

7988H Ag/Pd 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

7988H is a silver/palladium conductors for filling or plugging through-holes in 96% alumina substrates. It creates a low resistance front-to-back interconnection with reduced capacitance effects associated with coated through-holes in high frequency circuits. The hole-fill offers the advantage of surface planarity for increased circuit density.

7988H was developed for filling larger diameter (>10 mils) through-holes while the 7988 works well in the smaller diameter (<7 mils) holes. The rheology of 7988H was also optimised for use for use with either a bladder filler or a screen printer..

Product Benefits

- Solid plugs with a slight depression to improve screen registration on following prints.
- No shrinkage away from sidewalls.

Processing

Substrates

Properties are base on test using 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance properties.

Printing

7988H prints easily with a stencil. Printing with a screen is not recommended due the the high viscosity and solids of the paste.

Drying

Allow prints to level for 5-10 minutes at room temperature. Then dry for 15-20 minutes at 150°C in a well-ventilated oven or belt dryer.

Firing

Fire in a well ventilated conveyor furnace, in air with either a 30 or 60 minute cycle and a peak temperature of 850°C.

Typical Physical Properties

Metallurgy	5:1 Ag:Pd
Thinner	9180
Solids (%)	91.0 - 93.0
Viscosity (Pa.S) (Brookfield HBT, SC4-14/6R, 1 rpm, 25°C)	3,000-7,000
Resistivity (mΩ/sq) (@1 mil fired thickness)	15 - 50
Coverage Number of Holes/Gram	
	7988H (Ag/Pd 5:1)
Hole Size	
8 mil holes/ 25 mil alumina	8,800
10 mil holes/ 25 mil alumina	5,500
15 mil holes/ 25 mil alumina	2,500
20 mil holes/ 25 mil alumina	1,400
Density	5.67g/cc

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 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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MCM7988H (07/2004) Printed in U.S.A.

