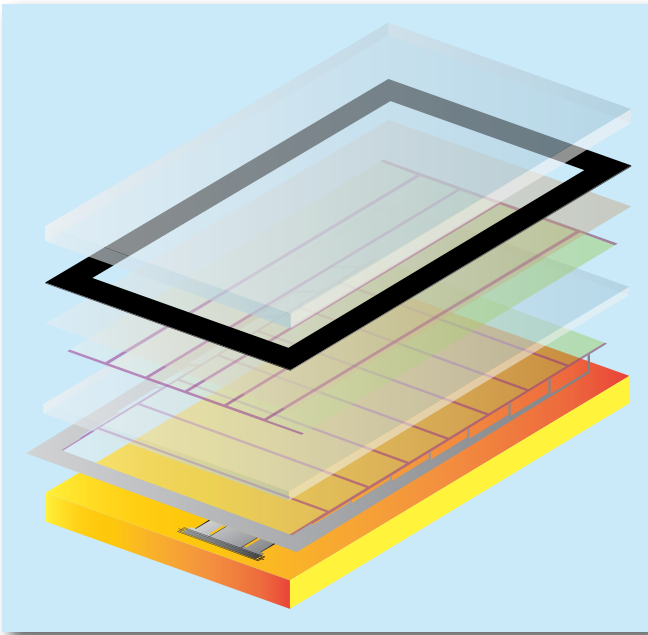
SunTronic ECLIPSE conductors and dielectrics combine to support a wide range of manufacturing processes. Our tailor-made products offer a range of performance options from the very high conductivities for our conductive inks to the highly insulating properties for our dielectrics. SunTronic ECLIPSE offers top to bottom solutions for touch screens including a scratch- and fingerprint-resistant glass coating to electrically functional conductors and dielectrics as well as assembly materials and graphic inks.

- SunTronic ECLIPSE Series silver and graphite printable conductive inks
- SunTronic ECLIPSE Series dielectrics
- Sun Chemical graphic inks
- DIC coated tapes and adhesives
- DIC fluorochemical-based coatings
- Optical boundary coatings (black, white)
- Suntronic Nanosilver Inks and Pastes

## Printed Antenna

SunTronic ECLIPSE Series for printed antenna offers a wide range of supporting products for antenna and RFID. The ECLIPSE series for printed antenna can conform to a wide range of processes including plating resists for subtractive process to fully additive processes including high speed roll to roll and inkjet printing. The ECLIPSE products also support advanced antenna designs which incorporate security and tamper proofing utilizing our release technology. ECLIPSE can also address the demand for advanced mobile phone antenna designs involving digital and 3D printing.

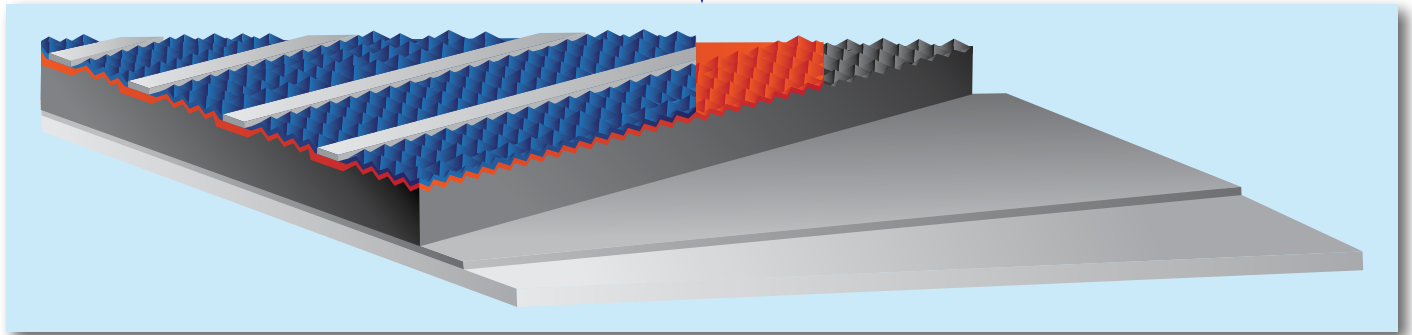
- SunTronic ECLIPSE Series silver and graphite printable conductive inks
- SunTronic ECLIPSE Series dielectrics
- Sun Chemical graphic inks and release coatings
- DIC coated tapes and adhesives
- Suntronic Nanosilver Inks and Pastes





## Selective Emitter

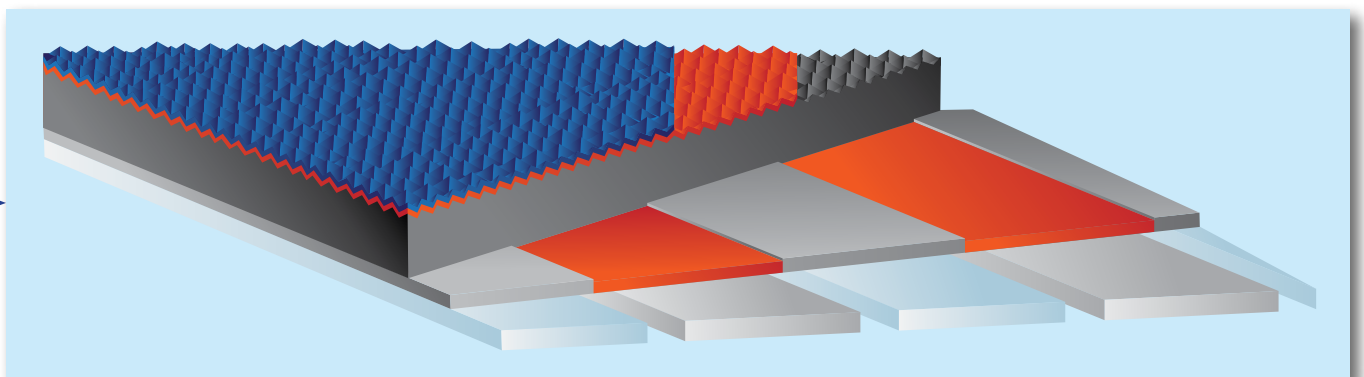
CELLMET for selective emitter processes are currently in use by top tier cell manufacturers around the world. Our products include masking inks which can be applied via inkjet or through conventional screen.



## Interdigitated Back Contact

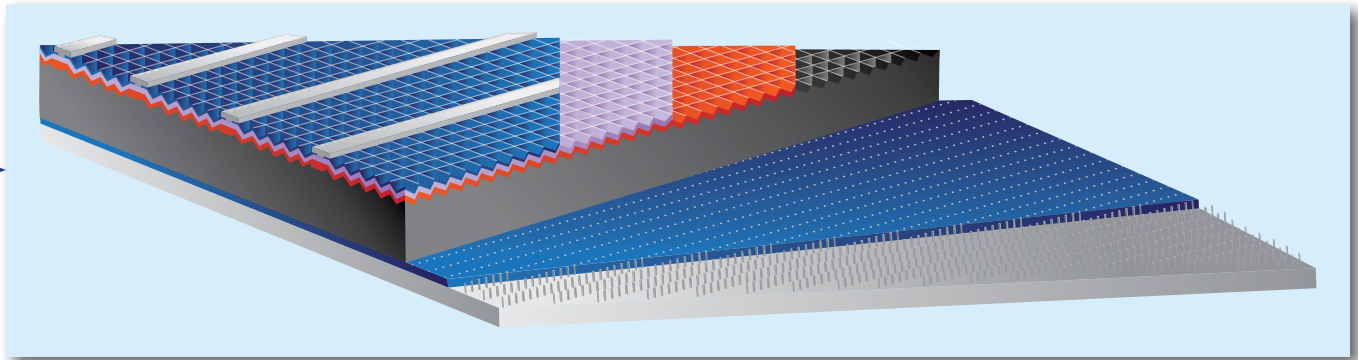
The CELLMET series of materials for IBC (Interdigitated Back Contact) are widely used and have a proven 10 years of field performance. The CELLMET products offer a full range of resists and coatings to support the entire IBC process, including screen printing as well as roll coating and high performing polyimide dielectrics.

- CELLMET resists: screen print & roll coats
- Isolation layer (polyimide)
- Back sheet metallization



## PERC/PERL

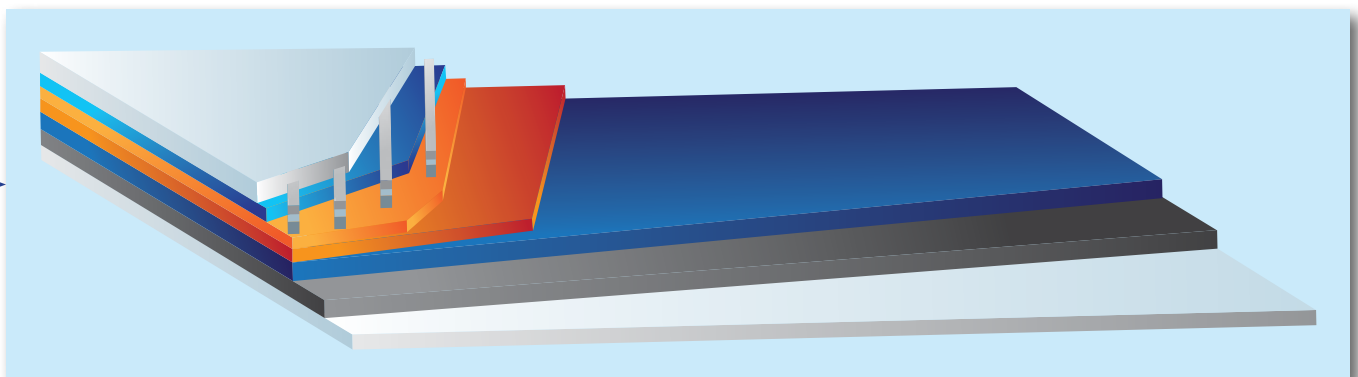
The CELLMET AI for PERC is formulated to enhance the performance of emerging c-Si back side design option.



## Thin-film Photovoltaics

SunTronic SOLSYS products are specifically designed to support the wide range of thin-film photovoltaic processes and designs, including full or partially subtractive and additive processes. Our printable conductors available in silver and graphite are highly conductive and very stable. Our resists and dielectrics are formulated to protect the device during manufacturing as well as remain a permanent part of the design.

- SunTronic SOLSYS Series silver and graphite printable conductive inks
- SunTronic SOLSYS series dielectrics
- DIC coated tape and adhesives
- Inkjet printable dielectrics for isolation





**A partner who transforms with you.**

Today's environment requires more than change. It demands transformation — and a partner who's willing to transform with you. Sun Chemical, a member of the DIC group, is a leading producer of printing inks, coatings and supplies, pigments, polymers, liquid compounds, solid compounds, and application materials. Together with DIC, Sun Chemical has over 20,000 employees located at 176 subsidiaries across 63 countries working every day to meet the needs of customers by improving performance on the essentials of business, such as reliable, on-time delivery and consistent product quality. Sun Chemical tailors solutions to unique customer needs and brings new ideas and the latest technology to market. As you move forward into a world of stiffer competition, faster turnarounds, more complex demands and sustainable products, count on Sun Chemical to be your partner.

**working for you.**

[www.sunchemical.com](http://www.sunchemical.com)

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