

## Technical Data Sheet

### THICK FILM MATERIALS

Product Type: Resistors

Product Name: PC10000 Series



6.75 ohm/sq to 1.1 Kohm/sq Resistor System

#### Description

The PC10000 series is a Pb-free resistor series that was developed for extremely high temperature applications, which makes them ideal for applications in harsh environments. The system is designed to be screen printed on alumina and processes at 1100°C. The system forms a stable dense microstructure which is stable at high temperatures.

#### Key Benefits

- REACH<sup>1</sup> and ROHS<sup>2</sup> compliant
- Lead Free
- High Temperature 1100°C firing
- Formulated to fire on alumina substrates
- Compatible High Temperature Overglaze: PC11004

#### Typical Properties

PC10000 Series	PC10981	PC10812	PC11038	PC11975	PC11040	PC11976
<b>R&amp;D Part Number</b>	CL80-10981	N/A	N/A	CL85-10975	N/A	CL85-10976
<b>Resistivity (Ω/sq.)</b> Resistor geometry 1 x 1 mm printed with 280 mesh screen.	6.75 - 8.25	10 - 15	45 - 55	90 - 110	450 - 550	0.8K - 1.1K
<b>Viscosity (Kcps)</b> Brookfield HBT, spindle SC4-14, 6R utility cup, 10 rpm @ 25°C	150 - 300	150 - 300	150 - 300	150 - 300	150 - 300	150 - 300
<b>Termination</b> Prefired at 850°C	3504	3504	3504	3504	3504	3504
<b>TCR (ppm°C)</b> Cold TCR, -55°C to +25°C Hot TCR, +25°C to +125°C	1000 - 2000	1000 - 2000	1000 - 2000	1000 - 2000	1000 - 2000	1000 - 2000

#### Recommended Processing Guidelines

##### Printing Conditions

280 – 325 stainless steel mesh or nylon screen, 1.1-1.3 mil wire and 0.5 mil emulsion.  
Allow prints to level 5-10 minutes at room temperature

##### Print Speed:

Up to 10in/sec (25 cm/sec)

##### Drying Conditions:

150°C for 10 minutes

##### Firing Conditions:

1100°C peak temperature with a 10 minute dwell time, total cycle time of 60 minutes

##### Thickness Information (µm)

	PC10981	PC10812	PC11038	PC11975	PC11040	PC11976
Dry (µm)	20 - 24	20 - 24	20 - 24	20 - 24	20 - 24	20 - 24
Fired (µm)	10 - 14	10 - 14	10 - 14	10 - 14	10 - 14	10 - 14

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### Thinner:

N/A

### Warranty

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

### Handling & Precautions:

Use in a well-ventilated area.

Avoid contact with skin.

Wash with soap and water.

### Storage

Store in a dry location at 5 – 25 °C.

### DO NOT REFRIGERATE.

Allow paste to come to room temperature prior to opening. Spatulate well before using, as settling may occur during storage.

### Legend:

<sup>1)</sup> 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)

<sup>2)</sup> 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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