

DuPont 5434I

Platable Silver C1 Termination for Chip Resistor Applications

Technical Data Sheet

Product Description

DuPont 5434I is a platable silver termination composition that has been specially developed for chip resistor applications. DuPont 5434I is intended to be applied to ceramic substrates by screen printing and fired in a conveyor furnace in an air (oxidizing) atmosphere.

Product Benefits

- Designed to manufacture all size components including 0402.
- Excellent print definition
- High acid resistance
- Excellent post-plating adhesion
- Fast firing 850°C/30 min

Processing Substrates

Properties are based on tests on 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance, as may different lots of substrates, and any subsequent processing of substrates (e.g. laser scribing/drilling) prior to printing. It is the responsibility of users to determine the effects of any of the above variables in their particular situations.

Printing

DuPont 5434I termination composition should be thoroughly mixed before use. This is best achieved by slow, gentle, hand stirring with a clean burr-free spatula (flexible plastic) for 0.5 - 1 minutes. Care must be taken to avoid air entrapment. Printing should be carried out in a clean and well ventilated area.

Note: Optimum printing characteristics of DuPont 5434I are generally achieved in the temperature range 20°C- 23°C. It is therefore important that material in its container, is at this temperature prior to commencement of printing.

Typical Physical Properties

Test	Properties
Fired Thickness (µm)	9 - 11
Resistivity (mΩ/sq) @10 µm fired thickness	<4
Post Plated Adhesion ¹ , (N) Initial Aged 48hr @125°C	> 20 > 20
<small>* Adhesion test were carried out as follow: Test pattern: DuPont wire peel test with 2mm x 2mm pad size Plating : 4µm Ni followed by 8µm Sn/Pb Soldering : Alpha 611 RMA flux, 62Sn/36Pb/2Ag, @ 220°C, second dip</small>	
Composition Properties	
Viscosity (Pa·s) (Brookfield HAT, 10 rpm JC&SP,ISC-14/6R), 25°C)	100 - 130
Solids (750°C) (%)	79 - 80
Thinner	DuPont 9252

This table shows anticipated typical physical properties for DuPont 5434I based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Screen printing using a 325 mesh stainless steel screen with 10-15µm. emulsion, yields a dried thickness of 16-20µm, and a corresponding fired thickness of 9-11µm.

Drying

Allow prints to level for 5-10 minutes at room temperature in a clean, draught-free environment, followed by drying for 10 minutes at 150°C in a well ventilated oven or conveyor dryer. See Safety and Handling Section for additional information.

Firing

Care must be taken to ensure that any gases/vapors from other chemicals/ materials (e.g. halogenated solvents) do not enter the furnace muffle. It is also essential that the air supply to the furnace is clean, dry and free of contaminants. Air flows and extraction rates should be optimized to ensure that oxidizing conditions exist within the muffle, and that no furnace exhaust gases enter the room. DuPont 5434I should be fired on a 30 minute firing cycle to a peak temperature of 850°C held for 10 minutes.

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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