

## IP9227

### Dielectric / Glaze

#### Description

IP9227 is a gray-blue 850 °C firing dielectric composition. It withstands harsh conditions such as thermal shock cycling and hot temperature applications to meet requirements of automotive industry. IP9227 displays the following benefits:

#### Key Features

- Expansion coefficient is closely matched with that of alumina, to provide for minimal substrate bowing
- Extremely dense, hermetic fired film allows for excellent electrical performance in a 2 layer, large area build-up
- Excellent solderability and adhesion of Ag, Ag/Pd, Ag/Pt, Au and Au/Pt conductors on top of dielectric
- Excellent wire bondability of Ag and Au based conductors on top of dielectric
- Resistors can be processed on top of dielectric
- Absence of the "Battery Effect" in more than 12 refinings
- A separation of dissimilar conductor metallizations such as gold and silver is possible without formation of blisters. This enables the use of more cost-effective, high-conductivity pure silver conductors underneath the dielectric
- Compatible with high reliability laser trimming methods



*This picture does not show the packaging of IP9227 and is solely intended for illustration purposes. The products are available in different packaging configurations and may change over time. Please refer to the latest safety data sheets for safety-relevant pictograms.*

#### Typical Properties

|           |   |
|-----------|---|
| Viscosity | 40 – 60 Pas (23 °C, D = 33/s)                       |
| Solids    | 74.5 ± 1.5 %  |
| Blendable |   |
| Coverage  | c. 70 cm <sup>2</sup> /g (35 µm wet film thickness) |
| Color     |   |

#### Recommended Processing Guide

|                           |   |
|---------------------------|---|
| Printing Parameters       | 165 – 230 mesh stainless steel screen with Direct Coating (no emulsion). To achieve optimum performance two individually fired layers with a total thickness of at least 40 µm are recommended. A 230 mesh screen will offer best via resolution. |
| Printing Speed            | Up to 10 cm/s   |
| Leveling                  |   |
| Drying Temperature        | Dry at 150 °C for 10 – 20 minutes   |
| Process Temperature (TDS) | Fire in air, with a 30 – 60 minute cycle to a peak temperature of 850 °C. Dwell time of 10 – 12 minutes.  |
| Film Thickness            | ≥ 40 µm (2 separately fired layers)   |
| Recommended Thinner       | HVS-507   |
| Paste Compatibility       | Conductors Ag C8728 AgPt C4729 C4731 (LPA614-085) Au C5729  |

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#### Warranty

6 months

#### Storage

store in a dry, cool (5 – 25 °C) and dark place with container tightly shut

#### Americas

Phone +1 610 825 6050

[electronics.americas@heraeus.com](mailto:electronics.americas@heraeus.com)

#### Asia Pacific

Phone +65 6571 7649

[electronics.apac@heraeus.com](mailto:electronics.apac@heraeus.com)

#### China

Phone +86 53 5815 9601

[electronics.china@heraeus.com](mailto:electronics.china@heraeus.com)

#### Europe, Middle East and Africa

Phone +49 6181 35 4370

[electronics.emea@heraeus.com](mailto:electronics.emea@heraeus.com)

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Heraeus Electronics GmbH & Co.KG, 63450 Hanau, Germany  
Web: [www.heraeus-electronics.com](http://www.heraeus-electronics.com)