Overview
The SilcoNert® 2000 coating process results in a chemically protective barrier of amorphous silicon that is further functionalized to provide the most inert surface available (patent info at www.silcotek.com/IP). Applied via chemical vapor deposition (CVD), the SilcoNert 2000 process is ideal when trace-level testing accuracy (< parts-per-million) of sulfurs, mercury, ammonia, or other active compounds is imperative.

Key Applications and Benefits
• Non line-of-sight process; all holes and complex geometries will be coated
• Eliminate adsorption and retesting
• Obtain faster calibrations
• Gain full confidence in your analytical results

SilcoNert® 2000 Properties

<table>
<thead>
<tr>
<th>Coating Structure:</th>
<th>Functionalized hydrogenated amorphous silicon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposition Process:</td>
<td>Thermal chemical vapor deposition (not plasma-enhanced)</td>
</tr>
<tr>
<td>Maximum Temperature*:</td>
<td>Max for functionalization: 400°C (oxidative) 450°C (inert) Melting: 1410°C</td>
</tr>
<tr>
<td>Substrate:</td>
<td>Compatibility: Stainless steel, exotic alloys, ceramics, aluminum Size: Typical parts up to 80” (203 cm), contact us for larger jobs Geometry: Any shape, including complex geometries</td>
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<tr>
<td>Typical Thickness:</td>
<td>100 - 500 nm</td>
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<tr>
<td>Hydrophobicity (contact angle):</td>
<td>≥65°</td>
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<tr>
<td>Allowable pH Exposure:</td>
<td>0 - 8</td>
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</tbody>
</table>

*Contact technical service
CHEMICALLY COMPATIBLE
The functionalized silicon structure deposited by SilcoNert 2000 provides a highly inert barrier to analytes of interest.

NON-WETTING
SilcoNert 2000 doubles the hydrophobicity of stainless steel and is commonly specified in moisture analyzer applications.

INERT TO SULFURS
Tubing coated by SilcoNert 2000 provides nearly instant sample response, requiring no “priming” of the analytical system.

INERT TO MERCURY
SilcoNert 2000 provides sample components excellent stability for mercury samples, even after several weeks of storage.

INERT TO AMMONIA
Inertness enabled by SilcoNert 2000 permits 12x faster response than when using electropolished stainless steel.

HIGH-TEMPERATURE STABLE
Coatings produced by SilcoNert 2000 are robust and inert for use up to 450°C, far exceeding the limits of PTFE.

*SilcoNert®2000 refers to the SilcoNert®2000 process, which is a thermal chemical vapor deposition that we perform on your parts to have the properties identified above.

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