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Product Data Sheet

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PRODUCT #: N8649

DX-45 NH

Aqueous Developer Concentrate

DESCRIPTION: A liquid 45% potassium carbonate concentrate formulated to develop fully aqueous dry film photoresists and photoimageable solder masks. ***DX-45 NH*** contains a unique blend of ingredients to ensure straight sidewalls and will help clean the "foot" of underdeveloped polymer. These same ingredients help keep the equipment clean, and will result in greater productivity and less down time.

BENEFITS:

- **Produces finer lines and spaces than generic potassium carbonate developers**
- **Cleaning agent to keep equipment cleaner and reduce maintenance time**
- **Effective on all photoresists and solder masks**
- **Contains no additional hydroxide**

SPECIFICATIONS:

Density:	1.5 gm/ml, 12.5 lbs./gal.
Flash Point (TCC):	None
Shelf life:	Indefinite
pH @ 1%:	11.5

INSTRUCTIONS:

DX-45 NH should be diluted to 0.85 - 1% by volume to get 0.85 - 1.0% by weight carbonate concentration. Follow the photoresist manufacturer's recommendation for carbonate concentration of the developer solution, usually 0.85-1% carbonate by weight, and temperature, normally 80°-95°F. Analyze new solution for concentration according to analysis on reverse side.

Developer Makeup

For 1.0% potassium carbonate: Volume of ***DX-45 NH*** = Sump Size (gal) X 0.015

Replenishment can be controlled by pH or by panel count. The set point for pH replenishment is typically between pH 10.7 -10.8, or as specified by the photoresist manufacturer. Monitor the break point, and adjust the conveyor speed to permit clean development at approximately 50% of the chamber. If the break point is past 50% of the chamber, reduce conveyor speed, increase the pH set point of controller, or increase the volume of replenishment added. Add 4 - 7 ml of ***ANTIFOAM BB*** per gallon of developer solution at makeup and again as needed.

Periodic cleaning should be done using a quality equipment cleaner such as ***TIDYLINE EQ-100*** or ***SUMP DOCTOR*** for photoresist developers, or ***CITRISUMP*** for solder mask developers.

Thorough rinsing is essential to the quality of the developed circuit. A warm water rinse will help remove developer and resist residues. The length of the rinse chamber should be at least half as long as the developing chamber to allow for sufficient rinsing. Follow the photoresists manufacturer's recommendations for using hard or acidified rinse water.

CAUTIONS: Use good chemical handling practices when handling this product. In case of contact with eyes, flush immediately with water and obtain medical attention. In case of contact with skin, wash with soap and water. Refer to Material Safety Data Sheet for further information.

DISPOSAL: Neutralize and dispose of in accordance with all local, state and federal regulations.

ANALYSIS:

Equipment required:	10 ml pipette 50 ml burette 400 ml beaker pH meter (optional)
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Reagents required:	0.1N Hydrochloric acid Methyl Orange indicator, 1.0%
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Procedure:

1. Pipette 10 ml of developer solution into a 400 ml beaker and add 150 ml of distilled water.
2. Add 1 ml of Methyl Orange indicator.
3. Titrate with 0.1N Hydrochloric acid to pink-orange end point. The end point is reached when one drop of titrant no longer contributes any pink coloration.

OR

Titrate with 0.1N Hydrochloric acid, using a pH meter, to a pH end point of 4.

Calculation: $\text{mls of HCl} \times \text{N of HCl} \times 0.74 = \% \text{ Potassium Carbonate}$

The above analysis is valid for working solutions only. An analysis for the concentrated product is available upon request.

This product should be used only for its intended purpose. The information stated above is based on our laboratory tests and experience, and is accurate to the best of our knowledge. Since actual use is beyond our control, the recommendations or suggestions are made without warranty, expressed or implied.