



# DUPONT™ 5424E

## PLATABLE TERMINATION FOR CHIP RESISTOR APPLICATIONS

### PRODUCT DESCRIPTION

Specially developed for chip resistors applications, DuPont™ 5424E is a platable, lead-free\*, cadmium-free\* silver palladium C1 termination that meets the needs of a high performance and green product.

### PRODUCT BENEFITS

- Lead free\*
- Cadmium free\*
- High acid resistance
- Excellent solder leach resistance with lead-free solder
- Good control of the printed line shape for small chip sizes
- Platable
- Fast firing, 850°C/30min profile
- 2% Palladium content
- Compatible with 00X1Z(00X0) resistor series

\*Lead and cadmium 'free' as used herein means that lead and cadmium are not intentionally added to the referenced product. Trace amounts, however, may be present.

### PROCESSING

#### Substrates

Properties are based on tests using 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variation in performance properties.

#### Printing

Properties are based on 5424E printed to  $18 \pm 2 \mu\text{m}$  dried thickness using 325 mesh stainless steel screen with an emulsion thickness of approximately  $15 \mu\text{m}$ .

#### Drying

Allow wet prints to level for 5-10 minutes at room temperature. Dry for 10 minutes at 150°C.

#### Firing

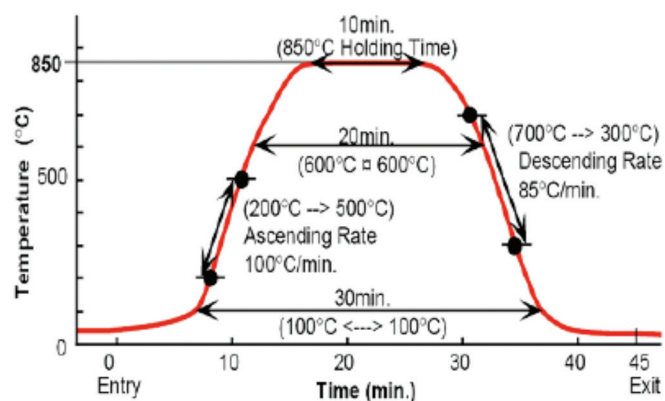
Dried prints should be fired in a belt furnace. Use a 30-minute cycle with a peak temperature of 850°C for 10 minutes.

Table 1. Typical Fired Properties

Test	Properties
F.O.G – 4th Scratch	$\leq 20 \mu\text{m}$
F.O.G – 50% Point	$\leq 10 \mu\text{m}$
Viscosity (Pa.s) [Brookfield HBT, #14 spindle, UC&S @10rpm, 25°C]	210 – 260
Solids (750°C) [%]	75.6 – 77.6
Resistivity @ $12 \mu\text{m}$ (m/ $\Omega\text{sq}$ )	$\leq 10$
Adhesion (N)	$\geq 18$
Thinner	4553

This table shows anticipated typical physical properties for DuPont™ 5424E based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

#### DuPont Standard Profile 850°C x 10 min., 30 min. (DuPont QA Profile)



### STORAGE AND SHELF LIFE

Containers may be stored in a clean, stable environment at room temperature (between 5°C – 30°C) with their lids tightly sealed. Storage in high temperature ( $< 30^\circ\text{C}$ ) or in freezers (temperature  $< 0^\circ\text{C}$ ) is NOT recommended as this could cause irreversible changes in the material. The shelf life of compositions in factory-sealed (unopened) containers between (5°C – 30°C) is 6 months from date of shipment.



## DUPONT™ 5424E PLATABLE TERMINATION FOR CHIP RESISTOR APPLICATIONS

### SAFETY AND HANDLING

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

### FOR MORE INFORMATION ON DUPONT™ 5424E OR OTHER DUPONT MICROCIRCUIT MATERIALS, PLEASE CONTACT YOUR LOCAL REPRESENTATIVE:

#### Americas

DuPont Microcircuit Materials  
14 TW Alexander Drive  
Research Triangle Park, NC 27709  
USA  
Tel +1 800 284 3382 (calls within USA)  
Tel +1 919 248 5188 (calls outside USA)

#### Europe, Middle East & Africa

Du Pont (UK) Ltd  
Coldharbour Lane  
Bristol BS16 1QD  
UK  
Tel +44 117 931 3191

#### Asia

Du Pont Kubushiki Kaisha  
MCM Technical Lab  
DuPont Electronics Center  
KSP R&D B213, 2-1,  
Sakado 3-chome, Takatsu-ku,  
Kawasaki-shi, Kanagawa, 213-0012  
Japan  
Tel +81 44 820 7575

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

DuPont China Holding Company Ltd  
Bldg. 11, 399 Keyuan Road  
Zhangjiang Hi-Tech Park  
Pudong New District  
Shanghai 201203  
Tel +86 21 3862 2888

DuPont Korea Inc.  
3-5th Floor, Asia tower #726  
Yeoksam-dong, Gangnam-gu  
Seoul 135-719, Korea  
Tel +82 2 2222 5275

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 +91 124 409 1818

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

**[mcm.dupont.com](http://mcm.dupont.com)**

Copyright © 2015 DuPont. All rights reserved. The DuPont Oval Logo, DuPont™, and all DuPont products denoted with ® or ™ are registered trademarks or trademarks of E. I. du Pont de Nemours and Company or its affiliates.

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experiments. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge and experience becomes available. Since we cannot anticipate all variations in end-use conditions, DuPont makes no warranties, and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102-5 K-28957 (10/15)