

PriElex[®]
Functional Printed Electronic Materials



Functional Printed Electronics

Unlocking endless possibilities

Polymer Thick Film (PTF) inks are the key to unlocking endless possibilities in printed electronics. PTF inks, also known as electronic inks or low-temperature inks, offer a versatile solution for engineers and product developers seeking innovative electronic designs. This adaptability allows for the creation of flexible and lightweight components that are perfect for innovative applications in sectors such as medical devices, and smart packaging.

With an expanded portfolio of PriElex® Functional Printed Electronics Materials, we offer a range of high-quality PTF inks customized for various applications. These inks are formulated to provide excellent performance in terms of conductivity, adhesion, and durability, which are crucial for the reliability and longevity of electronic components.

Understanding your needs... Exceeding your expectations

Broad Product Portfolio Offerings:

With our expanded portfolio following the recent acquisition, we now offer a diverse range of polymer thick film (PTF) inks. Whether you need highly conductive inks, resistive inks, dielectric and insulation inks, or specialty inks, we have the right solution to meet your specific requirements. Our extensive product lineup provides the flexibility and options to support a wide range of applications in the field of printed electronics.

Excellent Shelf Life and Room Temperature Storage:

We understand the importance of convenience and efficiency in your operations. That's why our majority of PTF inks boast a 6-month shelf life and can be stored at room temperature. This eliminates the need for refrigeration or specialized storage conditions, offering you convenience, ease of use, and longer-lasting product quality.

Exceptional Customer Service:

At Heraeus Electronics, we pride ourselves on providing exceptional customer service. Our dedicated team is ready to assist you every step of the way, from product selection and technical support to troubleshooting. We strive to deliver services tailored to your needs, ensuring that your experience with our PTF inks is as seamless and successful as possible.

These key benefits showcase the advantages of your polymer thick film ink technology, from the expanded product portfolio to the convenience of storage and the commitment to excellent customer service. If you have any further requests or need additional adjustments, please feel free to let us know!

Silver Conductive Ink

Heraeus silver conductive inks encompass a diverse range of highly conductive formulations, including anisotropic ink and water-based formulations. These advanced materials enable the precise and efficient patterning of conductive features for printed electronic applications. Whether it's for traditional printed circuitry, RFID antennas, or flexible sensors, our silver conductive inks offer exceptional conductivity and compatibility with various printing processes, empowering engineers to create innovative and reliable electronic designs.

Product	Description	Typical Processing	Deposition Method	Applications
AG-500A	Highly conductive silver ink	1.5 - 4 minutes at 130°C	Screen print, spraying or dipping (after thinning)	Circuit and Electromechanical assemblies, membrane switch, touch screens, printed heaters
AG-510	High conductivity silver ink for hi-rel applications			For use in highly reliable applications such as military, medical, or substrates with difficult adhesion
AG-800	High electrical conductivity silver ink	3 - 5 minutes at 130°C	Spraying, dipping	Flex circuits, membrane switches, additive circuits, EMI/RFI applications, thermal targets
AG-1074	Conductive silver ink	3 - 5 minutes at 80°C	Pad printable	Three dimensional circuits
LTC3602	Low Ag content silver ink	10 minutes at 110°C 5 minutes at 120°C	Screen print	Low cost, general use printed electronics applications, bio-medical sensors
LTC3510	Reflow-solderable silver ink	30 minutes at 175 at 225°C		Reflowable with many solder alloys including SAC305 and SnBi on a variety of substrates
Z-904	UV Curable anisotropic ink	UV Curing		Conductive in the z-axis thickness only, for print or over coat
WB-1078	Water-based conductive silver ink	1 - 1.5 minutes at 145°C	Gravure, rotary screen, spraying or coating	RFID and cell phone antennas, medical EEG & EKG sensors, and EMI/RFI shielding

Silver / Silver Chloride Ink

Our Ag/AgCl inks are engineered to offer unparalleled stability and reliability, essential for applications requiring high-performance electrodes and sensors. These materials are ideal for demanding applications in biosensing, electrochemical measurements, and medical diagnostics. With exceptional adhesion and stability, our Ag/AgCl formulations provide the foundation for precise and sensitive electrochemical measurements and sensor technology.

Product	Description	Typical Processing	Deposition Method	Applications
AGCL-675	Silver / Silver Chloride ink (72.5/27.5)	Drying < 4 minutes at 130°C	Screen print, dip or thin for gravure print	Disposable EKG and EEG electrodes, defibrillator pads, medical sensors
AGCL-1134	Silver / Silver Chloride ink (50/50)		Screen print, dip or thin for gravure print	
LTC3701	Silver / Silver Chloride ink (65/35)	Drying < 4 minutes at 120°C	Screen print	Biomedical sensors

Carbon Resistive Ink

Explore our range of carbon resistive inks, formulated to deliver precise and consistent resistance values required for various printed electronic components and sensor applications. Designed for flexibility and durability, our carbon resistive inks enable the creation of reliable and robust resistive features, essential for applications such as membrane switches, force sensors, and PTC heating systems. With customizable resistance levels and excellent environmental stability, our carbon resistive inks offer engineers a versatile solution for diverse printed electronic designs.

Product	Description	Typical Processing	Deposition Method	Applications
C-250J	Low resistance carbon ink 5 Ohm/sq/mil	3 - 10 minutes at 120°C	Screen print	Disposable EKG and EEG electrodes, defibrillator pads, Medical sensors
LTR46xx	10 - 1k Ohm/sq/mil carbon resistor inks	10 minutes at 120°C 120 - 200°C curing window	Screen print	Fixed resistance inks for flexible circuits and sensors
PTC4900 Series	Self-regulating PTC inks	10 minutes at 140°C		Flexible PTC heaters for automotive, consumer, and industrial applications between 60 - 80°C

Dielectric & Insulation Inks

Our dielectric and insulation inks cover a spectrum of UV-cured and thermal-cured formulations, providing superior electrical insulation and reliability for printed electronic devices. Engineered to withstand electrical stress and environmental factors, these materials form a critical component in the production of capacitive touch sensors, flexible displays, and energy storage devices, ensuring optimal performance and longevity of electronic designs.

Product	Description	Typical Processing	Deposition Method	Applications
UV-2530	UV Curable Matte Dielectric ink - clear, blue, green	UV curing	Screen print, dip, RtR coating, die application	Flex circuits - printed insulation layers, dielectric and crossover layer for membrane switch
UV-2531	UV Curable Glossy Dielectric ink - clear, blue, green			
UV-2533	UV Curable Matte Dielectric ink - dark blue			
UVD5271	UV Curable Glossy Dielectric ink - blue	10 minutes at 120°C	Screen print	Rigid substrates - covercoat, solder mask, dielectric
LTD5610	Thermal cure protective overcoat		Thermal cure protective overcoat with good adhesion to most treated plastic substrates	
PD5100 Nx	Single component silicone-based protective overcoat		60 minutes at 150 - 200°C	Circuit protection including good thermal stability. Available in white, green, black, light blue, dark blue
PD5200	Single component epoxy-based protective overcoat		30 - 60 minutes at 150°C	Black covercoat, chemically inert film will not react with components - for circuit protection and identification

Specialty Applications

Our specialty inks encompass a diverse lineup of materials, catering to specific application needs in healthcare, aerospace, automotive, advanced electronic systems, and encapsulation solutions. This category includes a range of specialized materials, such as radio-opaque inks for medical devices, barium titanate dielectric inks for capacitors, phosphor binder inks for luminescent features, flexible end terminations for high reliability passive components, as well as 2-part silver-filled epoxies and potting compounds for robust encapsulation and protection of electronic components. These materials offer tailored solutions for cutting-edge applications, driving innovation in diverse industries and ensuring the reliability and performance of advanced electronic systems.

Product	Description	Typical Processing	Deposition Method	Applications
EP-600	2 part silver-filled conductive epoxy	75 - 140°C	Dot, screen print & manual dispense	For component attachment, termination & surface bonding for membrane switches & other assemblies
EP-799	Black potting compound	Room temperature for 2 to 8 hours, followed by baking at elevated temperatures up to 150°C to complete curing	Dot dispense & syringe application	Protect against moisture, contamination, mechanical or thermal shock
BT-101	Barium titanate dielectric	1.5 - 6 minutes at 130°C	Screen print	Printed EL panel capacitance layer between phosphor & back electrodes
RO-593	Radio opaque ink - white, pink, green	10 - 15 minutes at 140°C	Screen or high speed roll print, coat, dip & manual processes	Visible with CT imaging
RO-948	Radio opaque ink - dark grey	1.5 - 5 minutes at 130°C		Visible with X-ray imaging
PH-745	Phosphor Binder & Thermal Cure Dielectric	3 - 8 minutes at 140°C	Screen print	Thermal cure dielectric for membrane switch insulation & crossover layers; and binder for phosphor powder used in EL panel layer.
ET2010	Flexible, conductive end termination for passive components	60 minutes at 200°C	Passive component end termination dipping process	High reliability pre- or post- termination for surface mount components, e.g. MLCC, MLV, chip resistors, chip fuses

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HERAEUS GROUP THE GLOBAL TECHNOLOGY COMPANY

The Heraeus Group is a broadly diversified and globally leading family-owned technology company, headquartered in Hanau, Germany. The company's roots go back to a family pharmacy started in 1660. Today, Heraeus bundles diverse activities in the Business Platforms Metals and Recycling, Healthcare, Semiconductor and Electronics as well as Industrials. Customers benefit from innovative technologies and solutions based on broad materials expertise and technological leadership.

In the 2022 financial year, the group generated revenues of €29.1 billion (US\$30.6 billion*) with approximately 17,200 employees in 40 countries. Heraeus is one of the top 10 family-

owned companies in Germany and holds a leading position in its global markets.

(* calculated with 2022 average exchange rate, 1€ = 1.0530 US\$)

About Heraeus Electronics

Heraeus Electronics is a leading manufacturer of materials for the assembly and packaging of devices in the electronics industry. The company develops material solutions for the automotive, power electronics and advanced semiconductor packaging market and offers its customers a broad product portfolio - from materials and material systems to services.

The data given here is valid. We reserve the right to make technical alterations.

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