

**LUMICRYL® 1000** *Experimental Product*  
**UV/EB CURABLE ADHESION PROMOTER**  
**FOR ENERGY CURABLE COATINGS**



THE EDGE OF INNOVATION

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**GENERAL DESCRIPTION**

*Lumicryl® 1000* is a unique energy curable (UV/EB) acrylic resin designed to help promote adhesion to low energy surfaces such as polyethylene, polypropylene, polyesters, other thermoplastics or thermosets, metals and coated paper substrates. Alternatively, *Lumicryl® 1000* may be appropriate for use as the major film forming component of UV curable coatings. Depending on the particular formulation and substrate, *Lumicryl® 1000* should be evaluated at levels from 5-20% for adhesion promotion and at higher levels as the primary film forming component. Formulations incorporating *Lumicryl® 1000* may be photoinitiated with most standard free radical initiators. Viscosity can be adjusted with reactive diluents or common solvents including alcohols, esters, and ketones.

**TYPICAL PROPERTIES\***

Appearance	Clear liquid
Solids	100%
Chemistry	Acrylic
Viscosity	115P (60°C, cone and plate, 200rpm)
Functionality (acrylate unsaturation)	>10
Film Shrinkage	1.8%
Adhesion	Good-Excellent, depending on substrate and cure conditions

\* Not to be used for specification purposes

**POSSIBLE APPLICATION AREAS**

**Coatings:** Paper, wood, flooring, electronics, plastics, metal

**Adhesives:** Laminating, pressure sensitive

**Graphic Arts:** Inks, overprint varnish

**BLENDING**

*Lumicryl® 1000* can be blended with various UV/EB curable reactive diluents or oligomers to enhance certain coating attributes.

Blended With...	% 1000	Property Enhanced
EA	75%	• Adhesion to Phosphate Treated Cold Rolled Steel
PA	25%	• Gloss values
PA	50%	• Adhesion to Phosphate Treated Cold Rolled Steel
AUA	25%	• Gloss values
AUA	50%	• Resistance to 40% Ethanol
AUA	75%	• Resistance to Coffee Staining • Adhesion to Phosphate Treated Cold Rolled Steel
ArUA	25%	• Adhesion to Cold Rolled Steel
ArUA	50%	• Resistance to 40% Ethanol
ArUA	75%	• Adhesion to Phosphate Treated Cold Rolled Steel

EA = Epoxy Acrylate

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PA = Polyester Acrylate  
AUA = Aliphatic Urethane Acrylate  
ArUA = Aromatic Urethane Acrylate

### EXAMPLE FORMULATION

<b>Lumicryl® 1000</b>	20.0
TPGDA	18.0
Genocure LTM	1.00
Genocure DMHA	1.00

### APPLICATION AND CURING

The above listed formulae were applied with a #20 spiral wound bar to a variety of substrates. The applied film thickness is approximately 0.5 mil. Following application, all films were exposed to five passes through the FusionUV Model I-6 (approximately 8 J/cm<sup>2</sup>). Gloss readings were taken after 30 seconds of post-cure rest, and all other testing was after a minimum of one hour of post-cure rest (no maximum).

### RESULTS

<u>Property</u>	
20° Gloss Value	71.7
Pencil Hardness	3H
Hoffman Scratch Resistance (grams)	100
Solvent Resistance (MEK double rubs)	100
<u>Adhesion Values*</u>	
ABS	0
PC/ABS	0
Phosphate Treated Cold Rolled Steel	5
<u>Stain and Spot Resistance to:**</u>	
3% Acetic Acid	0
5% Ammonia	1
40% Ethanol	5
Acetone	0
Distilled Water	1
Red Wine	0
Mustard	4

\* 0-5 Scale: 0=No Adhesion, 5=Excellent Adhesion (Cross Hatch, ASTM D3359-87, Method A)

\*\* 0-5 Scale: 0=Deep Staining, 5=No Effect on Film

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## REGULATORY LISTINGS

The components in Lumicryl® 1000 are either listed or exempt from listing due to compliance with polymer exemption criteria for the following International Chemical Inventories: NDSL (Canada), TSCA (USA).

One or more components of this product are not REACH registered. Import quantities may be subject to limitation.

## PACKAGING & AVAILABILITY

35 lb. / 15.9 kg in steel pail (net weight)

**This product is still experimental and requires lead time.** Please contact your Estron Sales Representative.

## STORAGE AND HANDLING

Store containers of Lumicryl® 1000 at or below 25°C (77°F) away from direct sunlight, ignition sources, and heat sources. Maintain an adequate air headspace in the product container and do not blanket or mix with inert gas as this may render the inhibitor ineffective. Use within 6 months of delivery. Material that has been properly stored may have a longer useful shelf life but should be evaluated for suitability of use. Unexpected or uncontrolled temperature excursions during shipping, transit storage, and final storage may adversely affect useful shelf life and is beyond the manufacturer's control or responsibility.

To facilitate product transfer from the original container, product may be heated up to 60°C (140°F) for not more than 24 hours. Do not use localized heat sources such as band heaters or direct steam. Do not heat for extended periods of time as this may compromise product quality or result in polymerization/gelling.

## CONTACT INFORMATION

807 N. Main Street (270) 395-4195 PHONE  
P.O. Box 127 (270) 395-5070 FAX  
Calvert City, KY 42029 USA

Revision Date: 8/12/19

TDS Revised by: D. Smith

TDS Approved by: F. Allen