

Product Description

Dycotec DM-SIJ-3200 is a nanosilver ink-jet printable ink that is used for printed electronics applications such as sensors, heaters and solar cell. The ink offers excellent electrical conductivity at low curing temperatures (100°C) on PET, PI and paper substrates.

Product Benefits

- Excellent electrical conductivity (<5 mΩ/□/25μm at 100°C)
- Low temperature sintering (100°C)
- Excellent adhesion (5B)

Ink Preparation

Gently stir before use. Avoid incorporating air bubbles. Once printed, the Ink should be dried at 60-80°C for 20 mins prior to curing.

Properties of Uncured Ink

Test	Properties
Viscosity after mixing (cP) (Cone and plate 500s ⁻¹ , 25°C)	12-20
Thinner	For slight adjustments in viscosity, use DM-SIJ-3200-DT
Density	1.5-1.6 g/cm ³
Surface Tension (mN/m)	31-34
Solids Content	36-39 %

Ink Processing Conditions

Parameter	Typical Properties
Substrate	PET, PI, Paper
Deposition Method	Ink-Jet, tested on 30 pL Spectra SE, 90-130 V, 25-35°C

The ink can be dried using either a convection oven or using IR heating. Typical drying parameters used are 60-80°C for 20 mins. Drying times may be reduced to achieve the optimum resistivity depending on manufacturing process set-up. The ink should then be sintered in a temperature range from 100-140°C for 10-30 mins.

Properties of Cured Ink

Test	Typical Properties
Sheet Resistance	4 mΩ/□/25μm at 100°C
Volume Resistivity	10 μΩ.cm at 100°C
Adhesion	5B
Typical Dry Film Thickness	1-2 μm depending on print deposition set-up

Clean-Up

Equipment can be conditioned or cleaned using propylene glycol methyl ether acetate. Alcohols such as IPA should not be used.

Storage and shelf-life

Containers should be stored in a fridge at a storage temperature between 4-7°C with lids tightly sealed. The ink 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 an ink that has not been stored in appropriate conditions or where the ink have been contaminated following use.

Safety and Handling

For safe use of this product, please review relevant material safety and datasheet (MSDS).

For more information, please contact:

Dycotec Materials Ltd
Unit 6, Stanier Road
Porte Marsh Industrial Estate
Calne, Wiltshire UK
Email: Info@dycotecmaterials.com
Tel: +44 (0)1793 422598
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.