

## Product Description

DM-AS-10003 is a single part solvent free silver epoxy conductive adhesive paste that provides excellent adhesion. The paste can be used on flexible low temperature substrates such as textiles, PC and PET for applications such as heaters, sensors and medical devices. The adhesive maintains flexibility when fully cured, minimising the stress concentrations that originate from thermal expansion differences between bonded surfaces.

## Product Benefits

- Low temperature curing temperature (130-150°C) and solvent free
- Dispensed from syringe, available in various syringe packaging sizes
- Excellent adhesion >16 N/mm<sup>2</sup> (copper)
- Excellent electrical conductivity (<2 x 10<sup>-4</sup> Ω.cm)
- Flexible assembly joint minimising stress that can lead to device failure for flexible electronics

## Paste Preparation

Provided in syringe for immediate use. Paste systems can also be provided in pots for syringe or screen printing, please contact [info@dycotecmaterials.com](mailto:info@dycotecmaterials.com) for more information.

## Properties of the Uncured Paste

Test	Properties
Viscosity after mixing (Pa.s) (Cone and plate 50s <sup>-1</sup> , 20°C)	10-15
Thinner (for pot packaging)	For adjustments in viscosity, use DM-AS-10003-DT
Density	3.82 g/mL
Conductive Filler Type	Silver
Colour	Silver-grey

## Paste Processing Conditions

Parameter	Typical Properties
Substrate	PET, PC, metals
Deposition Method	Time-pressure dispenser
Cure Temperature	130-150°C
Cure Time	30-60 mins

Pastes should be dried, before curing, at 130-150°C for 30-60 mins to remove solvents in an IR or convection oven. Drying and curing times may be reduced to achieve the optimum performance depending on manufacturing process set-up.

The paste is compatible with a broad range of Dycotec conductive silver products, please email [info@dycotecmaterials.com](mailto:info@dycotecmaterials.com) for further information.

## Properties of the Cured Paste

Test	Properties
Volume Resistivity	$<2 \times 10^{-4} \Omega \cdot \text{cm}$
Adhesion (ASTM D3359)	5B
Die Shear Strength	$>16 \text{ N/mm}^2$
Water Absorption (ASTM D570-98)	$<0.7\%$ after 24 hour immersion
Flexibility (50 cycles, bend radius 15 mm)	No increase in resistance (150°C)
Weight Loss	0.36% (200°C), 0.62% (250°C), 1.96% (300°C)
Intermittent Maximum Operating Temp	278°C
Continuous Maximum Operating Temp	200°C

## Clean-Up

Equipment can be cleaned using isopropanol (IPA).

## Storage and Shelf-life

For optimum results, the containers should be stored in a fridge (4 - 7°C) with lids tightly sealed. The paste shelf-life is 6 months from date of shipment. Please ensure the material has time to reach room temperature before use. 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 material safety and datasheet (MSDS).

## Packaging

Available for manual use with manual plunger DM-AS-10003-SYP-10 (10cc) or 30cc, 50cc syringes eg DM-AS10003-SY-XX (where XX = 30 or 50).

Larger syringe sizes eg 70cc, 180cc, 360cc and 600cc or pot packaging 250g and 1Kg (DM-AS-10003-P) available on request

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 422596  
[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: 1.01

Date: August-2022