

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Dielectrics

Product Name: IP 2109



Lead Free and Acid-Resistant Overglaze

Description

IP 2109 is a lead free, screen printable, pseudoplastic overglaze paste for different purposes, especially for protecting thick film resistors or conductors. Because of the high firing temperature it fires to a transparent green colour and very dense glaze layer which is highly passivated to withstand abrasion and aggressive media occurring in plating processes.

Key Benefits

- Extremely resistant vs plating solutions eg. Ni baths with pH values of 4 – 5 and H₂SO₄ baths with pH values <1. It is also resistant to alkaline solutions with pH value of ≤ 9
- Excellent compatibility with different HERAEUS resistors and conductors on alumina and dielectrics
- Free of lead, cadmium, nickel and phthalate
- REACH³ and ROHS⁴ compliant

Processing

- 1) Spatulate well prior to processing.

When stored in a refrigerator allow paste to come to room temperature prior to opening, to avoid condensation.
- 2) Print through 200 – 325 mesh stainless steel screen.
- 3) Let the print level at room temperature for 10 minutes.
- 4) Dry at 150 °C for 10 minutes.
- 5) Fire at 850 °C (peak) for 10 – 12 minutes, and with a total firing cycle time of 30 – 60 minutes.

Thinner

HVS 507

Typical Properties (Paste)

Form	Pseudoplastic paste
Viscosity	20 – 40 Pas (23 °C, D = 33/s)
Solid Content	70.0 % ± 1.0 %
Shelf Life	6 months from date of shipment with correct storage (in a dry, cool (5 – 25 °C) and dark place with container tightly shut).

Typical Properties (Fired)¹

Breakdown Voltage ²	> 1500 V (AC)
Colour	Green, transparent

Compatibility

Dielectrics	IP 9117 Series IP 9227
Conductors	Ag C 8729H C 1075S (LPA 409-021) AgPt C 4728H C 1076SD (LPA 609-022) Au C 5729
Resistor	R 2100 Series

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Legend:

1) Typical properties based on laboratory test methods. For optimum results all materials should be fired in a profiled furnace supplied with dried, hydrocarbon and other contaminant free air (PP-1).

2) Measured after printing with a 200 µm steel screen; thickness of screen and emulsion combined was c. 60 µm, and the resultant printed track was 500 µm wide.

3) REACH compliant according to the latest ** Annex XIV to Regulation (EC) of the European Parliament and of the council on the Registration, Evaluation, Authorisation and Restriction of Chemicals ("REACH") by European Chemicals Agency and its subsequent amendments; the material does not contain any substance listed in Annex XIV.

4) RoHS compliant according to the latest ** Directives (European Union) of Restriction of Hazardous Substances ("RoHS") and its subsequent amendments (including the exceptions related to Pb)

* See the data sheet issue date (DD/MM/YY) as reference of validity of latest edition which is available on request

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