ACT® 935UP

ETCH RESIDUE REMOVER AND POSITIVE PHOTO_RESIST REMOVER

ACT® 935UP etch residue remover and positive photoresist remover is a highly effective Hydroxylamine-containing etch residue and positive resist stripper. This product has gained acceptance in a wide range of applications throughout the semiconductor industry.

BENEFITS
Rapid removal of stubborn via and metal etch residue, particularly those with high inorganic content
Operating conditions: 70° to 80°C for 5 to 30 minutes
Completely water-soluble after stripping
Low metal attack under normal processing conditions
Low trace metal content
Very effective in lowering wafer surface sodium contamination

TYPICAL PHYSICAL PROPERTIES
Specific Gravity @ 25°C: 1.069
Boiling Point: 120°C
Freezing Point: < -20°C
Flash Point (Open Cup): > 110°C
Flash Point (Closed Cup): > 110°C
Viscosity @ 25°C: 12.1 cSt
pH (5% solution): 11
Freezing Point: < -20°C

MATERIAL COMPATIBILITY
This product is compatible with the following materials used in the semiconductor industry*: High Density Polyethylene Polyethylene UHMW Polypropylene PFA Kynar Film Teflon PTFE 316L Stainless Steel

* Test conditions: 10 days at 25°C and 80°C
For information on other materials, contact your Versum Materials ACT sales representative.
INSTRUCTIONS FOR USE

ACT 93SUP
70°C to 80°C
5 to 30 minutes

either

DI water rinse

Dry

or

Solvent rinse
25°C

DI water rinse

ETCH RATES

Etch rates on the following substrates:

<table>
<thead>
<tr>
<th>TYPICAL MATERIALS</th>
<th>METAL AND OXIDE ETCH RATES (Å/MIN) @ 75°C**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al</td>
<td>10</td>
</tr>
<tr>
<td>Ti</td>
<td>19</td>
</tr>
<tr>
<td>TiN</td>
<td>2</td>
</tr>
<tr>
<td>TiW</td>
<td>4</td>
</tr>
<tr>
<td>W</td>
<td>2</td>
</tr>
<tr>
<td>Ta</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>FSG</td>
<td>1</td>
</tr>
<tr>
<td>TOx</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>TEOS</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

**Metal thickness measurements were taken with a ResMap 273 four-point probe and a Nanospec AFT 010-0180 film thickness measurement system for oxide films.

BEFORE STRIP

AFTER STRIP

TYPICAL PERFORMANCE RESULTS
AME ETCH, ASHED

Process conditions:
75°C, 10 minutes
TYPICAL PERFORMANCE RESULTS

SPRAY PROCESS: SEMITOOL SST—TIN/AL:CU/TIN/TI/TEOS, ASHED 0.5µM METAL LINES

Process conditions:
75°C, 20 minutes

REMOVAL OF BULK RESIST:
AME P5000 ETCH, PR/PEOX/SOG/PEOX/TIN/AL-Si-CU, 1µM VIAS

Process conditions:
75°C, 30 minutes
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