

Conductors

SR 20-XX Series

Heater Pastes for Heramic Thick Film System (DPIS*)

Development Product Information Sheet

Description:

SR 20-XX-series is a Ag/Pd based resistor paste, especially developed for use as heating track on SD 1000 and SD 2000 or IP 9117 XX dielectrics. It is available in three ranges of temperature coefficient of resistance (TCR). In each range there is a choice of different resistivities.

Pastes of each TCR-group are blendable to achieve desired resistivity

In combination with SD 2000 these heater pastes are cofirable.

Processing:

Spatulate well prior to processing. When stored in a refrigerator allow paste to come to room temperature prior to opening, to avoid condensation.

1. Print through a 200 mesh screen.
2. Level at room temperature for 5 – 10 minutes.
3. Dry at 150°C for 10 minutes.
4. Fire at 850°C (peak) for 10 minutes, and a with total firing cycle time of 30 – 60 minutes.

Thinner

HVS 100

Typical Properties (Paste):

Form:	Thixotropic paste
Viscosity :	30 – 50 Pas, (25°C, D = 100 s ⁻¹)
Printing Speed:	up to 200 mm /s
Coverage:	c. 80 cm ² / g
Shelf Life	6 months with correct storage (5 – 25°C, in a cool, dry, dark place, and with the container tightly shut).

Typical Properties (Fired)¹:

Fired Film Thickness ² :	12 – 18 μm
Power dissipation:	c. 1 W / mm ²

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 Measured after printing with a 325 mesh steel screen. Thickness of screen and emulsion combined was c.75 μm, and the resultant printed track was 500 μm wide.

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Resistivity and TCR

AgPd 9:1

Name	R/□ (mΩ/□)	HTCR _{25-125°C} [ppm/K]
SR 20-090-020	15- 25	850 – 950
SR 20-090-035	30 – 40	850 – 950
SR 20-090-070	60 – 80	850 – 950
SR 20-090-110	100 – 120	850 – 950
SR 20-090-175	150 – 200	850 – 950
SR 20-090-275	250 – 300	850 – 950

AgPd 20:1

Name	R/□(mΩ/□)	HTCR 25-125°C [ppm/K]
SR 20-150-060	60 ± 15%	1400 – 1600
SR 20-150-090	90 ± 15%	1400 – 1600
SR 20-150-120	120 ± 15%	1400 – 1600
SR 20-150-150	150 ± 15%	1400 – 1600
SR 20-150-180	180 ± 15%	1400 – 1600
SR 20-150-300	300 ± 15%	1400 – 1600

AgPd 26:1

Name	R/□ (mΩ/□)	HTCR 25-125°C [ppm/K]
SR 20-175-009	9 ± 15%	1700 – 1800
SR 20-175-015	15 ± 15%	1700 – 1800
SR 20-175-023	23 ± 15%	1700 – 1800
SR 20-175-027	27 ± 15%	1700 – 1800
SR 20-175-035	35 ± 15%	1700 – 1800
SR 20-175-040	40 ± 15%	1700 – 1800
SR 20-175-085	85 ± 15%	1700 – 1800

R/□: 12µm fff, postfired on IP 9117 S

Pastes of each TCR-group are blendable to achieve desired resistivity

In combination with SD 2000 when cofired - the resistivity should be set by individual blend trials.

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.

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