

Dielectrics

SD 1000

Dielectric Paste for Chromium-Steel (DPIS*)

* Development Product Information Sheet

Description:

- SD 1000 is a 850°C firing glaze for insulating Cr-steel. It displays the following advantages :
- It fires to an extremely dense, hermetic film, allowing excellent electrical performance at fired thickness of $\geq 70 \mu\text{m}$.
- Excellent adhesion of heater- and termination-pastes.
- Cofiring of heater- and termination-pastes possible.
- A continuous operation at up to 550°C is possible.
- May be applied to the following commercial steel types:

<u>German Strd No</u>	<u>DIN-Type</u>	<u>UK / USA</u>
1.4016	X 6 Cr 17	430
- No steel pre-treatment necessary. Simply remove the protective film, inspect surface for remaining adhesive, and commence printing.
- Excellent adhesion of heater and termination pastes.

Processing:

- Spatulate well prior to processing. When stored in a fridge the paste should have acquired room temperature before being opened, to avoid condensation.
- Print through a 165 – 325 mesh stainless steel screen. A print-dry-fire sequence is advised for each layer.
- Let the print settle at room temperature for 3 – 10 minutes.
- Dry at 150°C for 10 minutes.
- Fire at 850 – 860°C (peak) for 8 – 12 minutes and with a total firing cycle time of c. 60 minutes.

Thinner : HVS 100

Properties (Paste):

Form:	Thixotropic paste
Viscosity:	20 – 45 Pas (23°C, D = 33s ⁻¹)
Coverage:	c. 100 cm ² / g (WFT :50 μm)
Shelf Life:	3 months, with correct storage (5 to 25°C, in a cool, dry, dark place, and with the container tightly shut).

Properties (Fired)¹⁾:

Breakdown Voltage ²⁾ :	>1500 V AC
Color:	Permanent Blue

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

2) 70 μm thickness, 3 separately fired layers. Measured after printing with a 165 mesh steel screen. Screen thickness was c. 100 μm .

Dielectrics

SD 1000

Dielectric Paste for Chromium-Steel (DPIS*)

The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

Europe [TH]
W. C. Heraeus GmbH
Thick Film Materials Division
Heraeusstr. 12 – 14
63450 Hanau
Germany
Tel: +49 (6181) 35 – 5466
E-Mail: th-info@heraeus.com
Internet: www.heraeus-th.com

North America
Heraeus Incorporated
Thick Film Materials Division
24 Union Hill Road
W. Conshohocken, PA 19428
USA
Tel: +1 (610) 825 – 6050
E-Mail: techservice.hcd@heraeus.com
Internet: www.thickfilm.net

Asia [TH]
Heraeus Materials Technology Shanghai Ltd.
No. 1 Guang Zhong Road
Zhuanquiao Town, Minhang District
201108 Shanghai
People's Republic of China
Tel: +86 (21) 6442 6838
E-Mail: th.hmts@heraeus.com
Internet: www.heraeus-th.com