

Resistors

PCR12000



2 ohm/sq to 100 ohm/sq Resistor System

Description:

The PCR12000 series is a lead-free resistor series that was developed for applications which require peak firing temperatures lower than traditional thick film resistors series. The PCR12000 series is formulated to fire at a 590°C peak firing temperature, which makes this series suitable for substrates such as glass for plasma display panels (PDP).

• **Key Benefits:**

- Lead Free
- Low temperature 590°C firing
- Formulated to fire on glass

• **Typical Fired Resistor Properties:**

PCR12000 Series	PCR12045	PCR12019	PCR12020	PCR12035	PCR12038
Resistivity (Ω/sq.) Termination: 3571 prefired at 620°C. Resistor geometry 1 x 1 mm printed with 280 mesh screen.	2 ± 10%	10 ± 10%	20 ± 10%	40 ± 10%	100 ± 10%
TCR (ppm°C) Cold TCR, -55°C to +25°C Hot TCR, +25°C to +125°C	300 ± 300	300 ± 300	300 ± 300	300 ± 300	300 ± 300
ESD (%) 1 mm x 1 mm resistor % resistance change after 2 x 2000 volt pulses	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Viscosity: **PCR12045, PCR12035 and PCR12038** - 150 - 200 Kcps, Brookfield HBT SC4-14 spindle, and 6R utility cup, 10 rpm @ 25°C.
PCR12019 and PCR12020 – 180 - 220 Kcps, Brookfield HBT SC4-14 spindle, and 6R utility cup, 10 rpm @ 25°C.

● **Recommended Processing Guidelines:**

Printing

Conditions: 165 - 325 mesh, 1.1 mil wire and 0.5 mil emulsion screen. Allow prints to level for 5 – 10 minutes at room temperature.

Print Speed: Up to 10 in/sec (25 cm/sec)

Drying

Conditions: Dry at 150°C for 8-10 minutes

Firing

Conditions: Firing range between 550°C to 650°C
 Recommended 590°C peak temperature with a 10 minute dwell time.
 Total cycle time of 30 minutes.

Thinner: RV-372 (Terpineol)

Resistors

PCR12000



2 ohm/sq to 100 ohm/sq Resistor System

● **Thickness Information:**
(microns)

	PCR12045	PCR12019	PCR12020	PCR12035	PCR12038
Dry	16 - 20	16 - 20	16 - 20	16 - 20	16 -20
Fired	14 - 18	14 - 18	14 - 18	14 - 18	14 - 18

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.

YY0111.2

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.

Americas
Heraeus Materials Technology LLC
Thick Film Materials Division
24 Union Hill Road
West Conshohocken, PA 19428
USA
Phone: +1 (610) 825-6050
E-Mail: techservice.hcd@heraeus.com
Internet: www.thickfilm.net

Europe
W.C. Heraeus GmbH
Thick Film Materials Division
Heraeusstr. 12-14
63450 Hanau
Germany
Phone: +49 (6181) 35-5466
E-mail: th-info@heraeus.com
Internet: www.heraeus-thickfilm.com

Asia
Heraeus Materials Technology
Shanghai Ltd.
No. 1 Guang Zhong Road
Zhuangqiao Town, Minhang District
Shanghai 201108
People's Republic of China
Phone: + 86 (21) 3357-5688
E-Mail: th.hmmts@heraeus.com
Internet: www.heraeus-thickfilm.com