

GaP1 Gallium Phosphide Etchant for LEDs

Union Etchant International's (UEI) premium GaP1 Gallium Phosphide etchant is used for light emitting diodes (LEDs) and matrix arrays with dielectric isolation. It is an ideal etchant for fabricating the mesa structures required for efficient LED and for separating the LED to generate alpha numeric displays. GaP1 also removes surface damage from mechanically polished p-type and n-type gallium phosphide.

The formulation of UEI's GaP1 Gallium Phosphide Etchant offers many advantageous features and benefits.

Ensures maximum production and quality control: GaP1 is designed to give you maximum control during the production process because it:

- **Does not crystallize:** The GaP1 etching solution is amber and does not crystallize at room temperature, which enables your production staff to more easily observe the etching process. This added control ensures the quality manufacture of devices that require precision etched surface layers with decreased leakage current.
- **Promotes more efficient light yield:** GaP1 polishes a variety of crystallographic planes of LED material, enabling you to control the LED texture. This control increases light yield by as much as 100 percent over many other formulations on the market.
- **Consistent and controllable:** GaP1 contains a carefully balanced oxidation-reduction chemical that is stable and has a suitable pH range.

Features

- Ensures maximum production and quality control
 - No crystallization at room temperature
 - Promotes more efficient light yield
 - Consistent and controllable

GaP1 Etchant Properties

Substrate and Crystal Plane	Etch Rates at 80 degrees C in microns/hr	Surface
Gallium (111), n-type	115	smooth, textured
Phosphide (111), n-type	260 at 95 degrees C	smooth, polished
Gallium (111), p-type	115	smooth, textured
Phosphide (111), p-type	210	smooth, polished
Gallium (100), n- and p-type	210	smooth, polished
Phosphide (100), n- and p-type	210	smooth, polished

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GaP1 is compatible with a wide variety of materials including:

SiO ₂ (slight –minimal attack)	Platinum
Ti (slight –minimal attack)	
Palladium	KMER photoresist
Gold	Hunt's Waycoat negative resist
Chrome	Apiezon W Wax

About Union Etchants International

UEI manufactures stock and custom-formulated iodine-based etching solutions at a competitive cost. All UEI chemicals are processed with the highest quality materials with the consistency and repeatability necessary for the most critical processes. In addition, UEI uses a high-purity water system to formulate its liquid products.

UEI's products are batch controlled and are shipped in various size packages to suit customer requirements. All packages are UN approved and certified.

UEI stock products are ready-to-use and include:

- GaP1 Gallium Phosphide Etchant (liquid form)
- AU1 Gold Conductor Etchant (liquid or powder form)
- GOLDOUT™ (powder form)
- CR1A Chrome Etchant (liquid form)

For more information about UEI and UEI products, call 781-935-8878 or visit www.unionetchants.com.



UEI's GaP1 Etchant



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