# DM-RES-14201

DYCOTEC MATERIALS

## Product Description

DM-RES-14201 is an RoHS compliant cost effective silver resistor paste to be used as heating elements on ceramics and dielectric coated steel substrates.

## Product Benefits

- Controlled Temperature Coefficient of Resistance (TCR) suitable for heater use
- Compatible with DM-SIP-14001 for end terminations
- Compatible with Dycotec insulator dielectric pastes such as DM-INS-14100
- RoHS compliant

## Paste Preparation

Bring paste up to Clean room temperature (20-25°C) by storing in the print area at least 2 hours prior to printing. Before use, the paste should be thoroughly but gently stirred with a spatula avoiding incorporation of air bubbles. Thinning of the paste is not recommended but for slight adjustments in viscosity, DM-RES-14201-DT may be carefully used.

## Properties of Paste

| Test | Properties |
|---|---|
| Viscosity after mixing<br>(Brookfield, Spindle RV-7, 10 rpm, 25.5°C) | 190-250 Pa.s |
| Solids Content | 77-83% |
| Thinner | For slight adjustments in viscosity use DM-RES-14201-DT |
| Coverage | Approx 80 $cm^2/g$ @20 µm |

## Paste Printing Conditions

| Parameter | Typical Properties |
|---|---|
| Substrate | 96% alumina,dielectric coated steel |
| Screen | 325 SS, 25 µm emulsion |
| Flood/Print speed | 70-150 mm/s |
| Squeegee type | 80A shore |

*Please contact info@dycotecmaterials.com for product information

## Paste Processing Conditions

| Parameter | Typical Properties |
|---|---|
| Levelling Time | Allow 5-10 mins before drying |
| Drying Temperature | 140˚C |
| Drying Time | 10-15 mins on alumina |
| Firing Temperature | 850°C peak temperature. Dwell time at peak:10 mins |
| Heat Ramp Rate | >50°C/min |
| Cooling Rate | >50°C/min |
| Total Firing Time | 40-60 mins |

It is of paramount importance that the air supply to the furnace is clean and dry and free of any contaminants such as oil.

## Properties of Fired Paste

| Test | Typical Properties |
|---|---|
| Substrate for Calibration | DM-INS-14100 coated 430 stainless steel |
| Sheet Resistance | 100 ± 10 mΩ/sqr (at 20µm fired thickness) |
| Dried print thickness | 20 µm |
| TCR | 3300 ± 50 ppm/°C |

## Storage and shelf-life

The paste shelf-life for an unopened container is 6 months from date of shipment. Avoid introduction of water into the paste. Dycotec Materials cannot assume responsibility for a paste that has not been stored in appropriate conditions or where the pastes have been contaminated following use.

## Safety and Handling

For safe use of this product, please review relevant safety datasheet (SDS).

For more information, please contact:

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