

PChem Associates

SP-100 - Silver Nanoparticles

SP-100

Silver nanoparticles for use in conductive inks, pastes, adhesives and coatings

Product Description:

Spherical silver metal nanoparticles suspended in an aqueous medium. Can be used for formulating conductive inks with low temperature curing or as additives in antimicrobial coatings, resins, and paints.

Particle Size

Nominal Size - 15 nm

Size Range – 2 nm to 80 nm

Concentration

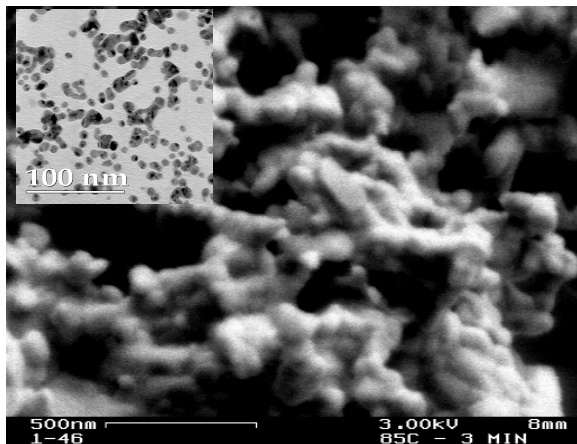
The metal particle concentration is available in the range 1-wt% (0.1 vol%) up to 50-wt% (5 vol%).

Solution pH

The pH of the aqueous system as supplied is 5.3 – 5.7. The addition of water other than de-ionized water will cause the metal particles to agglomerate and cure.

Electrical Conductivity

The weight resistivity of films prepared from SP-100, cured at 130°C for 30 seconds are ~2-3 times that of bulk silver (0.15 gΩ/m²).



Applications

- Conductive Inks
- Thin Films
- EMI/RFI Shielding
- Lead Free Solders
- Printed Electronics
- Fuel Cell Membranes

The above SEM micrograph shows a metal matrix of SP-100, heat-treated for 60 seconds at 85°C in a forced convection oven. The inset TEM micrograph shows the particle size of the starting silver nanoparticle.

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