

# DuPont ALN23

## SILVER/PLATINUM 3:1 CONDUCTOR

### Technical Data Sheet

#### Product Description

DuPont ALN23 is a silver/platinum conductor composition for use on aluminum nitride substrates. DuPont ALN23 is optimized for applications requiring repeated soldering or severe soldering conditions. It offers excellent adhesion, fired density, and processing latitude for demanding applications.

#### Product Benefits

- Excellent leach resistance
- Excellent aged adhesion on aluminium nitride substrates
- Good solderability with 62Sn/36Pb/2Ag and 10Sn/88Pb/2Ag solders
- Compatible with other components of DuPont AlN system

#### Processing Substrates

Properties are based on test on aluminum nitride substrates. Substrates from several different vendors offered consistent results.

#### Printing

DuPont ALN23 prints easily using 280 - 325 mesh stainless steel screens with a 10-15µm emulsion, at printing speeds up to 25 cm/s (10 in/s).

#### Drying

Allow prints to level 5-10 minutes at room temperature. Then dry 10-15 minutes at 150°C, in a well ventilated oven or belt dryer.

#### Typical Physical Properties

Test	Properties
Fired Thickness (µm)	9 - 11
Line Resolution, (µm) (line/space)	150/150
Resistivity (mΩ/sq@12µm)	< 60
Solder Acceptance on AlN, (%) <sup>1</sup> 62Sn/36Pb/2Ag (220°C) 10Sn/88Pb/2Ag (330°C)	>95 >95
Solder Leach Resistance on AlN <sup>2</sup> 62Sn/36Pb/2Ag (230°C) 10Sn/88Pb/2Ag (340°C)	>20 dips > 20 dips
Adhesion on AlN <sup>3</sup> Initial (N) Aged (150°C, 1000 hrs) (N)	> 25 > 20
<small><sup>1</sup> Excellent characterized as complete wetting with smooth solder film after 5 second dip using mildly-activated flux residue (Alpha 611). <sup>2</sup> Cycle consists of dip in mildly-activated flux (Alpha 611), 10-second dip in solder and washing off flux residue. <sup>3</sup> 90° wire peel test on 2 mm x 2 mm (80 mil x 80 mil) pads soldered with 62Sn/36Pb/2Ag solder at 220°C.</small>	
Composition Properties	
Viscosity (Pa.s) [Brookfield HBT, 10 rpm, UC&SP#14, 25 C]	150 - 250
Thinner	DuPont 9450

Table 1 shows anticipate typical physical properties for DuPont ALN23 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

## Firing

Fire in a well ventilated furnace, in air with a 30 minute cycle to a peak temperature of 850°C. Properties are relatively unaffected by multiple re-firing at 850°C.

## Storage and Shelf Life

Containers should be stored, tightly sealed, in a clean, stable environment at room temperature (<25°C). Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

## Safety and Handling

For Safety and Handling information pertaining to this product, read the Material Safety Data Sheet (MSDS).

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