



Applied Nanotech, Inc.

a PEN Inc company

3006 LONGHORN BLVD., SUITE 107 AUSTIN, TX 78758
PHONE (512) 339-5020 ♦ FAX (512) 339-5021 ♦ WWW.APPLIEDNANOTECH.NET

Ag-PV8000

Front side Silver paste for Photovoltaic

Ag-PV8000 is a silver paste suitable for front side contact applications in the solar industry. Ag-PV8000 is screen printed and thermally cured to form front contact patterns on silicon wafer substrates. The proprietary Ag paste formulation forms a low electrical contact on n-type silicon emitter with high sheet resistance. Ag-PV8000 is cadmium free and can be co-fired with commercially available backside Aluminum pastes and Ag pastes.

ANI is ready to work with customers to modify existing paste to meet customer's requirements.

Typical properties

Part Number	Ag-PV8000
Sheet resistance	<5 $\mu\Omega$-cm
Solids Content	> 90 %
Viscosity	260,000-320,000 cP*
Fineness of Grind	<5 μm at 4th
Fired thickness	>14 μm
Typical Wet Print Weight	~ 0.1 g/156 mm\times156 mm cell

* Measured at 10rpm and 25°C with Brookfield HB viscometer



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Application Notes: Ag-PV8000 Silver Paste

Description

ANI's Ag-PV8000 is a silver paste suitable for forming low electrical contact for conventional silicon solar cells. Ag-PV8000 paste can be co-fired with commercially available backside Aluminum pastes and tapping silver pastes.

Storage and Shelf Life

Ag-PV8000 should be stored in a tightly sealed, container at room temperature. Ag-PV8000 paste has a shelf life up to 6 months.

Safety and Handling

When working with Ag-PV8000 paste, use adequate ventilation and wear appropriate protective gear. Ag-PV8000 paste can cause eye and skin irritation. The following precautions should be taken when handling Ag-PV8000 paste.

- Read the Material Safety Data Sheet (MSDS)
- Avoid prolonged breathing of vapors
- Use appropriate safety equipment, such as gloves and eye protection
- Wash hands thoroughly after handling
- Keep the ink container closed when not in use to prevent drying and spilling

Pre-processing

- The Ag-PV8000 paste should be well mixed before use.

Printing

- Printing has been demonstrated using screen print or stencil printing techniques. Conditions will vary based on substrate and technique.

Drying

- Printed paste on substrate can be dried at 100°C for 30 minutes in ambient atmosphere in box oven or dried with industrial belt furnace with peak temperature <250 °C.
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Sintering

- Ag-PV8000 can be fired with belt furnace with proper temperature profile.
- Recommend peak temperature: ~800 °C.

Clean-up

- Follow appropriate cleaning procedures for equipment used to print Ag-PV8000 paste. Excess ink can be removed with ethanol, IPA, or acetone.

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