

Touchkey Conductive Inks

From the Touchkey family of Flexible Conductive Inks

1. Description

Sun Chemical Circuits Touchkey Conductive Inks 26-8204 and 26-8203 are conductive screen printed inks used in the fabrication of membrane switches, flexible circuits and to print circuits on a variety of substrates.

26-8203 Touchkey carbon ink may be blended with 26-8204 Touchkey silver ink to give inks with intermediate resistivities, at a reduced cost.

This Technical Information Leaflet (TIL) and the relevant Material Safety Data Sheet (MSDS) should be read carefully prior to using this product.

2. Product features

- RoHS & WEEE Directive Compliant
- Suitable for automatic and semi automatic printing machines
- Suitable where quick drying is required



3. Product Range

CHSN8013	26-8204	Touchkey High Conductivity Silver Ink	1.00 kg.
CHSN8002	26-8203	Touchkey Conductive Carbon Ink	1.00 kg.
CDSN4004	XZ42	Retarder	5.00 L.
CDSN4008	XZ46	Screen Cleaner	5.00 L.



4. General Handling

4.1 Storage and Shipping

When stored in sealed containers, in a cool place (20°C / 68°F), away from sources of direct heat and sunlight, Touchkey Conductive Silver Ink 26-8204 has a shelf life of six months, and Touchkey Conductive Carbon Ink 26-8203 has a shelf life of 18 months. Storage at lower temperatures in a refrigerator will assist in maintaining ink properties.

4.2 Waste disposal

Care should be exercised in the disposal of printing ink waste. This should be carried out in accordance with good industrial practice, observing all the appropriate regulations and guidelines.

For more specific handling advice refer to the detailed Safety Data Sheet (SDS), supplied by your local Sun Chemical Circuits representative.

5. Application / Processing Conditions

5.1 Substrates

26-8204 and 26-8203 are suitable for application onto a wide variety of substrates, including untreated and treated polyesters, which are commonly used for membrane switch assembly. Treated polyester is particularly recommended to ensure good adhesion of subsequent inks such as UV dielectrics and graphic inks.

26-8204 and 26-8203 may also be used on other substrates such as polyimide, PVC, ABS, rigid PCB substrates (phenolic and epoxy), card, etc.

It is recommended that before starting a print run that print tests for compatibility with a given substrate are carried out.

5.2 Thinning

26-8204 and 26-8203 are single pack products, and can be used as supplied for many applications, but where viscosity reduction is required, the minimum quantity of Retarder XZ42 should be used.

It is recommended that a maximum of 5% is added, as any addition may reduce dry film weight and increase surface resistivity.

N.B. The product should be stirred well before use.

5.3 Blending Silver and Carbon Inks

26-8204 Touchkey Silver can be blended with 26-8203 Touchkey Carbon to give inks with intermediate surface resistivities, as shown on the graph in Section 7.

The values shown are typical values and should be used as a guide only. Trials are recommended to ensure the required value is obtained before commencing a print run.

5.4 Pre-Clean

Prior to printing the substrate surface should be cleaned of all contaminants to ensure good adhesion between the ink and substrate.



5.5 Application

Conductivity is governed to a large extent by film weight. Therefore meshes should be selected to give the best combination of conductivity and economy.

Monofilament polyester meshes of 49 - 90T/cm. (125 - 230T/inch) can be used with most types of photographic stencil.

A typical print thickness of 9 - 15µm. (0.36 - 0.60mil.) is required, but will depend on copper track height.

Medium hardness polyurethane squeegees are suitable.

All screens, squeegees, and other equipment must be cleaned and thoroughly dried before use and be free from residues of screen cleaner and ink.

5.6 Washing Up

Screen Cleaner XZ46 is recommended for washing up.

Alternative cleaners and screenwashes are available to suit customers' particular requirements. Your local Sun Chemical Circuits representative will be pleased to advise on product selection.

5.7 Drying

The recommended drying schedule is 120 °C (248 °F) for 30 minutes, although shorter drying times may be used with good ventilation.

Adequate drying is essential to achieve optimum conductivity and film properties.

Drying at higher temperatures or for longer times will significantly reduce the surface resistivity.

6. Health and safety

Detailed material safety data sheets will be supplied by your local Sun Chemical Circuits' representative.

The products detailed hereon have been tested in accordance with, and meet the requirements of, the RoHS Directive 2002/96/EC and 2011/65/EU, and the European Directive 2003/11/EC, regarding the presence of the metals - Pb (Lead / Lead compounds), Hexavalent Chromium, Cd (Cadmium), Hg (Mercury), and Poly Brominated Flame Retardants.

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II – Europe.

As the world's foremost producer of inks, pigments and colour technology, Sun Chemical is leading our industry in developing and producing products which minimise our impact – and our customers' impact – on the environment and striving to maximise the use of renewable resources. We consider it our responsibility to be involved in the communities in which we live and work and to offer direction in meeting today's needs without compromising the ability of future generations to meet theirs.



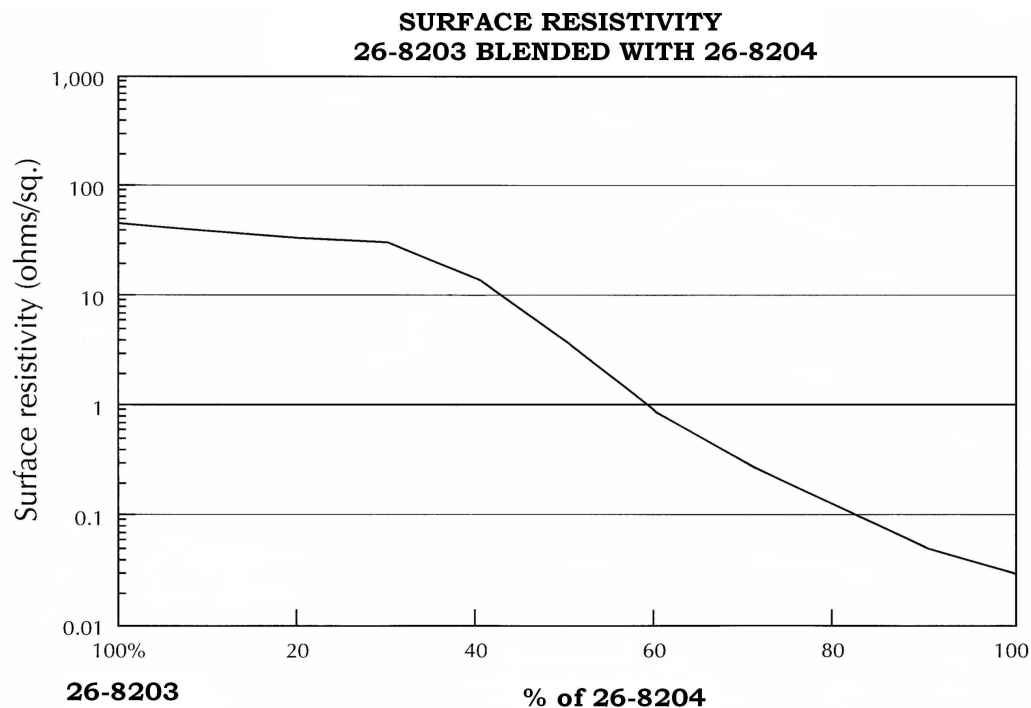
7. Typical Properties

Ink	CHSN8013	CHSN8002
Pigment	Silver	Carbon
Viscosity* @ 25°C (77°F)	2 - 3 Pa.s	10 - 12 Pa.s
Shelf Life in sealed containers	6 months	18 months
Solids (%)	70	47
S.G. (g/cm ³)	2.2	1.2
Pencil Hardness	3H - 4H	4H
Sheet Resistance @ 25µm. (1.0 mil.) dry film thickness	<0.02 Ohm/Sq.	<21 Ohm/Sq
Resistivity	30µOhm.cm.	53mOhm.cm.
Theoretical Coverage (m ² /kg. @ 15µm. d.f.t)	~21	~26

*Viscosity will vary according to conditions, including temperature, viscometer type, and sample size.

This information is provided for guidance only and does not form a specification.

Surface Resistivity



8. Disclaimers

This information has been carefully compiled from experience gained in field conditions and extensive laboratory testing. However the products' performance and its' suitability for the customers' purpose depend on the particular conditions of use and the material being printed. We recommend that customers satisfy themselves that each product meets their requirements in all respects before commencing a production run. Since we cannot anticipate or control the conditions under which our products are used, it is impossible to guarantee their performance. All sales are also subject to our standard terms and conditions.

9. Technical Assistance / Contacts

Sun Chemical Circuits are an international company, and as such can offer technical, engineering and sales support to our customers worldwide.

For further information regarding this product, or any of our extensive range of materials for PCB fabrication, please contact your local Sun Chemical team or visit the Technical Help Desk at website: <http://www.sunchemicalhelpdesk.com>

Our Products are intended for sale to professional users. The information herein is general information designed to assist customers in determining the suitability of our products for their applications. All recommendations are made without guarantee, since the application and conditions of use are beyond our control. We recommend that customers satisfy themselves that each product meets their requirements in all respects before commencing a print run. There is no implied warranty of merchantability or fitness for purpose of the product or products described herein. In no event shall Sun Chemical be liable for damages of any nature arising out of the use or reliance upon this information. Modifications of the product for reasons of improvements might be made without further notice.

