

### Description

The 418 *Positive Developer* solution is used for removing exposed resist during the positive photofabrication process.

### Benefits and Features

- **Dissolves exposed photoresist**
- **Concentrated formulation—dilute one part developer in ten parts water**

### Usage Parameters

<i>Properties</i>	<i>Value</i>
Shelf Life	5 y

### Temperature Ranges

<i>Properties</i>	<i>Value</i>
Storage Temperature Limits <sup>a)</sup>	-16 to 27 °C [60 to 80 °F]

a) Cool, dry, and well ventilated area recommended.

### Chemical Component

<b>Name</b>	<b>CAS Number</b>
Sodium hydroxide	1310-73-2

### Properties

<i>Physical Property</i>	<i>Value</i>
Appearance	Clear liquid
Odor	None
Solubility in Water	Fully miscible
Density @25 °C [77 °F]	1.1 g/mL
Boiling Point	≥100 °C [≥212 °F]
pH	14
Vapor Pressure @20 °C [68 °F]	0.2 kPa [1.5 mmHg]

### Health, Safety, and Environmental Awareness

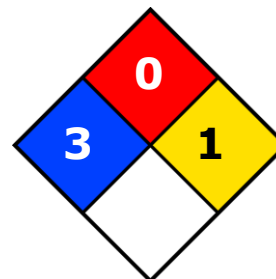
Please see the 418 **Safety Data Sheet** (SDS) for more details on transportation, storage, handling and other security guidelines.

**Health and Safety:** Do not breathe vapors/mists. Wear protective gloves/clothing/eye protection. Wash hands thoroughly after handling.

## HMIS® RATING

<b>HEALTH:</b>	<b>* 3</b>
<b>FLAMMABILITY:</b>	<b>0</b>
<b>PHYSICAL HAZARD:</b>	<b>1</b>
<b>PERSONAL PROTECTION:</b>	

## NFPA® 704 CODES



*Approximate HMIS and NFPA Risk Ratings Legend:*

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

## Application Instructions

Follow the procedure below for best results. If further directions for etching or making a printed circuit board (PCB), consult the photofabrication process guide available free from your dealer.

1. Dilute one part positive developer in ten parts water.
2. Fully immerse copper board in solution.
3. (Optional) Agitate until etching action is complete.

### To speed up etching

- Warm the positive developer solution to 40 °C [104 °F].

**ATTENTION!** Use only glass or plastic containers.

## Packaging and Supporting Products

<i>Cat. No.</i>	<i>Packaging</i>	<i>Net Volume</i>	<i>Net Weight</i>	<i>Packaging Weight</i>
<b>418-500ML</b>	Bottle	475 mL 1 pt	522 g 1.15 lb	6 kg <sup>a)</sup> 13.2 lb <sup>a)</sup>

a) Case pack of 10

### Related Products and Etching Kits

- *Foam Brush:* Cat. No. 416-S
- *Economy Etching Kit:* Cat. No. 416-ES
- *Photofabrication Kit:* Cat. No. 416-K
- *Professional Etching Kit:* Cat. No. 416-E



ISO 9001 Registered Quality System.  
Burlington, Ontario, Canada QMI File # 004008

# Positive Developer 418 Technical Data Sheet

418-Liquid

## Technical Support

Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at [www.mgchemicals.com](http://www.mgchemicals.com).

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## Warranty

*M.G. Chemicals Ltd.* warrants this product for 12 months from the date of purchase by the end user. *M.G. Chemicals Ltd.* makes no claims as to shelf life of this product for the warranty. The liability of *M.G. Chemicals Ltd.* whether based on its warranty, contracts, or otherwise shall in no case include incidental or consequential damage.

## Disclaimer

This information is believed to be accurate. It is intended for professional end users having the skills to evaluate and use the data properly. *M.G. Chemicals Ltd.* does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.