

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Dielectrics

Product Name: IP6080

CELCION

Dielectrics for Aluminum Substrates



Description

IP6080, part of the Celcion material system, is a cadmium free single part dielectric paste which produces a dense, grey, hermetic fired film. IP6080 is compatible with 3000, 4000, 5000 and 6000 grade aluminum substrates. Its unique glass system dramatically reduces bowing on aluminum while providing high breakdown strength up to 90 μm of dielectric. It is compatible with C8829B and C8829D Ag conductors.

Key Benefits

- REACH¹ and ROHS² compliant
- Excellent electrical properties
- High breakdown voltage (> 5 KV)
- Compatible with Aluminum substrates

Typical Properties

Dielectric Constant
< 20 at 1 KHz

Dissipation Factor
< 0.5 % at 1 KHz

Insulation Resistance
> $10^9 \Omega$ at 100 DC

Breakdown Voltage
> 1000 V DC per mil
(3 individually fired layers)

Bowing Deflection
3 PDF layers – 2" x 2" Al substrate (full coverage print)
< 0.0180 inch on 2mm 3003 – H14 aluminum alloy
< 0.0042 inch on 2mm 6061 – T6 aluminum alloy

Viscosity
40 – 100 Kcps, Brookfield RVT,
SC4-14 spindle with 6R utility cup at 10 rpm, 25 °C

Solids
72.0 \pm 2.0 %

Recommended Processing Guidelines

Printing

280 mesh stainless steel screen
0.5 mil emulsion thickness
Allow wet prints to level at room temperature for 10 minutes before drying
Three individually fired layers with a total thickness of at least 50 μm will be necessary to achieve the optimum performance level

Coverage

155 cm^2/g at 40 μm wet film thickness

Drying

150 °C for 15 minutes

Firing

550 °C as measured on substrate
Dwell time of 2 – 20 minutes,
dependent on application/substrate mass

Thickness

Dried:	22 – 27 μm (1 layer)
Fired:	17 – 20 μm (1 layer)
	50 – 60 μm (3 layers)

Thinner

RV-507

Warranty

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

Storage

Store in a dry location at 5 – 10 °C to ensure proper performance of shelf life.

Allow paste to come to room temperature prior to opening. Spatulate well before using.

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Legend:

1) REACH compliant according to the latest ** Annex XIV to Regulation (EC) of the European Parliament and of the council on the Registration, Evaluation, Authorisation and Restriction of Chemicals ("REACH") by European Chemicals Agency and its subsequent amendments; the material does not contain any substance listed in Annex XIV.

2) 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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