

DuPont 5738

GOLD COFIREABLE VIA FILL

Technical Data Sheet

Product Description

DuPont 5738 cofireable gold conductor, part of the DuPont™ GreenTape™ 951 low temperature co-fired ceramic system, is a gold via fill ideally suited for applications requiring high conductivity and reliable interconnections between gold conductors

Product Benefits

When used with GreenTape™ 951 and compatible conductor pastes, DuPont 5738 offers the following benefits:

- High reliability, high conductivity metallization
- High circuit density
- Stacked/thermal or routing vias
- Cofireable processing

Processing

Design

For detailed recommendations on use of GreenTape™ 951 and conductors such as DuPont 5738, see the GreenTape™ 951 Product Data Sheet. For compatible thick film compositions and their recommended use see the GreenTape™ 951 Product Selector Guide.

Thinning

Thinning thick film compositions is not recommended as material is supplied formulated for optimal performance. Improper thinning may affect printing characteristics. Thinner may be added to replenish solvent lost during normal usage but care should be taken to not over-thin.

Drying

Dry in air in a well-ventilated oven or conveyor dryer for 5 minutes at 120°C. Do not over-dry.

Composition Properties

| Test | Properties |
|--|----------------------|
| Clean-up Solvent | 1-Propoxy-2-Propanol |
| Thinner | DuPont 9450 |
| Coverage, cm ³ /g | 0.15 |
| Viscosity (Pa.S) [Brookfield HBT, UC&SP, 1rpm after 3 min. settling time) | 5800 - 7300 |
| Typical Properties | |
| Via Diameter Resolution (µm) | 100 |
| Fired Resistivity ¹ (mΩ/sq) | < 5 |
| <small>¹At 25 µm fired thickness</small> | |

Table 1 & 2 show anticipated typical physical properties for DuPont 5738 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Lamination and Firing

Laminate multiple sheets of GreenTape™ 951 into which DuPont 5738 has been printed according to processing parameters detailed in the GreenTape™ 951 Design Guide and on the GreenTape™ 951 Product Data Sheet. Consult these documents as well for details of the recommended GreenTape™ 951 firing profile for belt or box air furnaces.

Printing

The composition should be thoroughly mixed before use. This is best achieved by slow, gentle, 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. Optimum printing characteristics are generally achieved in the room temperature range of 20-23°C. Viscosity, and therefore printability, of thick film compositions can be affected by ambient temperatures. Form vias in unfired GreenTape™ 951 low temperature co-fired ceramic system. The preferred method for via filling is use of stencil masks and screen printing methods. A vacuum stone or other support structure that uniformly distributes vacuum to the GreenTape™ 951 green sheet is recommended.

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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For more information on DuPont 5738 or other DuPont Microcircuit Materials products, please contact your local representative:

Americas

DuPont Microcircuit Materials
14 T.W. Alexander Drive
Research Triangle Park, NC 27709
Tel.: 800-284-3382

Europe

Du Pont (U.K.) Limited
Coldharbour Lane
Bristol BS16 1QD
U.K.
Tel.: 44-117-931-3191

Asia

DuPont Kabushiki Kaisha
Sanno Park Tower, 11-1
Nagata-cho 2-chome
Chiyoda-ku, Tokyo 100-611
Japan
Tel.: 81-3-5521-8650

DuPont Taiwan Ltd
45, Hsing-Pont Road,
Taoyuan, Taiwan 330
Tel.: 886-3-377-3616

DuPont China Holding Co. Ltd
Bldg 11, 399 Keyuan Rd., Zhangji Hi-Tech Park,
Pudong New District, Shanghai 201203, China
Tel.: 86-21-6386-6366 ext.2202

DuPont Korea Inc.
3~5th Floor, Asia tower #726,
Yeoksam-dong, Gangnam-gu
Seoul 135-719, Korea
Tel.: 82-10-6385-5399

E. I. DuPont India Private Limited
7th Floor, Tower C, DLF Cyber Greens,
Sector-25A, DLF City, Phase-III,
Gurgaon 122 002 Haryana, India
Tel.: 91-124-4091818

Du Pont Company (Singapore) Pte Ltd
1 HarbourFront Place, #11-01
HarbourFront Tower One,
Singapore 098633
Tel.: 65-6586-3022

<http://www.mcm.dupont.com>