

Product Description

DM-SIP-3076S is a high resolution screen printable silver paste for PV metallisation for thin film and heterojunction silicon solar cells. The paste is designed for low curing temperature (140-200°C). The paste is compatible with TCO-PET and TCO-glass based substrates.

Product Benefits

- Low temperature sintering temperature (140°C-200°C)
- Excellent contact resistance (<2 mΩ.cm²)
- Fine line print resolution (<60 μm)
- Excellent electrical conductivity (<5 mΩ/□/25 μm) at 200°C cure

Paste Preparation

DM-SIP-3076S is a thermoplastic silver based paste system. The paste should be gently stirred before use avoiding incorporation of air bubbles. Once the paste has been removed from the container for printing, this may introduce contamination. Please do not replace the paste in the container.

Properties of Uncured Paste

Test	Properties
Viscosity after mixing (Pa.s) (Cone and plate 50s ⁻¹ , 20°C)	6 - 12
Thinner	For slight adjustments in viscosity, use DM-SIP-3076S-DT
Coverage	175 cm ² /g (10 μm)
Solids Content	88 - 90 %
Density	4.3 g/cm ³

Paste Processing Conditions

Parameter	Typical Properties
Printer Type	Flat bed screen printing for manual or automatic use
Substrate	PET, Glass, TCO-glass, CIGS, Silicon Heterojunction
Screen	P165 20 μm emulsion
Flood speed	120-300 mm/s
Print speed	120-300 mm/s
Squeegee type	80A Shore

The paste can be dried using either a convection oven or using IR heating. Typical drying parameters used are 140°C-200°C for 10-30 mins. Drying times may be reduced to achieve the optimum resistivity depending on manufacturing process set-up. Typical print thickness after drying is 12 μm (PME 165-27).

Properties of Cured Paste

Test	Typical Properties
Sheet Resistance	<5 mΩ/□/25 μm at 200°C cure
Contact Resistivity	<2 mΩ.cm ²
Adhesion	5B
Resolution (L/S)	<60 μm depending on print deposition set-up
Environmental Testing (85°C/85%RH)	No increase in sheet or contact resistance

Clean-Up

Avoid drying of the pastes on screen. Equipment can be cleaned using PGMEA (Propylene glycol methyl ether acetate)

Storage and shelf-life

Containers should be stored in a cool dry place (4-7°C) with lids tightly sealed. Paste has a shelf-life of up to 6 months. 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.

For more information, please contact:

Dycotec Materials Ltd
Unit 6, Stanier Road
Porte Marsh Industrial Estate
Calne, Wiltshire
SN3 9PX UK
Email: info@dycotecmaterials.com
Tel: +44 (0)1793 422596
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.

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