

Product Description

DM-SAS-10010 is a silver filled polyurethane stretchable conductive adhesive used for wearables, In-Mold Electronics (IME) and general printed electronics applications. It is a single part syringe printable ink for use on PET, textile, TPU and metal substrates.

Product Benefits

- Stretchable adhesive up to 100%
- Enable stress relaxation for the component assembly joint during stretching/flexing
- Low temperature sintering temperature (80-140°C)
- Excellent adhesion to PET, textile, TPU and metal substrates
- Excellent electrical conductivity <math><20 \text{ m}\Omega/\square/\mu\text{m}</math> (140°C)
- Deposition using syringe enabling additive processing and reduced waste
- Fully compatible with Dycotec stretchable conductive and encapsulating pastes

Paste Preparation

DM-SAS-10010 is a polyurethane silver based ink system. The ink should be used in manual and automatic syringe deposition systems, bar coating or brushing

Properties of Uncured Paste

Test	Properties
Viscosity after mixing (mPa.s) (Cone and plate 50s ⁻¹ , 20°C)	3-7
pH	7-9
Type	Single part polyurethane
Solids Content	74-78 %
Thixotropic Index	6
Density	1.8-2.0 g/mL
Particle Size	<math><20 \mu\text{m}</math>

Paste Processing Conditions

Parameter	Typical Properties
Substrate	PET, textile, TPU and metal substrates
Deposition Method	Syringe, micro-extrusion, bar coating, brush

The paste can be dried using either a convection oven or using IR heating. Typical drying parameters used are 80-140°C for 30 mins. Drying times may be reduced to achieve the optimum resistivity depending on manufacturing process set-up.

Properties of Cured Paste

Test	Typical Properties
Volume Resistivity	$<1 \times 10^{-4} \Omega \cdot \text{cm}$ (80°C), $<5 \times 10^{-5} \Omega \cdot \text{cm}$ (140°C)
Contact Resistance	$<1 \times 10^{-5} \Omega \cdot \text{cm}^2$ on gold pads
Pull Strength	$>10 \text{ Kg/cm}^2$ (tin plated finish)
Die Shear Strength	120 N/cm ² (80°C), 380 N/cm ² (120°C) (020 LED on silver)
Stretch	~100% (80°C cure), ~50% (140°C cure)
Durability (85°C, 85%RH)	No increase in resistance or adhesion loss after 1000 hours

Clean-Up

Equipment can be cleaned using water.

Storage and shelf-life

Containers should be stored in a fridge at a storage temperature between 4-6°C with lids tightly sealed. The paste shelf-life for an unopened container 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).

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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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