Coating Uniformity & Litho Performance of AZ® 15nXT (450cSt) @ FT = 15, 20, 35 μm
Coat Parameters on 200 mm Wafers
AZ® 15nXT (450cSt)

### Suss MicroTec ACS 300 Plus: Coater <no EBR 20 um, 15nXT-N2 200 mm>

<table>
<thead>
<tr>
<th>Step</th>
<th>Time</th>
<th>Speed</th>
<th>Accel</th>
<th>Function</th>
<th>Exhaust (l/min)</th>
<th>Exhaust +/- (l/min)</th>
<th>Coverplate (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>100</td>
<td>2000</td>
<td></td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>30</td>
<td>2000</td>
<td>Dispense resist</td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>300</td>
<td>2000</td>
<td>Resist expanding on wafer</td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
<td>1600</td>
<td>2000</td>
<td>Quick Spin</td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>xxx</td>
<td>2000</td>
<td>Main Spin/Backside Rinse</td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
<td>400</td>
<td>2000</td>
<td>Backside Rinse</td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
<td>400</td>
<td>2000</td>
<td></td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>8</td>
<td>0.5</td>
<td>1300</td>
<td>4000</td>
<td></td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>0</td>
<td>4000</td>
<td></td>
<td>1500</td>
<td>300</td>
<td>140</td>
</tr>
</tbody>
</table>

### Suss MicroTec ACS 300 Plus: Baking Temperature 120 °C/3min

<table>
<thead>
<tr>
<th>Step</th>
<th>Time</th>
<th>Proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>5.1</td>
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<tr>
<td>2</td>
<td>20</td>
<td>1.5</td>
</tr>
<tr>
<td>3</td>
<td>60</td>
<td>0.1</td>
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<tr>
<td>4</td>
<td>120</td>
<td>0</td>
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AZ® 15nXT (450cSt), Lot# 2518-134
Spin Curve On 200 mm Si Wafers

Suss ACS 300 Plus coat and Bake
Hand dispense on 200 mm silicon
Spin 1000-3000 rpm for 15 sec
SB: 120°C/ 3 minutes
AZ® 15nXT (450cSt) Wafer Uniformity Maps (3mm Edge Exclusion)

1000 rpm 17.8μm/4.49%RSD

1500 rpm 13.5μm/1.36%RSD

2000 rpm 10.8μm/1.49%RSD

2500 rpm 9.0μm/0.78%RSD

3000 rpm 7.8μm/0.70%RSD

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AZ® 15nXT (450cSt) Wafer Uniformity Maps (3mm Edge Exclusion)

1500 rpm 13.5μm/1.36%RSD

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AZ® 15nXT (450cSt), Edge-Bead Coating Study
200mm wafer
# Process Conditions

**Substrate:** Si and Cu wafer  
**Resist:** AZ® 15nXT (450cSt), 2518-134

**Process Condition:**
- **FT=15 μm by single coat (Cu)**: SB 120 °C/3 minutes
- **FT=20 mm by single coat (Cu)**: SB 120 °C/4 minutes
- **FT=35 mm by single coat (Si)**: SB 120 °C/5 minutes

**Exposure tool:** Suss (g-h-i-line); plating mask  
- **FT= 15 & 20 μm**  
  **Dose:** 1200, 1100, 1000, 900, 800
- **FT= 35 μm**  
  **Dose:** 1400, 1200, 1000, 800

**PEB:** 120 °C/1 min  
**Development:** AZ 300 MIF  
- **FT= 15 μm**  
  3x50 puddles
- **FT= 20 μm**  
  4x50 puddles
- **FT= 35 μm**  
  5x50 puddles
Resolution
Solid Line on Cu

FT = 15 µm
900 mJ/cm²

FT = 20 µm
1000 mJ/cm²

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Isolated Line on Cu

FT = 15 µm  
900 mJ/cm²

FT = 20 µm  
1000 mJ/cm²
Exposure latitude on Cu

FT = 15 µm
CD 10 µm

FT = 20 µm
CD 10 µm

- 800 mJ/cm²
- 900 mJ/cm²
- 1000 mJ/cm²
- 1100 mJ/cm²
- 1200 mJ/cm²

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FT = 20 µm  
CD 10 µm

SB:120°C/4 min  
Develop: 4x60

SB:120°C/4 min  
Develop: 4x50

SB:110 °C/4 min  
Develop:4x60

1000 mJ/cm²

1100 mJ/cm²

1200 mJ/cm²

1300 mJ/cm²

1400 mJ/cm²

➤ More converted profile with longer development time.

➤ Better profile and faster PS with lower SB temp.
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