JSR Micro’s NFR series of photoresists are chemically amplified Novalak resin-based, negative-tone resists. A dyed version creates re-entrant sidewall profiles designed for lift off applications. A non-dyed version is also available to create negative images with straight wall profiles. All NFR series resists have been optimized for I-line exposure and are effective for broadband exposure tools. One developer chemistry, PD523AD, is formulated to work with all the NFR series resists.

**KEY FEATURES**

- Fast and consistent processing with fewer defects or implant errors
- Chemically amplified to generate fully cross-linked Novalak resin with minimal exposure dose required
- Excellent etch properties for implant and electroplating processes
- Broad depth of focus, up to 2µm
- High aspect ratio, up to 5:1

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**Typical Processing Parameters**

1. **SUBSTRATE PREPARATION**
2. **PRIME**
3. **COAT**
4. **PREBAKE 90°C @ 90 SECONDS**
5. **EXPOSE**
6. **POST EXPOSE BAKE 90°C @ 90 SECONDS**
7. **DEVELOP IN PD523AD 60 SECONDS @ ROOM TEMPERATURE**
8. **QUICK DI WATER RINSE**
9. **METAL DEPOSITION**
10. **RESIST STRIP IN NMP BASED CHEMISTRIES**
JSR NFR Dyed Photoresists

Product Summary

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>VISCOSITY</th>
<th>MINIMUM CRITICAL DIMENSIONS</th>
<th>ENERGY DOSE</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFR 016 D2</td>
<td>55 cp</td>
<td>0.7 µm at 3 µm F.T.</td>
<td>100 mJ/s</td>
<td>1 Gallon Glass or NOWPak®</td>
</tr>
<tr>
<td>NFR 111D2H</td>
<td>5 cp</td>
<td>0.4 µm at ~ 1 µm F.T.</td>
<td>200 mJ/s</td>
<td>1 Gallon Glass or NOWPak®</td>
</tr>
<tr>
<td>NFR 111D2H</td>
<td>7 cp</td>
<td>0.4 µm at ~ 1 µm F.T.</td>
<td>200 mJ/s</td>
<td>1 Gallon Glass or NOWPak®</td>
</tr>
</tbody>
</table>

**DEVELOPER**

PD523AD
Developer

4 x 1 Gallon, Drums or Totes

*Energy doses are approximate values. NOWPak® is a registered trademark of ATMI, Inc.

Spin speeds chart details the relationship between spin speed and resist thickness for a 6-inch wafer.

Film thickness can vary slightly due to process, equipment, and temperature variations.

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