

# E-Line pH

## REFINED ELECTRONIC GRADE SULFAMIC ACID, 99.9% MIN.

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E-Line pH is a refined, ultra high purity sulfamic acid for use in optical media applications. A member of DisChem's E-Form family of electronic grade electroforming chemistries, E-Line pH allows for pH reduction in electroforming solutions without introduction of contaminants. E-Line pH's minimum guaranteed purity of 99.9 % insures against the addition of iron, lead, zinc and other harmful contaminants which can contribute to increased internal stress of deposit, deposit roughness, increased grain size, and bath poisoning by ammonium ion. Additionally, E-Line pH is free-flowing and non-hygroscopic for easy handling and safe storage.

### NOTES ON USE AND HANDLING

E-Line pH is highly water soluble and may be added directly to the plating solution in its crystalline form. Always make additions to the electroforming dummy compartment or filter station to protect against deposit roughness. E-Line pH may be pre-dissolved in water for handling purposes. As with any sulfamic acid, never pre-dissolve more than 12 hours prior to use, as naturally occurring hydrolysis may cause the production of harmful ammonium ion.

### SPECIFICATIONS

Chemical Name.....Sulfamic Acid  
Formula.....H<sub>3</sub>NO<sub>3</sub>S  
Molecular Weight.....91.10  
Specific Gravity.....2.216  
Minimum Guaranteed Purity.....99.9%  
Solubility in Water.....17.5% at 20°C  
Grain Size.....Fine, Crystalline

Impurities By Weight (0.01% = 1 ppm):

	<i>Max Limit</i>	<i>Typical Assay</i>
Ammonium Ion (NH <sub>3</sub> <sup>+</sup> )...	0.02%	< 0.02%
Moisture (H <sub>2</sub> O).....	0.02%	< 0.02%
Chloride (Cl <sup>-</sup> ).....	Not Detected	Not Detected
Sulfate (SO <sub>4</sub> <sup>2-</sup> ).....	0.02%	< 0.01%
Cadmium (Cd).....	0.0002%	Not Detected
Chromium (Cr).....	0.0002%	Not Detected
Copper(Cu).....	0.0003%	Not Detected
Iron (Fe).....	0.0005%	< 0.0001%
Lead (Pb).....	0.0001%	< 0.0001%
Zinc (Zn).....	0.0003%	Not Detected

### PRODUCT AVAILABILITY

E-Line pH is provided in 50 lb. (22.7 Kg.) Polyethylene bag - lined pails.

Part Number (P/N): EPH

### PRECAUTIONARY NOTES

Read the MSDS before handling this product. Sulfamic acid is highly corrosive when wet.

**PRODUCT / ORDERING INFORMATION:****United States:**

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**MANUFACTURERS STATEMENT:**

The data contained in this bulletin is believed to be true and accurate. Optimum results will be obtained when using the product within the recommended parameters. As final use of this product is beyond the control of the manufacturer, we assume no responsibility for misuse of this product, or for use which may infringe upon third party patents.

**DisChem MISSION STATEMENT**

DisChem is dedicated to serving the needs of the microlithography industry through innovative solutions for success. We provide the highest quality products and services available, unmatched cost per quality.

**DisChem OPTICAL MEDIA PRODUCTS:**

- ◆ **E-FORM Electronic Grade Sulfamate Nickel Concentrate (180 g/L)**
- ◆ **E-Line pH High Purity Sulfamic Acid**
- ◆ **E-eliminate Pit Optical Media Wetting Agent, 100% photoresist compatible formaldehyde free.**
- ◆ **Boric Acid, Technical Grade**
- ◆ **DisChem Analytical Service**

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