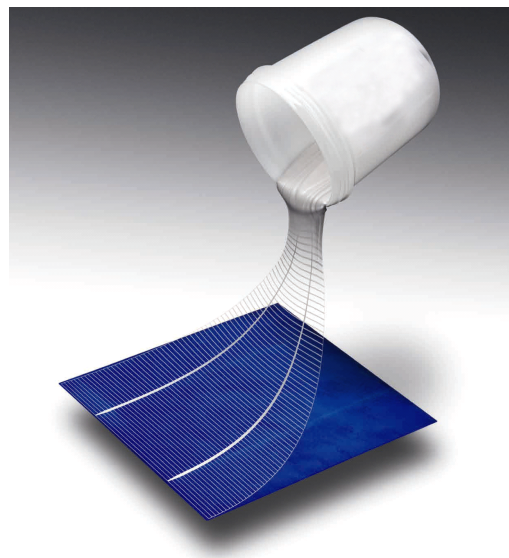




Silicon Solar Cell Paste

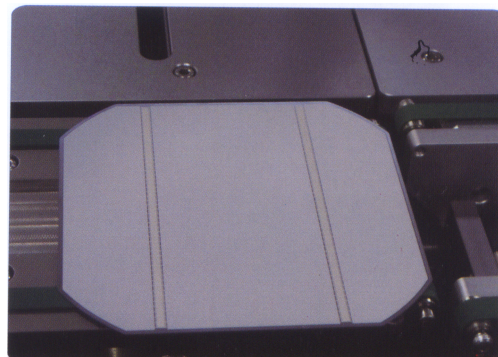
- A-1 Back side Al metallization paste for solar cell SP7881
- A-2 Back side Al metallization paste for solar cell SP7887
- A-3 Front side Ag metallization paste for solar cell SN9081
- A-4 Front side Ag metallization paste for solar cell SN9082
- A-5 Back side Ag metallization paste for solar cell SN9283
- A-6 Back side Ag metallization paste for solar cell SN9285



Since LEED Thick Film Paste Company entered the electronic industry from 2001, to adopt the method of independent research and development and contacting with national university , are the supported project of “National 863 plans” and National Innovation Fund about electronic paste, developed thick film paste for stainless steel, palladium silver conductive paste and silver paste, silver paste for vehicle window defogging, ruthenium resistor paste, PTC linear thermistor paste, heat-drying conductive paste and adhesive series products, and established the production and testing line of solar cell, for researching the silicon solar cell aluminium paste, positive electrode paste and back electrode paste, establish the same product condition and testing method with customers'.

SN788X Back side Al metallization paste for solar cell

LEED SP 788X is an environmental electronic aluminium paste developed to provide back contact metallization for solar cell, to match with the TEC of silicon substrate well, it has the features of good print resolution, fine and smooth surface, high adhesion, low winding and energy conversion efficiency.



工艺参数 Data Sheet

	SP7881	SP7887
固含量 Solids Content	70~85%	
Viscosity (Pa •S) (Brookfield HBT, 25℃, 10rpm)	40~70	
Fineness	<20 μ m	

Screen (BOPP stainless steel)	250~280 mesh	
Drying	红外烘干炉, 250~300℃/3min infrared stove, 250~300℃/3min 旋转烘干炉, 220℃/8~10min rotary dry furnace, 220℃/8~10min	
Firing	760~780℃/1~20seconds	
Dried Thickness	35±3 μ m	
Fired Thickness	25±3 μ m	
Resistivity (fired thickness)	≤30m Ω /□	
Cell Winding (125single crystal silion, 180 μ m)	≤1.2mm	≤0.8 mm
Adhesion (single side EVA adhesive tape)	优 excellent	
Photoelectricity Conversion Efficiency	Single crystal silicon, average conversion efficiency ≥18.2 Polysilicon, average conversion efficiency ≥16.8	
Thinner	LEED XS-08	

SN 908X Front side Ag metallization paste for solar cell

LEED SN928X is an environmental conductive paste designed on silicon solar cell(n⁺) positive electrode. The conductive component in silver paste will be the excellent ohmic contact characteristics with silicon chip penetrating SiNx film, with good printing , low contact resistance, high resolving power and high fill factor.



工艺参数 Data Sheet

	SN9081	SN9082
Solids Content	85~90%	
Viscosity (Pa · S) (Brookfield HBT, 25℃, 10rpm)	380±20	
Fineness	<10 μ m	
Screen (BOPP stainless steel)	325/24mesh	
Drying	infrared stove, 250~300℃/3min	
Firing	760~900℃/1~20seconds	
Dried Thickness	22±3 μ m	
Fired Thickness	15±2 μ m	
Resistivity (fired thickness)	≤2m Ω /□	
(220℃, 62Sn/36Pb/2Ag) solderability	>95%	
(220℃, 62Sn/36Pb/2Ag) weldability	10seconds	
Photoelectricity Conversion Efficiency	Single crystal silicon, average conversion efficiency ≥178.2 Polysilicon, average conversion efficiency ≥16.8	
Thinner	LEED XS-09	

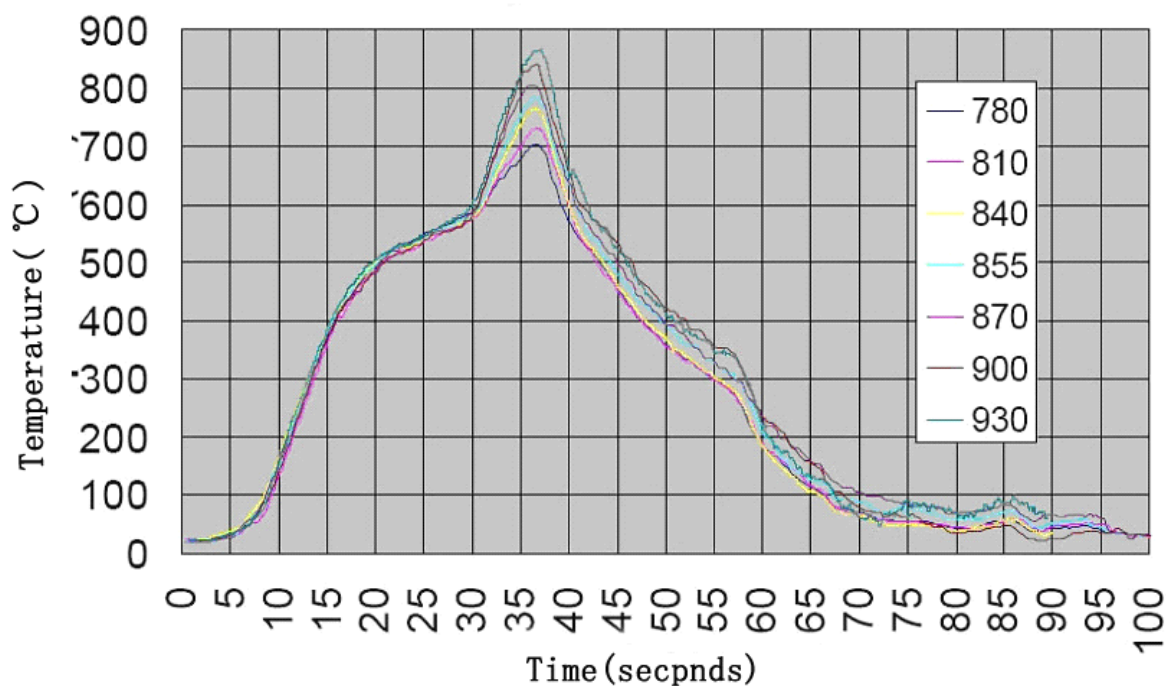
SN928X Back side Ag metallization paste for solar cell

LEED SN928X is an environmental conductive paste designed on silicon solar cell(n⁺) positive electrode. The conductive component in silver paste will be the excellent ohmic contact characteristics with silicon chip penetrating SiN_x film, and have good compatibilities with back aluminium paste when co-fired. It has the features of good printing, low contact resistance, good solderability and weldability .

工艺参数 Data Sheet

	SN9283	SN9285
Solids Content	70~78%	80~85%
Viscosity (Pa • S) (Brookfield HBT, 25℃, 10rpm)	140~250	
Fineness	<10 μ m	
Screen (BOPP stainless steel)	280~325mesh	
Drying	infrared stove, 250~300℃/3min	
Firing	780~930℃/1~20seconds	
Dried Thickness	22±3 μ m	
Fired Thickness	15±2 μ m	
Resistivity (fired thickness)	≤5m Ω /□	≤4m Ω /□
(220℃, 62Sn/36Pb/2Ag) solderability	>95%	
(220℃, 62Sn/36Pb/2Ag) weldability	10Seconds	>15Seconds
Photoelectricity Conversion Efficiency	Single crystal silicon, average conversion efficiency≥18.2 Polysilicon, average conversion efficiency ≥16.8	
Thinner	LEED XS-09	

Firing Technics Curve of Paste



Recommended Technical Information & Notice

Printing: It is recommended the lustration grade of appliance and circumstance to be more than ten thousand degree, it should be guarantee that the room temperature and appliance temperaute remains $24 \pm 2^{\circ}\text{C}$ during printing. Keep stir it slowly and fully before using. If take out of from icebox or icehouse firstly, please place it in the printing house until it return to room temperature.

Drying: It can be dried both in infrared stove and rotary dry furnace, the peak temperature of drying is $250 \sim 300$ degree centigrade, the drying time can be regulated according drying situation.

Firing: Firing is one of most imporant data for affecting the performance of paste.The firing need to use flash firing technics, the peak temperature can be regulated according the quality of fired thickness.

Thinning: The composition is optimized for screen printing and thinning is not normally required.Use the LEED recommended thinner for laigh adjustments to viscosity of to replace evaporation losses. The use of too much thinner or the use of a non recommended thinner may affect the rheological behavior of the material and its printing chracteristics, and stir fully after thinning.

Compatibility: It is therefore essential that customers thoroughly evaluate the material in their specific siuations in order to completely satisfy themselves with the overall quality and suitability of the composition for its intended applications.

Transportation and Storage: During transportation and storage should protect against the tide and contamination. Containers may be stored in a clean, dry and stable environment at room temperature (between $5^{\circ}\text{C} \sim 20^{\circ}\text{C}$),with their lids tightly sealed.

Add: LEED Industrial Park,Huanghe South-road,Naional High-tech Development Area,Zhouzhou City,Hunan Province,China

(P.c.) 412007

(Tel) :86-731-28293620

(Fax) :86-731-28293688

E-mail:dzb@leed.cn

Http://www.leed-ink.cn

About us:

Hunan LEED Thick Film Paste Co.,Ltd specialized in electronic paste developing and production for more than ten years.we are Longer than the R & D, diligent service, pursuit of excellence. All products are to follow environmental protection, energy saving ideas. All product have the same testing conditions and experimentation with our customer's using conditions in order to have the real feeling of our customers. We do hope to provided a new choices for your higher requirement through our product and service. At the same time ,it will also reflect our company's own social value.

Adopt independent R&D and cooperated with University,our company undertake the "national 863 project" and National SME Innovation Fund project. Formed several series of electronic paste with Completely independent intellectual property rights.

Electronic Paste Series	Material of Substrate	Application	Remarks
Thick Film Paste for Steel	430 and 304 type stainless steel	Thick film、Heating element、Home Appliances	Technology Innovation Fund、national "863" project、National patent
Thick Film Paste for Aluminium Substrate	aluminium substrate	Thick Film、LED lamp etc	National patent
Silver Paste for Vehicle Window Defogging	tempered and laminated glass	Window glass Defrost、Heating、Car antenna	
Palladium Silver Conductor Paste	Al ₂ O ₃ 、AlN、BeO etc ceramic substrate etc	Thick Film、Oil level sensor、Adjust speed circuit、Automotive、Communications interface circuits etc	
Silver Conductor Paste	ceramic substrate、quartz glass substrate	GPS Navigation、Thick Film、Heating element、Home Appliances etc	
PTC Thermistor Paste	ceramic substrate	Electronic temperature controls element、Circuit overcurrent protection、Constant temperature Heating	
Heat-drying Conductive Paste	PET、PVC	Membrane Switches、Printed Keyboards、Tantalum Capacitor	
Epoxy Conductive Adhesive	metal、ceramic、plastic	LED wick、Crystal oscillator、Circuit chip bonding、Circuit board repaired	