HD MicroSystems produces a range of solvent based ancillary products for its line of negative tone photosensitive polyimides. The HD-4100 Series are the premier photosensitive polyimides especially developed for high-performance applications in wafer fab and packaging. These products are engineered to be readily compatible with various thin film metalization schemes, high lead or non-lead solders, various plating solutions and underfill materials. HD-4100 Series polyimides have a high Tg and high elongation. Like most polyimides, HD-4100 Series products are not prone to oxidation and are resistant to most wet and dry chemical processes practiced in wafer fabrication.

Product Codes
A variety of different product codes comprise the HD-4100 series product line. These products all share the same polyimide platform and resolution capability. Please consult the HD-4100 Series Product Bulletin or the HD MicroSystems Production Selector Guide for the best product code for your application.

Developer
The standard developer for HD-4100 series products is PA-401D, which is based on cyclopentanone [CPO]. PA-401D offers good solubility and an evenly controlled develop rate. It is also the recommended edge bead remover for all HD-4100 series products. Faster developing can be achieved with PA-400D. The major solvent component for PA-400D is gamma butyrolactone [GBL]. The process window for this developer is not as wide PA-401D for some applications. These products should be considered if faster throughput is desired or if an HD-4000 polyimide product is being processed on a coater track already plumbed with one of these developer types. The develop rate of PA-400D is 1.25X compared with PA-401D.

Rinse
The preferred rinse for HD-4000 series products is PA-400R and based on PGMEA.

Edge Bead Remover & Backside Rinse
PA-401D is the recommended edge bead remover [EBR] and backside rinse all for HD-4100 products. In addition, NMP or GBL based solvents such as PA-400D can also be used. However both these solvents have a high boiling point and do not readily spin-dry on standard wafer coater tracks. This often results in a residue on the backside of coated wafers and/or slight crazing of the uncured polyimide layer at wafer edge.

Availability
HD MicroSystems produces all the ancillaries referenced in this bulletin in a variety of lot sizes and in 4 liter, 20 liter and 200 liter container sizes. For further information, please contact your area HD MicroSystems Technical Representative or distributor.
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<th>United States</th>
<th>Japan</th>
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<td><strong>HD MicroSystems</strong>&lt;br&gt;250 Cheesequake Road&lt;br&gt;Parlin, NJ 08859-1241&lt;br&gt;800-346-5656 ext. 13, 14 (Phone)&lt;br&gt;732-613-2502 (Fax)&lt;br&gt;10080 North Wolfe Road, SW3-200&lt;br&gt;Cupertino, CA 95014&lt;br&gt;800-346-5656 ext. 11 (Phone)&lt;br&gt;408-996-0508 (Fax)</td>
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<td><strong>HD MicroSystems GmbH</strong>&lt;br&gt;Hugenottenallee 173-175&lt;br&gt;63263 Neu-Isenburg&lt;br&gt;Germany&lt;br&gt;49-6102-18-1823 (Phone)&lt;br&gt;49-6102-18-1824 (Fax)</td>
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**Caution:** Do not use in medical applications involving permanent implantation in the human body.