

6179T Pt/Pd/Ag Conductor

Thick Film Composition

All values reported here are results of experiments in our laboratories intended to illustrate product performance potential with a given experimental design. They are not intended to represent the product's specifications.

Product Description

DuPont 6179T Conductor (20:1:0:3 Ag/Pd/Pt) is suitable for low-cost hybrid circuits or resistor networks.

Product Benefits

- Excellent aged adhesion
- Excellent thru-hole printability
- Good Solderability and excellent solder leach resistance.

Compatibility

While DuPont has tested this composition with the recommended processing conditions, it is impossible or impractical to cover every combination of materials, customer processing conditions and circuit layouts. It is therefore essential that customers thoroughly evaluate the material in their specific situations in order to completely satisfy themselves with the overall quality and suitability of the composition for its intended application(s).

Processing

Printing

The composition should be thoroughly mixed before use. This is best achieved by slow, gently, hand stirring with a clean burr-free spatula (flexible plastic or stainless steel) for 1-2 minutes. Care must be taken to avoid air entrapment. Printing should be performed in a clean and well ventilated area.

NOTE: Optimum printing characteristics are generally achieved in the room temperature range of 20°C - 23°C. It is therefore important that the material, in its container, is at this temperature prior to commencement of printing.

Typical Fired Properties	
Resistivity (mΩ/sq) (μm)	≤12 @ 15
Fired Thickness [μm]	10 - 15
Aged Adhesion (N)	>25
Solder Leach Resistance ¹	0.6
¹ Number of 10 second dips in 62Sn/36Pb/2Ag Solder per micron of fired thickness	

Processing Conditions	
Printing	325 mesh stainless, 12-14 μm emulsion
Firing	850°C peak held for 10 minutes on 30 minute cycle in an air atmosphere

Composition Properties	
Viscosity (Pa.S) (Brookfield HBT, 10 rpm #14 spindle&UC, 25°C)	150-250
Thinner	4553
Shelf Life [months]	6

Thinner

This composition is optimized for screen printing, thinning is not normally required. Use the DuPont recommended thinner for slight adjustments to viscosity or 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 characteristics.

Drying

Allow prints to level at room temperature, then dry in a well ventilated oven or conveyor dryer.

Firing

Fire in a well-ventilated belt, conveyor furnace, or static furnace. Air flows and extraction rates should be optimized to ensure that oxidizing conditions exist within the muffle, and that no exhaust gases enter the room.

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

DuPont thick film and products are intended for industrial use by trained personnel. These products contain organic and inorganic ingredients. It is important for workers to avoid overexposure to chemicals contained in these products or that might become available when processing them. Overexposure to other materials used in the operation should also be avoided, for example, cleaning solvents and degreasing fluids.

Well-designed area and personal air sampling/analysis can show if exposures are within required and recommended limits. Properly designed engineering controls, such as local ventilation and process enclosures, are effective in limiting employee exposure

and to avoid the creation of hazardous conditions (e.g. forming an explosive vapor concentration). Engineering controls and procedures must comply with all applicable federal, state and local safety, health and environmental laws and regulations.

The following additional precautions should be taken when handling these products:

- Read the Material Safety Data Sheet (MSDS) and product labels before using the products;
- Use appropriate personal protective equipment (PPE) and practice good industrial hygiene. DO NOT INGEST! DANGEROUS IF SWALLOWED!
- Keep product container closed when not in use to prevent solvent evaporation and spilling hazards;
- If contact with skin occurs, wash affected area immediately with soap and water;
- Avoid prolonged breathing of vapors and dusts/particulates. Keep exposure levels within the required or recommended limits. Always use sufficient ventilation as noted above.

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Caution: Do Not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102

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