

Specialty Pad Etchants

•FUJIFILM Specialty pad etchants are used to etch deposited pyrolytic and sputtered final passivation glasses in order to expose semiconductor bonding pads for wire bonding.

• Pad Etches are particularly suited for etching unusually thick or dense passivation layers, and are typically used at, or about ambient conditions.

•FUJIFILM Pad etchants may be used in polypropylene, or polyethylene containers.

• Conventional pad etchants, such as Pad Etch, are saturated with aluminum acetate salt to slow attack on aluminum metal. Under standard operating conditions, ordinary evaporation of the etchant can result in the deposition of salt residue on wafers and equipment.

• More recent evolutions in pad etchants have replaced the aluminum acetate with an organic additive to minimize the aggressiveness on aluminum surfaces.

• Temperature control is recommended for best results. Elevating etch bath temperature to increase etch rate causes rapid loss of volatile species. One such volatile species present in many pad etches is acetic acid.

• 16:3:3 Pad Etch w/OHS does not contain the acetic acid and therefore is suitable for use at elevated temperatures.

• A Certificate of Analysis is provided with every lot and includes assay, trace metal analysis, and particle count analysis at 0.5 μ and 1.0 μ .

• Formulations are also available with OHS™ (FUJIFILM Surfactant) to improve surface wetting and to promote etch uniformity if required.

16:3:3 Pad Etch w/ OHS is an etchant for deposited pyrolytic and sputtered passivation glasses that contains an organic additive to minimize aggressiveness on aluminum bonding pads, which may cause staining.

• The formula of 16:3:3 also has a low dielectric constant which will also aid in reducing staining.

• 16:3:3 ad Etch is also available with OHS to promote uniform etching across the wafer.acetic acid it is suitable for use at elevated temperatures.

• Typical etch rates for passivation layers are 4,200 - 4,700Å per minute at 21°C.

16:3:3 Pad Etch w/OHS 777 Etch

<i>Product</i>	<i>Grade</i>	<i>Etch Rate (21°C)</i>
16:3:3 Pad Etch	CPG	4,200-4,700Å/min.
777 Etch	CPG	4,300-4,900Å/min.

NOTE: Etch rates are on 7% phosphorous doped passivation oxide.

Specialty Pad Etchants *con't*

FUJIFILM 777 Etch is a Certified Particle Grade Specialty Etchant formulated without aluminum acetate.

- It contains an organic additive to help minimize aggressiveness on aluminum substrates.
- Since this formula contains no free fluoride ions, as in most pad etchants, it cuts down on the staining problem because there is minimal interaction with the aluminum.
- All 777 Etch components are water rinsable.
- FUJIFILM 777 Etch is generally used at room temperature (21° - 25°C).
- Typical etch rates for passivation layers range from 4,300 - 4,900 Å per minute at 21°C.
- Processing at elevated temperatures can result in loss of volatile acetic acid causing etch rate variation. As a result, 777 Etch is not recommended for use at elevated temperatures.
- A typical process is to predetermine time to clear bonding pads at the etch bath temperature to be used. A 15 to 20 second over etch usually ensures pad clearing without staining. Follow with a thorough rinse using deionized water.