The SiTec Monosilane Lab CVD Reactor (Laboratory Chemical Vapor Deposition Reactor) for quality assurance is a key equipment for qualitative and quantitative analysis of the gases used in the polysilicon production process. The Reactor is specifically used for quality assurance of SiH₄ [Monosilane] and other feeding materials used for polysilicon deposition.

The Lab CVD Reactor is designed as a comprehensive system in a cabinet, with integrated power supply, process gas distribution and control, integrated leakage gas sensors, etc. The power supply is located in a second cabinet. To ensure that no additional metallic contamination influences the quality of the test deposition, the cylindrical inner bell jar is made of electro polished stainless steel.

The purpose of the Monosilane Lab CVD Reactor is forming a quality gate for analyzing of SiH₄ for the monosilane industry and for monosilane based polysilicon production. The reactor runs in a short cycle time to achieve rapid analytical results and to release the monosilane gas as well as inputs for polysilicon production. Deviations from target values can be detected at a very early stage, which helps to avoid off-spec batches in the production process.

The unique Monosilane based Lab CVD Reactor comprises proven technology matching laboratory demands in advanced Polysilicon production. SiTec is the only provider of the Monosilane based Lab CVD Reactor worldwide.
Monosilane Lab CVD Reactor

Features and Benefits

- Easy to use and operation
- Training equipment for operators
- High degree of automation
- Complete Lab CVD Reactor system ready for operation
- Delivered with spare parts and consumable package for acceptance test
- Possibility to synthesize bulk analysis from monosilane for ultra trace analytics
- No problems with materials
- No toxic substances
- Commissioning support
- Technology Made in Germany

Technical Data

<table>
<thead>
<tr>
<th></th>
<th>Overall width</th>
<th>Overall height</th>
<th>Overall height with Socket</th>
<th>Total weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactor</td>
<td>800 mm</td>
<td>~2,260 mm</td>
<td>2,700 mm</td>
<td>650 kg</td>
</tr>
<tr>
<td>Power supply cabinet</td>
<td>1,600 mm</td>
<td>2,000 mm</td>
<td>2,200 mm</td>
<td>500 kg</td>
</tr>
</tbody>
</table>

Monosilane Lab CVD Reactor

- Operating pressure: 0.2 – 1.2 barg
- Deposition temperature: 600 – 900 °C
- Rod length: 2 x 200 mm
- Slim rod diameter: 6 x 6 mm – 8 x 8 mm
- Final rod diameter after deposition: ~ 18 mm
- Deposition rate: ~ 0.4 – 0.8 mm/h
- Consumption H₂: ~ 5 - 25 Nl/min
- Consumption SiH₄: ~ 6 – 50 g/h
- Deposition cycle time: ~ 12 h

Errors and omissions excepted. Changes possible at any time and without notice.