

# **TRANSENE**

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## **COMPANY, INC.**

### **ALPHA ASSEMBLY LPR-1 LIQUID PHOTORESIST (NEGATIVE WORKING)**

#### **DESCRIPTION:**

Alpha Assembly LPR-1 Photo-Resist is a negative-working photoresist designed for the graphic arts industries. Developed to reduce solvent usage, LPR-1 develops out using a water-based alkaline solution. This is better than most negative-working resists which develop out using solvent-based developers. Because LPR-1 is a dyed photo-resist, less solvent is needed in dye/inspection related operations.

#### **APPLICATION:**

##### *Safelight Recommendations:*

Gold fluorescent tubes or yellow “antibug” incandescent light bulbs may be used as safelights. Special orange sheeting is also available. Wrap cool white fluorescent tubes with three layers of sheeting; then fasten the ends with black plastic tape. Red fluorescent tubes provide a more positive safe-lighting system. They should be used if coated, unexposed work pieces will be expose to safelight conditions for an appreciable length of time.

##### *Surface Preparation:*

All surfaces should be cleaned prior to applying Alpha Assembly LPR-1 Photo-Resist. Residual oils and particulates on the substrate can affect the adhesion and overall quality of the coating.

##### *Coating:*

The recommended coating thickness is 0.3-0.7 mils (8-18 microns). The coating thickness of the resist, however, should be optimized for each specific process. Variability in the resist thickness can affect the drying, exposure, and development times. Alpha Assembly LPR-1 can be diluted with LPR-1 thinner to provide a wide range of coating thicknesses. Uniform coatings can be achieved by most coating techniques.

##### *Pre-baking:*

Alpha Assembly LPR-1 can be dried by air-drying the resist for 25-30 minutes. If possible, resist coating should be over dried at:

- 12-20 minutes at 160 °F (71 °C)
- 10-15 minutes at 175 °F (79 °C)
- 6-8 minutes at 190 °F (88 °C)

##### *Post-bake:*

Alpha Assembly LPR-1 can be air-dried 25-30 minutes or, if possible, the resist coating should be over-dried at 15-20 minutes at 160 °F (71 °C).

##### *Exposing:*

The exposure of the resists is dependent on the resist thickness and spectral output of the light source. Proper exposure should be predetermined using a 14-step photographic step tablet. Retention of a solid step 8 (approx. 0.125 ND) after development is recommended. A 0.3 mil coating should require approx. 190 mJ/cm<sup>2</sup> of exposure energy.

Development:

Develop the exposed photo-resist using Alpha Assembly LPR-1 Developer at 90 °F – 110 °F (32 °C – 43 °C). Developing time should be twice as long as it takes for the background area to clear. Work pieces should be water-rinsed and dried.

Etching and Plating:

Alpha Assembly LPR-1 will stand up to most etching and plating solutions with the exception of nitric acid, which will bleach the color of the photoresist coating.

Stripping:

Strip Alpha Assembly LPR-1 off work piece using a 3% Sodium Hydroxide solution (see attached chart).

Storage Conditions:

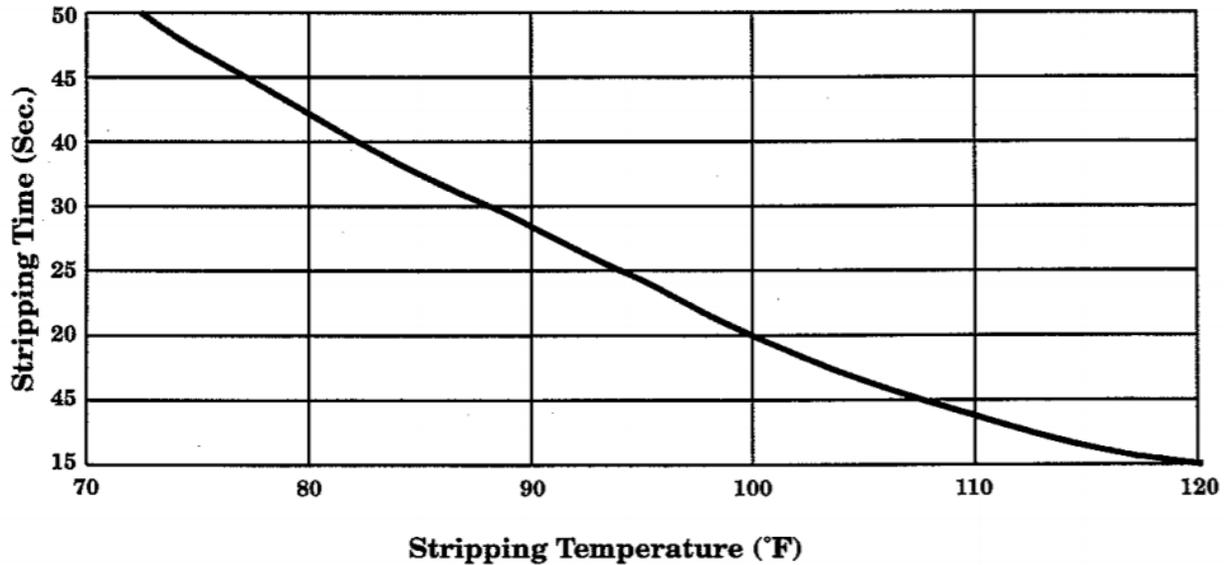
Alpha Assembly LPR-1 should be stored in a cool (50 °F – 70 °F) and dry place away from contact with direct sunlight.

**PHYSICAL PROPERTIES:**

Parameters	Typical Values	Test Methods
Specific Gravity @ 25 °C	1.02	TM-01100
Viscosity @25 °C	75 cps	TM-02012
Flash Point	114 °F	TM-06010
Solids Content 26%	26%	TM-10007
Required Exposure Energy .3 mils coat thickness	190 mJ/cm <sup>2</sup>	
Thinner	Alpha Assembly LPR-1 Thinner	Item No. 24-0012 (1 Gal)  Item No. 24-0042 (5 Gals)
Developer	Alpha Assembly LPR-1 Developer	Item No. 24-0031 (1 Gal)  Item No. 24-0039 (5 Gal)
Container Size	1 Qt. (Item No. 24-0025) 5 Gal (Item No. 24-0037)	

The above represents typical properties of LPR-1 Photoresist based upon analysis of a sample of commercial product. Alpha Assembly does not analyze each shipment of product for all of these properties. Alpha Assembly warrants only that, at the time of delivery, the product will conform to the specifications contained in any Certificate of Analysis provided with the product.

**Alpha Assembly LPR-1 Photoresist**  
**3% NaOH Stripper**



**Before using, read and understand the current Material Safety Data Sheet for this product.  
It contains detailed safety information.**

**IMPORTANT NOTICE TO PURCHASER**

All statements, technical information, and recommendations contained herein are believed to be reliable, but the accuracy or completeness thereof is not guaranteed. In lieu of all warranties expressed or implied, seller's and manufacturer's only obligation shall be to replace such quantity of the products proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use or the inability to use the product. User shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless by agreement in writing signed by officers of seller and manufacturer.