

Micromax™ 5881

Electronic Inks and Pastes

Silver/Silver Chloride Composition for Screen Printing

Micromax™ 5881 is a solvent-based silver/silver chloride composition designed for screen printing onto polyester film. It is suitable for use as an electrode or a reference counter electrode for electrochemical sensors.

Product benefits

- Low electrode polarization
- High Conductivity
- Excellent stability on contact with hi salt gels
- Excellent long-term printability

Product information

| | |
|--------------------|--------------------------|
| Solvent or thinner | Micromax™ 8210 |
| Density | 2.96 g/cm ³ |
| Solid content | 78 - 81 ^[1] % |
| Ag:AgCl ratio | 75 / 25 |
| [1]: 150 °C | |

Rheological properties

| | |
|---|-----------------------------|
| Viscosity | 30 - 50 ^[2] Pa.s |
| [2]: Brookfield 0.5RVT, UC&SP, SC4-14/6R, 10 rpm, 25 °C | |

Application technique

| | |
|---|---------------------------------------|
| Mask mesh | 280 - 325 |
| Drying time | 8 - 10 ^[3] min |
| Drying temperature | 110 - 130 ^[3] °C |
| Theoretical coverage | 100 ^[4] cm ² /g |
| Recommended film thickness, dried | 18 - 20 ^[5] µm |
| [3]: box oven | |
| [4]: Approx. 100, Printed with 325 stainless steel mesh | |
| [5]: 280 mesh screen | |

Typical mechanical properties

| | |
|-----------------------|-------------------------|
| Adhesion, cross hatch | 5B ^[6] class |
| [6]: ASTM D3359-78 | |

Micromax™ 5881

Electronic Inks and Pastes

Electrical properties

Surface resistivity

30 - 40^[7] mOhm per square

[7]: at 25.4µm

Storage and stability

Shelf life

6^[8] months

[8]: in unopened containers, from date of shipment, at temperature <25°C

Additional information

How to use

Design & compatibility

- **Design**

- Polyester film substrates should be used. Micromax™ 5881 can also be printed over silver (Micromax™5000, Micromax™ 5025) or over carbon (Micromax™ 7105). Care should be taken to minimize contact of silver/silver chloride compositions with metals, especially reactive metals such as aluminum or brass, no contact should occur. Components made of these materials can be protected by taping or covering with an inert material.

Processing

- **Printing**

- Micromax™ 5881 should be thoroughly mixed with a plastic or coated spatula before use. If settling is found after long storage, mix and then jar-roll composition sample overnight before use. It is best to use a polyester screen when printing to minimize contact with reactive metals.

- **Thinning**

- Micromax™ 8210 may be used sparingly for slight adjustments to viscosity or to replace evaporation losses. However, the use of too much thinner or of a non-recommended thinner may affect the rheological behaviour of the material and its printing characteristics.

- **Clean up solvent**

- Ethylene glycol diacetate or Dipropylene glycol methyl ether.

- **Drying**

- Box oven : 110°C - 130°C for 8-10 minutes, with adequate airflow
- Reel-to-reel : 130°C - 140°C for 3-4 minutes, with adequate airflow

Micromax™ 5881

Electronic Inks and Pastes

Properties

Typical Physical Properties

| Test | Properties |
|--|------------|
| EKG Properties DC offset (mV) | < 5 |
| EKG Properties AC Impedence (Ω) | < 60 |

Information in this datasheet shows anticipated typical physical properties for Micromax™ 5881 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

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 Safety Data Sheet (SDS).

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

© 2023 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC. KEPITAL is a registered trademark of Korea Engineering Plastics Company, Ltd.