

Resinates

A 4841 - H Blue



Barrier Solution / DPIS*

* Development Product Information Sheet

Description

The liquid metal barrier solution A 4841-H Blue is a sprayable organo metallic solution for use on different metal alloys.

After firing a transparent metal oxide film is achieved. This film works as barrier between metal substrate and metal layer, applied in a second step.

Key benefits

- Besides barrier function it provides good adhesion between precious metal layer and substrate.
- Free of lead, cadmium and nickel
- Free of phthalate
- REACH² and RoHS³ compliant

Processing

1. When stored in a refrigerator allow product to come to room temperature prior to opening, to avoid condensation.

2. The solution is miscible with halogenated hydrocarbons, some higher alcohols (e.g. Terpineol), esters and ketones (e.g. Cyclohexanone). Not miscible with aliphatic and aromatic hydrocarbons, lower alcohols, esters and ketones.

3. Application method recommended:

Air brush spray
Electrostatic spray

4. Firing (peak temperature) recommended:

High temp enamels on steel:	700 - 760 °C
Stainless steel:	535 - 540 °C
Mg alloy:	400 - 480 °C
Titanium alloy:	400 - 480 °C
Aluminum alloy:	500 - 540 °C

Thinner

V 16 for spraying
V 35 for brushing
V 39

Typical Properties (Solution)

Form:	Blue liquid
Viscosity:	0.5 - 5 mPas (25 °C, 60 rpm)
Chemical Characterisation:	Silicon resinate, synthetic and natural resins dissolved in organic solvents
Solid Content ⁴ :	3.0 % ± 2.0 %
Coverage:	Not applicable
Shelf Life:	6 months from date of shipment with correct storage (in a dry, cool (5 – 25 °C) and dark place with container tightly shut)

Typical Properties (Fired)¹

Color:	Transparent colorless (clear)
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- 1 Typical properties based on laboratory test methods. For optimum results all materials should be fired in a profiled furnace supplied with dried, hydrocarbon and other contaminant free air (PP-1).
- 2 REACH compliant according to the Commission Regulation (EU) No 143/2011 of 17 February 2011 amending Annex XIV to Regulation (EC) No 1907/2006 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; we define a material as REACH compliant, as long as substances used are not recorded in the Annex XIV.
- 3 RoHS compliant according to the Directives (European Union) No 2011/65/EC of Restriction of Hazardous Substances ("RoHS") and its subsequent amendments (including the exceptions No. 7. c. I of the EU Directive e.g. related to Pb)
- 4 Ash content measurement method: A balance with five digits after point is used. Between 0.5 – 1.0 g of material are weighted in a porcelain crucible (three porcelain crucibles are used). Thereafter cover with a small piece of ash free filter paper and fire in an electric kiln. Heating profile as follows: Heating up to 300 °C in 60 minutes than heating up to 800 °C in 15 minutes and hold this temperature 15 minutes long. Subsequently cool down naturally. Weight the residues and calculate the percentages. Any change of the a. m. parameters will induce different results.

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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