DM-IN-7014S

DYCOTEC MATERIALS

Product Description

DM-IN-7014S is an electrically insulative translucent UV curable, screen printable solvent free dielectric paste. It offers excellent electrically insulating properties and is designed for dielectric cross-over applications. Application use is for flexible circuit manufacture including sensors, membrane switch cross-over and tail coat applications. RoHS and REACH compliant.

Product Benefits

- Excellent flexibility and toughness, excellent insulating resistance and dielectric strength
- Solvent free ensuring safe use and enhanced stability during printing
- Excellent adhesion on a range of PET substrates (Autotype CT/HT, Melinex)
- Rapid UV cure ensures fast production speeds and improved levelling
- Compatible with Dycotec's conductive silver (DM-SIP-3074S)

Ink Preparation

DM-IN-7014S is a single part paste system. It is supplied ready for use and does not require dilution. Carefully stir for 1-3 minutes avoiding air bubble entrapment before use. The material should be prepared and printed in an environment that prevents the paste being exposed to UV light sources such as fluorescent lighting or direct sunlight. Once the paste has been removed from the container for printing, this may introduce contamination. Please do not replace the paste in the original container.

Properties of the Uncured Ink

Test	Properties
Viscosity after mixing (Pa·s) (Malvern Kinexus Ultra+, cone and plate $50s^{-1}$, 25°C)	5 - 15
Paste Colour	Cream
Density	1.15 g/cm^3

Paste Processing Conditions

Parameter	Typical Properties
Printing equipment	Manual and automatic screen printers
Substrate compatibility	Dupont Melinex and Autotype CT/HT
Screen	100 thread/cm polyester
Print Thickness	100 threads/cm screen with 6um emulsion, 12-14 µm per layer
Flood Speed	70 mm/s
Print speed	70 mm/s
Squeegee hardness	80A Shore A Durometer
Print Gap	2 mm
Coverage	870 cm^2/g : Single layer cured thickness 10 µm
Number of prints	2 - it is recommended to print 2 layers of dielectric to maximise reliability
Thinner	Not recommended
UV Input Power	UV Hg lamp, 140 W/cm
UV Energy	Apply two layers ink and cure at 0.3 - 0.7 Joules/cm^2 for each layer to ensure good adhesion to substrate. For crossovers, apply two print cure passes for a total of 24 to 28 µm thick coating

Properties of the Cured Ink

Test	Properties
Pencil hardness scale (ASTM D3363-74)	HB
Adhesion (ASTM D3359)	5B
Flexibility (3mm Mandrel)	Pass
180°Crease Test (2kg Weight)	Pass
Volume Resistivity @25°C	3.00 x 10^{15} Ω·cm
Surface Resisitivity @25°C	7.0 x 10^{13} Ω/ □
Breakdown Voltage	1500 V AC per 25 µm
Dielectric Constant, 60Hz @25°C	1.40
Colour	Translucent

Clean-up

Equipment can be cleaned using Acetone. Allow the screen to dry completely to avoid solvent contamination to the paste.

Safety and Handling

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

Storage and Shelf-life

Store at room temperature (10-25˚C) with lids tightly sealed. The paste shelf-life for an unopened container is 6 months from date of shipment. Avoid direct sun light. Store used paste separately. 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, Stainer Road
Porte Marsh Industrial Estate
Calne, Wiltshire
SN11 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.

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© 2025

Revision: 1.00
Date: June-2025