

## Dielectric

### KQ150L

#### Low K Screen Printable Dielectric

##### Description:

KQ150L is an advanced thick film dielectric, which offers a very low loss factor of  $1 \times 10^{-4}$  and dielectric constant of 3.9. It is intended for use in building high performance wireless and microwave structures, in conjunction with other members of the KQ materials family. The material has a rheology suitable for resolving via as fine as 10 mils (250 microns).

##### ● Key Benefits:

- Very low loss
- Low dielectric constant
- Rheology suitable for screen printing

##### ● Typical Paste Properties:

##### Fineness of grind (FOG):

2.0 microns (main break)

##### Peak Firing temperature (see profiles below):

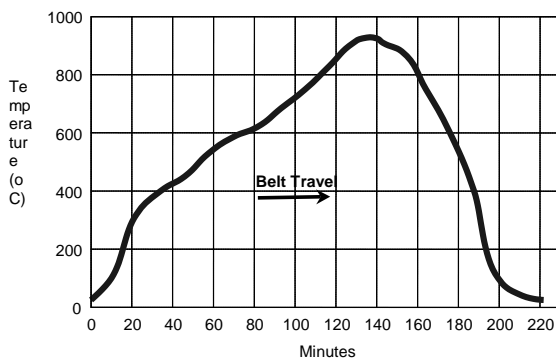
850°C - 950°C

##### Thinner:

RV-372 (Terpineol)

#### KQ150L

925°C Profile



##### ● Typical Fired Properties:

##### Dielectric Constant:

3.5 – 4.5

##### Fired Thickness:

10-12 microns per layer

##### Loss factor:

$1 \times 10^{-4}$  @ 1GHz

##### Via resolution:

250 microns

##### ● Recommended Processing Guidelines:

##### Printing:

325 mesh, 0.9 mil wire

0.5 mil emulsion

##### Drying:

Dry at 150°C for 10 minutes

##### Firing:

KQ150L can be fired through a standard 850°C, 1 hour profile. This will result in a dielectric loss ( $\text{Tan}\delta$ ) of  $< 1 \times 10^{-3}$  @ 10 GHz.  $\text{Tan}\delta$  values of  $5 \times 10^{-4}$  can be achieved with a 925°C peak temperature, 10 minutes at peak temperature, with a total cycle time of 220 minutes.

##### Storage:

Store in a dry location at 10°C-30°C.

**REFRIGERATION NOT NECESSARY.**

Spatulate well before using.

##### Warranty:

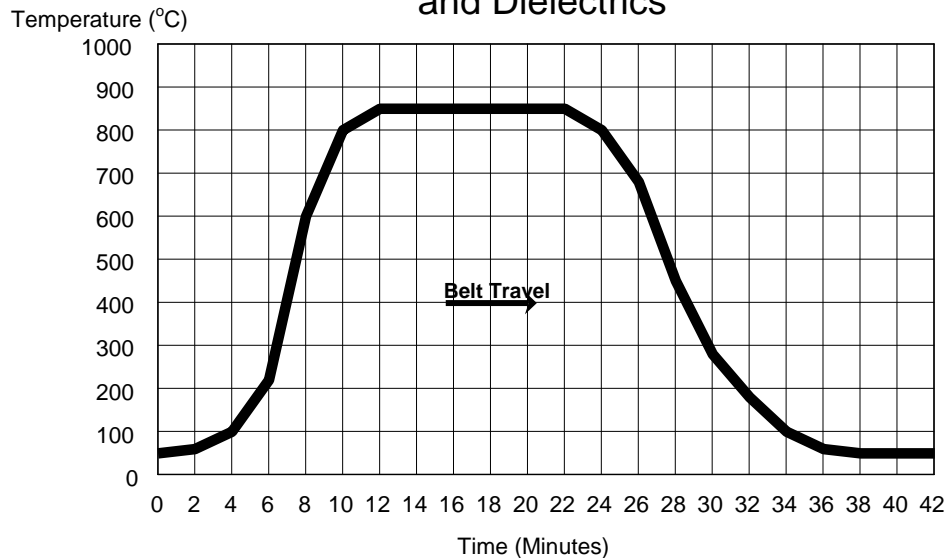
Material guaranteed to meet specifications for 3 months from date of shipment.

YY1109.1

## Low K Dielectric KQ150L

### Screen Printable Dielectric

#### 850°C Firing Profile for Air Fireable Conductors, Resistors and Dielectrics



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](mailto:techservice.hcd@heraeus.com)  
Internet: [www.heraeus-thickfilm.com](http://www.heraeus-thickfilm.com)

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](mailto:th-info@heraeus.com)  
Internet: [www.heraeus-thickfilm.com](http://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) 6442-6838  
E-Mail: [th.hmts@heraeus.com](mailto:th.hmts@heraeus.com)  
Internet: [www.heraeus-thickfilm.com](http://www.heraeus-thickfilm.com)