

## Dielectrics

### IP6017



## Lead Free Dielectric for 3003 Aluminum

#### Description:

IP6017 is a single part dielectric paste which produces an extremely dense, green, hermetic fired film. IP6017 is compatible with 3003 aluminum substrates. Its unique glass system reduces bowing on aluminum while providing high breakdown strength. It is also compatible with Ag conductor C8829A.

#### ● Key Benefits:

- Excellent electrical properties
- High breakdown voltage
- Reduces bowing on Aluminum substrates
- Pb and Cd free

#### ● Typical Properties:

##### Dielectric Constant:

<16.5 @ 1KHz

##### Dissipation Factor:

<0.5% @ 1KHz

##### Insulation Resistance:

>10<sup>11</sup> ohms @ 100 DC

##### Breakdown Voltage:

>1000 VDC per mil  
(At least 2 individually fired layers)

##### Thermal Conductivity:

On aluminum 3003 alloy  
~ 1.7 w/m-K

##### Bowing Deflection

2 P-D-F layers  
< 2.7 μm/mm on 2 mm 3003 aluminum alloy

##### Viscosity:

80 - 120 Kcps  
Brookfield HBT, SC4-14 spindle with 6R utility cup  
@ 10 RPM, 25°C

##### Solids:

72.0 ± 2%

#### ● Recommended Processing Guidelines:

##### Printing:

200 - 250 mesh screen.  
0.5 mil emulsion thickness.  
Double wet printing is recommended to minimize pinholes. Allow wet prints to level at room temperature for 5-10 minutes before drying.  
Two individually fired layers (P-D-F-P-D-F) with a total thickness of at least 50 μm will be necessary to achieve the optimum performance level.

##### Coverage:

150 cm<sup>2</sup>/gm per layer

##### Drying:

Dry at 150°C for 10 minutes

##### Firing:

525°C - 560°C peak temperature; 550°C recommended  
Dwell time of 2 - 3 minutes.

##### Thickness:

Dried: 27 - 35 microns (1 layer)  
Fired: 25 - 27 microns (1 layer)  
50 - 55 microns (2 layers)

##### Thinner:

RV-507

##### Warranty:

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

##### Storage:

Store in a dry location at ~25°C  
**DO NOT REFRIGERATE.**  
Spatulate well before using

YY1010.2

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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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