

## Resistors

### 9000V

#### High Voltage Resistor Paste

**Description:**

Series 9000V Resistor System was developed for use in high voltage applications such as focus potentiometers. 9000V series provides excellent power handling and voltage withstanding capabilities. Processing conditions are the same as for our standard materials and adjacent end members are blendable for intermediate resistivities.

● **Key Benefits:**

- Low TCRs
- Minimal sensitivity to processing variations and resistor geometries
- Continuous operation at high voltage gradients
- Excellent as-fired resistance distributions

● **Typical Properties:**

9000V Series :	9151V	9161V	9171V	9181V
Resistivity (ohms/sq.):	100K	1M	10M	100M
Tolerance %	±10	±10	±10	±20
TCR (ppm/°C):	±50	±50	±100	±100
VCR (ppm/V/mm):	- 20	- 52	- 175	- 205
Short Term Overload Voltage (V/mm):	590	1400	1200	1600
Standard Working Voltage (V/mm):	236	560	480	640
Maximum Rated Power Dissipation : (mW/mm <sup>2</sup> )	557	314	23	4
Quan Tech Noise (dB):	- 12	- 6	---	---
ESD (2000 V/mm):	±0.05%	±0.05%	±0.05%	±0.50%

● **Recommended Processing Guidelines:**

**Printing:**

280 stainless steel mesh screen  
0.5 mil emulsion

**Firing:**

850°C peak temperature  
Dwell time of 10 minutes  
30 minute firing cycle

**Thickness:**

Dried: 20-22 µm

**Resistor geometry:**

1mm x 1mm

**Temperature coefficient of resistance:**

CTCR: -55°C to +25°C  
HTCR: +25°C to +125°C

**Voltage coefficient of resistance:**

Laser trimmed with P-cut to 1.5 x average fired value measured from 5-50 VDC.

**Electrostatic Discharge:**

Resistance change after two 2000 volt pulses on a 1mm x 1mm resistor.

**Short Term overload voltage.**

Voltage required (5 second duration) to induce a resistance change to 0.1% in a 1mm x 1mm resistor at 25°C.

**Standard working voltage**

0.4 x short term overload voltage.

**Maximum rated power dissipation**

$\frac{(\text{Standard Working Voltage})^2}{\text{Resistance}}$

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**Thinner:**

RV-372 (Terpineol)

**Warranty:**

Material guaranteed to meet specifications for 6 months from date of shipment.

**Storage:**

Store in a dry location at 5°C -25°C.

**DO NOT REFRIGERATE.**

Allow paste to come to room temperature prior to opening.

Spatulate well before using.

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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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