



# DUPONT™ 00L1B

## RESISTOR COMPOSITION

Designed to give high productivity and high quality, DuPont™ 00L1B has been specifically developed for Chip Resistor applications. It also meets the market need for low cost manufacturing.

### PRODUCT BENEFITS

- Designed to give high power performance at low thickness
- Excellent blend ability for low resistivity application
- Improved green strength
- Cadmium free\*

\* Cadmium 'free' as used herein means that cadmium is not an intentional ingredient in and is not intentionally added to the referenced product. Trace amounts however may be present.

### PROCESSING CONDITIONS

- Dried thickness 18.0 – 22.0µm
- Drying 10 minutes at 150 °C
- Firing 850 °C peak held for 10 minutes on 30 minutes firing cycle

### RECOMMENDED PROCESSING CONDITIONS

#### Substrates

Reported properties are based on tests with 96% alumina substrates. Substrates of other compositions may yield variation in performance properties.

#### Termination

00L1B is designed for use with high silver-containing terminations. Reported properties were obtained using DuPont™ 5426 Ag/Pd termination.

#### 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.

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

| Test  | Properties  |
|---|-------------|
| Viscosity (Pa.s) [Brookfield HBT, SC4-14/6R, @10rpm, 25 °C] | 80 – 180    |
| Sheet Resistivity (mΩ/sq)* (25 °C)@20µm                     | 140 - 200   |
| Hot TCR (ppm/°C)* (25 to 125 °C)                            | -100 - +100 |
| Cold TCR (ppm/°C)* (-55 to 25 °C)                           | -100 - +100 |
| Thinner   | 8250        |

\*Resistor geometry is 500sq.

This table shows anticipated typical physical properties for DuPont™ 00L1B based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

#### Thinner

The composition is optimized for screen printing. Thinner is normally not 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

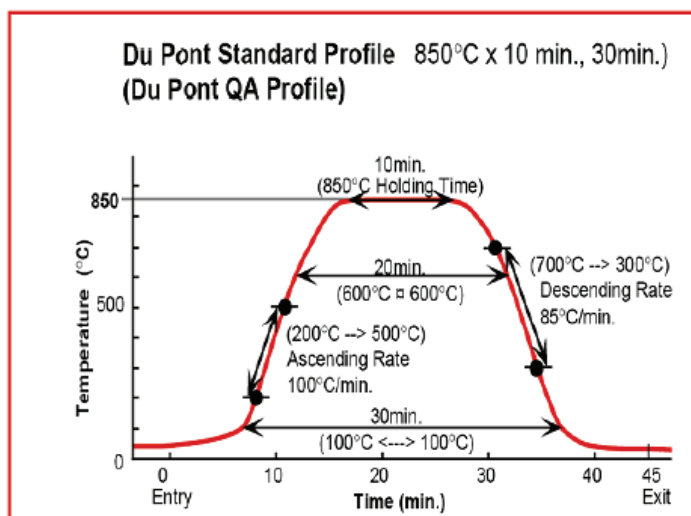
Fire in a well-ventilated belt, conveyor furnace, or static furnace. Air flows and extraction rates should be optimized to ensure that oxidizing conditions exist within the muffle, and that no exhaust gases enter the room.

#### General

Performance will depend to a large degree on care exercised in screen printing. Scrupulous care should be taken to keep the composition, printing screens and other tools free of metal contamination. Dust, lint and other particulate matter may also contribute to poor yields.



## DUPONT™ 00L1B RESISTOR COMPOSITION



### STORAGE AND SHELF LIFE

Containers should be stored, tightly sealed, in a clean, stable environment at temperature 5-30 °C. Shelf life of material in unopened containers is six months from date of shipment. Some setting 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).

**FOR MORE INFORMATION ON DUPONT™ 00L1B 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  
21 Biopolis Road,  
#06-21, Nucleos, South Tower,  
Singapore 138567  
Tel +65 6586 3022

**mcm.dupont.com**

Copyright © 2017 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-29420 (03/17)