

ELG-410S UV Curable Conductive Ink System

ELG-410S is a one part, high solids, UV curable conductive silver, suitable for 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 trace resistive value. The ELG Conductive Silvers can be used with most solvent based carbon resistive compounds as well as UV curable dielectrics.

Product Features:

- Very Good Conductivity
- Ease of processing
- Use of higher mesh counts for fine line circuits
- Excellent Printability Stable Viscosity

Recommended Substrates:

- Print Treated Polyester
- ITO Coated Films
- Other common substrates used in printed circuits

Printing Recommendations:

ELG-410S should be thoroughly mixed prior to use. This ink is supplied at a print ready viscosity for most applications. If adjustment is needed contact Norcote's® Technical Service Department for more information.

Do not microwave this product.

Mesh:

Plain weave, monofilament polyester, stainless steel or wire mesh is recommended. For optimum results the following mesh counts are highly recommended:

General use:

305.30 pw Polyester

330.30 pw Polyester

Fine line (NBC wire mesh):

500.19 pw (M10 500-019)

500.19 pw (M13 500-019)

640.15 pw (M13 640-015)

NBC V-Screen

V 380.23 pw

Stencil:

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

Squeegee:

Cut (sharp) or molded 70-90 durometer or multi- durometer polyurethane blades that are UV compatible are suitable. For optimum ink deposit and performance an 80 durometer molded blade is recommended.

Clean Up:

Most conventional solvent cleaners work well. Alcohol based solutions must be avoided as they break down the emulsion. Norcote® recommends Press Wash 110 (flash point 113°F), Press Wash 140 (flash point 140°F) or NSW-824 (flash point 150°F). These products are used for cleaning ink off screens during press color changes or before storing the screen. They work well when removing ink from squeegees, flood bars and other equipment.

Storage / Shelf Life:

Store all inks in black polyethylene, tightly closed containers. Although ELG-410S is considered stable at ambient temperatures it is recommended that ink be stored at temperatures below 10°C (50°F) when not in use. Avoid direct sunlight and indirect white light. Excess ink from press runs should be stored in a separate container to avoid the possibility of cross contamination.

When stored under these conditions ELG-410S is warranted until the expiration date Shown on the product label. Contact Norcote® immediately if you experience any problems with the product.

Precautions:

Gloves and/or barrier cream are recommended when handling UV inks. Avoid direct contact of ink with skin and clothing. If contact occurs wash affected area with warm soapy water (do not use solvents or thinners). If eye contact occurs, irrigate the area with water for 15 minutes and consult a physician. For more specific information refer to the relevant Safety Data Sheet.



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Processing Guidelines

Evaluation Parameters:

Screen Mesh:	NBC 330.30 pw monofilament polyester	
Screen Tension:	28 Newtons ± 2	
Emulsion:	Chromaline Razer 18 capillary film	
Press:	Atma AT60-P	
Squeegee:	80 Durometer, molded edge	
Squeegee Angle:	15°	
Off Contact:	.1875"	
Squeegee Speed:	450 mm/sec.	
Flood Speed:	450 mm/sec.	
Substrate:	Melinex .007 ST505	
Test Equipment:	Fluke 177 Multimeter	
	Mitutoyo Hicator II HR-05 w/granite base	
	EIT UV PowerMap	
Curing Unit:	American Ultraviolet	
Lamp Setting:	2 lamps @ 400 wpi	
Bulb Type:	Medium pressure mercury vapor	
Output:	mJ/cm ²	mW/cm ²
UVA	765.52	1255.56
UVB	823.44	1333.25
UVC	174.77	278.08
UVV	708.56	1118.26

Typical Properties of Uncured Product:

Color:	Light Silver
Viscosity:	4500-6500 cP
Theoretical Coverage ft ² /kg.	
@ 10µm cured ink film thickness	275
Total Solids:	95.5%
Shelf life @ <10°C (50°F) days	365

Typical Properties of Cured Product:

Average Film Thickness (330.30 pw)	8.6 µm
Resistivity (Ω/□/mil.)	.025-.030
Resistivity after bend Ω/□/mil.)	<.040
.375" mandrel X4 cycles	
Adhesion:	
Tape pull (3M #600):	No transfer
Resistivity:	No change
Cross hatch (3M #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 intended 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 fall 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 specifications limits or used alone as the basis of design. It is the end users responsibility to determine suitability of product for the intended 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 to, 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 consideration the conditions of its facilities, processes, operations, and its environmental, health and safety compliance obligations under any applicable laws.

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Packaging:

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

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