



XIKL®

High-Performance Materials

Tailor-made electronic materials

Experts in developing customized nanomaterials

By combining expertise in material engineering and additive technologies, we transform unique concepts into reality by crafting tailored electronics materials.



Contract manufacturing based on in-depth knowledge and experience

Materials expertise



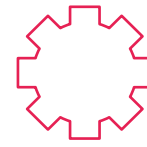
- Synthesis of customized nanomaterials
- Formulation of tailor-made inks and pastes (manufactured nanomaterials, solvents and additives)
- In-depth product characterization
- Scaling up and optimizing production

Printing know-how



- Acquisition of tools, development and optimization of waveforms
- Improving printing resolution and sequences on multiple substrates

Processing proficiency



- Screening of multiple sintering technologies
- Optimization of sintering parameters on different substrates
- Characterization of sintered & final products

Elevate your innovations with XTPL



- 01** Reliable contract research partner
- 02** Highly concentrated materials for maximum performance
- 03** High repeatability in the printing process

Enhance your products with our high-performing nanomaterials, eliminating the need to navigate their complex production processes. We manage the intricate creation, allowing you to focus solely on your product development and improvement.

Contact our team

✉ sales@xtpl.com

For any product-related inquiries, contact our team members, who are readily available to provide you with professional and comprehensive assistance.

XTPL S.A.
Stabłowicka 147
54-066 Wrocław, Poland

xtpl.com



High-Performance Materials

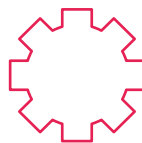


XTPL® Nanoinks Benefits

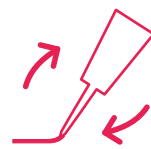
Explore XTPL's metallic nanoinks benefits – enabling swift development cycles and ensuring optimal resolution and conductivity. Our innovation propels your project forward in any field.



Up to 50% silver
bulk conductivity



High content of
conductive component



Superior
stability

High-Performance Materials



Ag Nanoink IJ36 Conductive Silver Ink

- Stable printing for >1 month without clogging
- Exceeds 40% bulk Ag conductivity
- High aspect ratios with single-pass printing

Ag Nanoink CL34 Conductive Silver Ink

- Up to 50% bulk silver conductivity
- Ideal for printing on foils for flexible electronics
- Suitable for low aspect ratio profile applications

Ag Nanoink CL60 Conductive Silver Ink

- High-viscosity for fine, high-aspect printing
- Facilitates easy dispensing and LIFT blading
- Ensures smooth deposits and donor surfaces

Ag Nanopaste CL85 Conductive Silver Paste

- High-viscosity enables ultra-fine, high-aspect ratio printing
- Exceptional non-clogging properties allows >1 month, 2.5 μm nozzle lifetime
- Dispenses through 1 μm nozzles for uniform thin lines
- Suitable for printing on vertical surfaces

Typical properties

Properties	Ag Nanoink IJ36	Ag Nanoink CL34	Ag Nanoink CL60	Ag Nanoink CL85
Silver content (wt. %)	34 ± 2	30 ± 2	54 - 63	82 ± 2
Average nanoparticles size [nm] (TEM)	35 - 50	35 - 50	35 - 50	35 - 50
Shape of nanoparticles	Spherical	Spherical	Spherical	Spherical
Electrical resistivity [$\mu\Omega \cdot \text{cm}$]*	3.95	3.25	5.11	4.20
Viscosity (25°C, shear rate = 0.2 s ⁻¹) [cP]	26 - 30	200 - 400	30 000 - 50 000	> 1 000 000
Solvent(s)	Glycol ether	Glycol(s)	Glycol(s)	Glycol(s)
Compatible printing method	• Inkjet printing	• Aerosol printing (pneumatic atomizers) • LIFT • XTPL® Ultra-Precise Dispensing	• LIFT • XTPL® Ultra-Precise Dispensing	• LIFT • XTPL® Ultra-Precise Dispensing

*For recommended sintering conditions

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