

### TECHNICAL DATA SHEET

## Prexonics<sup>®</sup> SILVER INK D330

#### Product description

Particle-free silver ink for conductive coating or conductive trace applications.

#### Key benefits

Excellent processability. Pure liquid and particle-free material for slot die, spin coating or inkjet applications.

As part of the Prexonics<sup>®</sup> System Solution, the ink is optimized for best processing in the Prexonics<sup>®</sup> Equipment.

#### Main ingredients

Item	Before sintering (liquid)	After sintering (solid)
Silver	15 ± 5 wt.%	Pure silver
Vehicle (solvent base)	85 ± 5 wt.%	-



#### Typical properties of the ink material

Item	Specification			Condition	Method
	LSL	Target	USL		
Appearance	Clear and transparent liquid			at 23 ± 3°C	Visual
Viscosity (mPa.s)	9.0	10.0	11.0	at 35°C, 30 rpm	Brookfield DV3T, reading @ 2 min
Surface tension (mN/m)	28.5	29.5	30.5	at 23 ± 3°C	Bubble tensiometer, reading @ 15 s
Density (g/cm <sup>3</sup> )	1.00	1.05	1.10	at 23 ± 3°C	Pycnometer

#### Physical properties of the sintered coating material

Item	Representative value	Condition	Method
Appearance	Silver color	at 23 ± 3°C	Visual
Weight loss	85 ± 5 wt.%	RT to 250°C, 5 K/min	Thermogravimetry
Volume resistivity (Ω.cm)	8.36 x 10 <sup>-6</sup>	750 nm coating at 25°C	4-point probe
Thermal conductivity (W/m.K)	108 ± 11	2300 nm coating at 25°C	TDTR
Thermal expansion (ppm/K)	19.7	-	Literature value for bulk Ag

Substrate types: FR4, EMC, copper, etc.

### Thermal sintering conditions

Recommended thickness of wet layer: 15 - 25  $\mu\text{m}$   
Recommended oven conditions: 180 - 280°C in air  
Recommended sintering time: 5 - 60 min at peak temperature

The electrical conductivity of the coating increases with increasing sintering temperatures and times.  
No cleaning step is required after sintering

### Shelf life, work life and storage

Storage: Keep originally packed at room temperature ( $23 \pm 3^\circ\text{C}$ )  
Shelf life: Min. 3 months from manufacturing date  
(originally packed, at room temperature ( $23 \pm 3^\circ\text{C}$ ))  
Work life: 21 days in closed ink supply system at temperature  $\leq 40^\circ\text{C}$

Further handling and ink cleaning guidelines are available upon request.

### Safety and Health

Wear protective gloves and goggles. Refer to the material safety datasheet for more details on safety guidelines.



For more information,  
scan the QR code or contact  
[printed-electronics@heraeus.com](mailto:printed-electronics@heraeus.com)  
[www.heraeus-printed-electronics.com](http://www.heraeus-printed-electronics.com)

**Heraeus Printed Electronics GmbH**

Heraeusstraße 12-14  
63450 Hanau, Germany

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