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## Product Data Sheet

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**PRODUCT #:** N8687

# ***FINE LINE 40***

Aqueous Developer Concentrate

### ***DESCRIPTION:***

A one part concentrate (40% potassium carbonate) formulated to develop fully aqueous dry film photo resists. ***FINE LINE 40*** is formulated especially for use in areas with hard water, inhibiting the formation of insoluble calcium compounds. It is economical to use and easy to handle, eliminating the need to weigh and dissolve powdered materials. ***FINE LINE 40*** contains a unique blend of ingredients to enhance loading capacity of the solution and help keep the equipment clean. These special ingredients help ensure straight sidewalls and will help clean the "foot" of the underdeveloped polymer. All of these features result in greater productivity and less down time. ***FINE LINE 40*** also works well for developing aqueous photoimageable solder masks, or for any other situation where carbonate is used.

### ***BENEFITS:***

- Inhibits formation of hard water scale
- Easy to use liquid concentrate
- Buffering agents to maintain pH
- Cleaning agents to reduce maintenance time
- Develop "foot" completely to insure straight sidewalls

### ***SPECIFICATIONS:***

**Density:** 1.46 gm/ml, 12.1 lbs./gal.  
**Flash Point (TCC):** None  
**Shelf life:** Indefinite

### ***INSTRUCTIONS:***

***FINE LINE 40*** should be diluted to 1.5 – 1.8% by volume, which will give 0.85 – 1.0% carbonate by weight. Follow the photoresist manufacturer's recommendation for carbonate concentration of the developer solution and temperature, normally 75°-90° F. Analyze new solution for concentration according to analysis on reverse side.

### **Developer Makeup**

For 0.85% potassium carbonate: Volume of ***FINE LINE 40*** = Sump Size (gal) X 0.015  
For 1.0% potassium carbonate: Volume of ***FINE LINE 40*** = Sump Size (gal) X 0.018

Replenishment can be controlled by pH or by panel count. The set point for pH replenishment is typically between pH 10.6-10.7, or as specified by the photoresist manufacturer. Monitor the break point, and adjust the conveyer speed to permit clean development at approximately 50% of the distance through the developing chamber. If the break point is past 50% of the chamber, reduce conveyor speed, raise the pH set point of controller, or increase the volume of replenishment solution added.

