Gas Plasma Reactor

Compact, Barrel Type, Low Temperature Ashing Device

**PR200/300/301**

<table>
<thead>
<tr>
<th>Model</th>
<th>PR200</th>
<th>PR300</th>
<th>PR301</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma mode</td>
<td>Direct plasma (DP)</td>
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</tr>
<tr>
<td>High frequency output</td>
<td>Max. 200W</td>
<td>Max. 300W (100W x 3 chambers)</td>
<td>Max. 300W</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>13.56MHz</td>
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<tr>
<td>Tuning method</td>
<td>Auto matching</td>
<td>Auto matching</td>
<td>Manual biaxial</td>
</tr>
<tr>
<td>Reaction chamber</td>
<td>Pyrex glass, ø100×160mm x 1 chamber</td>
<td>Pyrex glass, ø64×160mm×3 chambers</td>
<td>Pyrex glass, ø118×160mm x 1 chamber</td>
</tr>
<tr>
<td>Reaction gas</td>
<td>1 system (oxygen), flow meter control with dry air purge gas</td>
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</tr>
<tr>
<td>Control system</td>
<td>Manual leak valve</td>
<td>Auto pressure reduction, auto leak valve</td>
<td>Auto pressure reduction, auto leak valve</td>
</tr>
<tr>
<td>Piping material</td>
<td>Stainless steel, Teflon</td>
<td>Stainless steel, Teflon, Copper and Brass</td>
<td>Stainless steel, Teflon</td>
</tr>
<tr>
<td>External dimensions (W×D×H)</td>
<td>350 x 400 x 500mm</td>
<td>438 x 520 x 556mm</td>
<td>438 x 520 x 660mm</td>
</tr>
<tr>
<td>Weight</td>
<td>~25kg</td>
<td>~36kg</td>
<td>~34kg</td>
</tr>
<tr>
<td>Power source (50/60Hz)</td>
<td>AC115V</td>
<td>AC115 / AC220V</td>
<td>AC115 / AC220V</td>
</tr>
<tr>
<td>Optional accessories</td>
<td>Sample dish, vacuum pump</td>
<td>Sample dish, stand, shelf, vacuum pump</td>
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</tr>
</tbody>
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Wide range of application from ashing, etching, dry cleaning, etc.

### Features
- Isotropy barrel type
- Compact, space saving design
- Capable of removing coated organic matter
- Adjustable RF suitable for various applications
- Outstanding operability and safety
- Can be set for a wide range of output conditions to handle a variety of testing samples

### Applications
- Functionalization of the polymeric material surface improves adhesion
- Oxidation reaction generates functional groups -OH, >C=O, -COOH on the surface (very small amount of water and carbon dioxide will impact)
- In nitrogen plasma, a nitrogen atom is incorporated onto the surface, generates a functional group -NH₂
- Resist peeling
- Surface modification of materials (metals, polymers, films, ceramics, etc.)
- Asbestos pre-processing (ashing of membrane filter)
- Low-temperature ashing (polymer material, coal, food, etc.)
- PDMS chips bonding to glass and PDMS substrate
- Production of semiconductors and analysis work

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PR200/300/301

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Example application: asbestos analysis pre-processing

Collected to membrane filter  Deposited with acetone vapor

Phase-contrast microscope

SEM-EDS analysis

Piping System (PR300)

Control Panel

PR300, PR301

Chamber

PR200

1 chamber (ø100 x 160mm)

PR300

3 chambers (ø64 x 160mm)

Contamination free

PR301

1 chamber (ø118 x 160mm)

Interior

The gas plasma equipment has a wide range of applications from ashing, etching, dry cleaning, etc.

Accessories

Sample dish

Sample shelf for PR300

Sample shelf for PR301