

## Product Description

DM-SIP-14022S is an RoHS compliant mixed bonded solderable silver/platinum (3%) cermet paste. It gives a smooth dense fired layer on alumina and because of its wide firing range it can be used on other substrates such as glass, Porcelain Enamel Steel (PES) and other ceramics. Typical applications include terminations for chip resistor, potentiometers and heaters. It has excellent electrical conductivity and solder leach resistance.

## Product Benefits

- Excellent solderability with SAC and Sn95/Ag5 solderpaste systems
- Excellent fired density on alumina
- 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-SIP-14021-DT may be carefully used.

## Properties of Paste

Test	Properties
Viscosity after mixing (Brookfield, Spindle RV-7, 10 rpm, 25.5°C)	190-250 Pa.s
Solids Content	79-81%
Thinner	For slight adjustments in viscosity use DM-SIP-14022-DT
Coverage	Approx 100-120 cm <sup>2</sup> /g @12.5 µm

## Paste Printing Conditions

Parameter	Typical Properties
Substrate	96% alumina, glass, PES, ceramics, DM-INS-14100*
Screen	325 SS, 25 µm emulsion
Flood/Print speed	70-150 mm/s
Squeegee Hardness	60-80A shore

## Paste Processing Conditions

Parameter	Typical Properties
Levelling Time	Allow 5 mins before drying
Drying Temperature	140°C
Drying Time	10-15 mins
Firing Temperature	850°C peak temperature. Dwell time at peak:10 mins
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	96% alumina
Sheet Resistance	<8 mΩ/sqr (for 12.5µm fired thickness)
Fired print thickness	9-14 µm
Print Resolution	175 µm Line/ 175 µm Space
Solderability	Excellent (SAC 0307, ROM0 flux, 5s dip at 260°C)
Leach Resistance	3 dip (SAC 0307, ROM0 flux, 5s dip, 260°C)
Adhesion	>30N (90° wire pull, 2 mm x 2 mm pad, SAC 305, ROL1 flux)
Aged Adhesion (48 hours at 150°C)	>25N (90° wire pull, 2 mm x 2 mm pad, SAC 305, ROL1 flux)

## 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:

Dycotec Materials Ltd  
Unit 6, Stainer Road  
Porte Marsh Industrial Estate  
Calne, Wiltshire, SN11 9PX, UK  
Email: [Info@dycotecmaterials.com](mailto:Info@dycotecmaterials.com)  
Tel: +44 (0)1793 422598  
[www.dycotecmaterials.com](http://www.dycotecmaterials.com)

All information reported in the datasheet is for experimental work undertaken in our laboratories and illustrates typical values only. Processing conditions may vary depending on customers' experience and their application requirements and manufacturing process equipment set-up.

Note: The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, Dycotec Materials specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale of use of Dycotec Material's products. Dycotec Materials specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Dycotec Material patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one of or more UK or foreign patents or patent applications.

Copyright© 2022

Revision: 1.00  
Date: May-2022