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TECHNICAL APPLICATION GUIDE

Product Description

The ELG UV Curable Conductive Silver is a 100% solids screen printable thick film paste. The ELG Conductive Silvers have been formulated for use on UV print receptive polyesters, ITO sputtered coated films, and most other films commonly used in the manufacture of flexible circuits. The ELG Conductive Silver has a wide processing window making it suitable for use in a variety of applications including RFID, EL, static shields, contact pads, as well as many other applications common to the membrane switch industry. When properly processed it exhibits a low resistive value when measured in ohms per square. The ELG Conductive Silvers can be used with most solvent based carbon resistive compounds as well as UV curable dielectrics.

Application Information

Mesh

PW, monofilament polyester, stainless steel or wire mesh is recommended. For optimum results the following mesh counts are recommended:
305.30 pw Polyester
330.30 pw Polyester
325.0011 pw Stainless Steel

Stencil

Capillary stencil systems between 13 and 18 microns that are UV compatible are highly recommended. Direct emulsions with an EOM of 4 -7 µm are suitable, however thicker or heavier stencils or emulsions should be avoided.

Squeegee

A sharp or molded 70 to 90 durometer polyurethane blade or multi-durometer blades can be used. For optimum ink deposit and performance an 80 durometer molded blade is recommended.

Mixing

Product is supplied a one part system. Some separation of the ink is common and should be expected; therefore it is important to thoroughly mix by hand prior to each use. The use of high speed mixers is not recommended.

Coverage

Coverage per kg, based on deposit: 10 micron = 260 square feet, 1 mil = 110 square feet

Clean Up

Use NSW-824 Screen Wash, or other UV compatible screen washes.

Packaging

Available in 500 gram containers. Smaller quantities are available upon request.

Storage / Shelf Life

Store all inks in black polyethylene, tightly closed containers. Although the ELG Series is considered stable at ambient it is recommended that inks be stored at temperatures below 50˚ F when not in use. Avoid direct sunlight and indirect white light. Excess ink from press runs should be stored in separate containers to avoid the possibility of cross contamination.

When stored under these conditions, the ELG Series is warranted for six months from date of manufacture unless otherwise stated on product package or technical documents. Contact Norcote immediately if you experience any problems with the product.

Ink Handling

Gloves and / or barrier cream is recommended when handling UV inks. Safety glasses are strongly suggested, particularly for areas where ink may be splashed. If skin contact occurs, wash affected area with soap and water (do not sue solvent, thinner, or alcohol).

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Processing Guidelines

Evaluation Parameters

Screen Mesh:	NBC 330.30 pw
Screen Tension	28 Newtons ± 2
Emulsion:	Chromaline Razor 18 capillary film
Test Print Method:	Atma AT 60-P
Squeegee:	80 Durometer / molded edge
Squeegee Angle:	15˚
Off Contact:	.1875"
Squeegee Speed:	350 mm/sec.
Flood Speed:	450 mm/sec.
Test Substrate:	Melinex .007 ST505
Test Equipment:	Fluke 177 Multimeter
	Mitutoyo Hicator II HR-05 w/granite base
	EIT UV PowerMap

Curing Unit:	American Ultraviolet (AUV)		
Lamp Setting:	2 lamps @ 400 wpi		
Bulb Type:	Medium pressure mercury vapor		
Output:		mJ/CM2	mW/CM2
	UVA	765.52	1255.56
	UVB	823.44	1333.25
	UVC	174.77	278.07
	UVV	708.56	1118.26

Standard Properties of Wet Product

Color:	Silver
Viscosity:	4500-5500 cps
Total Solids:	95.5%

Typical Properties of a Cured Product*

Average Film Thickness:	8.6 µm
Resistivity (mΩ/sq/mil)	20 - 25
Resistivity after flex (mΩ/sq/mil) 10 seconds after test Bend (.375" mandrel / 2 cycles)	≤ 35
Adhesion/tape pull 3M Scotch Tape #600	No transfer
Adhesion/Cross hatch 3M Scotch Tape #600	No transfer

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Product Warranty Information

* Information is representative of anticipated properties for Norcote ELG-410S based on specific controlled evaluations in our lab and are not intend to represent nor warrant the product specifications.

The information provided herein is offered for the user's consideration and examination. Although the information is based on data believed to be reliable, Norcote makes no warranties, expressed or implied as to the data's accuracy or reliability and assumes no liability arising out of its use. The information shown is a result of product evaluation conducted at Norcote international, Inc., and is intended to illustrate potential product performance within a specific set of evaluation parameters and design.

While the information provided herein falls within and reflects expected QC and processing ranges established by Norcote based upon such evaluations under controlled laboratory conditions, it should not be used to establish specification limits or used alone as the basis of design. It is the end user's responsibility to determine suitability of product for the intended end use.

Because Norcote cannot control nor anticipate the many different end use and processing conditions under which this product may be used, Norcote does not guarantee the usefulness of the information or suitability of its products in any given application. Users are highly advised and should conduct their own tests to determine the suitability of the products for their particular purpose.

It is the user's responsibility to determine what measures are necessary to safely use the product, either alone or in combination with other products, also taking into considerations the conditions of its facilities, processes, operations, and its environmental, health and safety compliance obligations under any applicable laws.

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