

# MicroPrime HP Primer Adhesion Promoter

## TECHNICAL DATA SHEET

### Product description

MicroPrime HP Primer is a highly purified grade of hexamethyldisilazane (HMDS) produced for semiconductor process applications. Shin-Etsu's adhesion promoters are used to enhance the bonding of photoresist to a silicon dioxide surface.

### Product characteristics

- Shin-Etsu MicroSi's MicroPrime™ HP Primer adhesion promoter readily react with the substrate material removing water and reducing surface energy.
- The resulting water repellent hydrophobic interface prevents etchants from undercutting the photoresist.

### Mechanism

- MicroPrime HP Primer reacts readily with silicon oxide surfaces removing adsorbed water and reducing surface silanols, thus preventing future adsorption of water and other polar materials. During this process, small amounts of ammonia are liberated.
- Photoresists wet HMDS-treated surfaces uniformly. The developers and etchants used in subsequent steps are unable to penetrate the HMDS treated SiO<sub>2</sub>/resist interface. This prevents lifting and minimizes undercutting of the resist.

### General properties

Attributes	Typical Values
Molecular Weight	161.4
Density, 25°C	0.769
Boiling Point	126°C
Flash Point	10°C
Refractive Index	1.4055
UV Absorption max (270nm)	0.25

### Packages



### Reaction

### Application

MicroPrime HP Primer can be applied to oxide substrates by several techniques, including vapor prime, spinning and spraying. Environmentally stable primed substrates with uniform coverage are obtained by treatment in vapor deposition tracks and ovens (Typical application temperatures are from 100-150°C). Vapor prime application offers rapid and uniform reproducible priming of substrates with a minimum quantity of MicroPrime HP Primer.

Spinning is also a common form of application. A small amount of MicroPrime HP Primer is applied neat to a wafer spun at 3000-5000 rpm. This is followed by bake at 100-150 °C.

Packaging Description	HP Primer
Glass Bottles	pint, quart, gallon
Now Pak®* containers	various sizes
SS Cans	2 and 5 gallon
Drums	55 gallon
Storage Conditions	60°F to 85°F

# MicroPrime HP Primer Adhesion Promoter

## Specification Data

Purity, Min	≥99.7 %
Residue , Max	≤ 3.0 ppm
Chloride	≤ 0.5 ppm

## Typical Elemental Impurities

Ag	Silver	< 5.0 ppb
Al	Aluminum	< 5.0 ppb
As	Arsenic	< 5.0 ppb
Ca	Calcium	< 5.0 ppb
Cr	Chromium	< 5.0 ppb
Cu	Copper	< 5.0 ppb
Fe	Iron	< 5.0 ppb
K	Potassium	< 5.0 ppb
Mg	Magnesium	< 5.0 ppb
Mn	Manganese	< 5.0 ppb
Na	Sodium	< 5.0 ppb
Ni	Nickel	< 5.0 ppb
Pb	Lead	< 5.0 ppb
Sb	Antimony	< 10.0 ppb
Zn	Zinc	< 5.0 ppb

## Cautions in Handling

MicroPrime HP Primer can cause severe burns to eyes and irritation of the skin. In case of contact with the eyes, immediately flush with plenty of water for at least 15 minutes and get prompt medical attention. In case of skin contact, flush with plenty of water. The material should be handled in areas with adequate ventilation to avoid excessive exposure to solvent vapors.

MicroPrime HP Primer is not for food or drug use.

MicroPrime HP Primer is a flammable liquid. Fires may be extinguished with CO2 or foam.

Please refer to Material Safety Data Sheets prior to using MicroPrime HP Primer.

**Please contact:**  
**Shin-Etsu MicroSi**  
**1.888.642.7674**  
**[www.microsi.com](http://www.microsi.com)**



## Caution

- ◆ Follow the precautions in the material safety data sheet and technical references.
- ◆ HP Primer is for industrial use only.
- ◆ The data in the this document does not include all specifications. Purchasers must conduct tests of their own before putting the product to practical use to verify its compliance, with their intentions for its employment.  
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