**Overview**

The Dursan® process deposits a chemically protective barrier of amorphous silicon, oxygen and carbon that is further functionalized to resist adsorption of corrosive, reactive, and otherwise unwanted molecules (patent info at www.silcotek.com/IP). Applied via chemical vapor deposition (CVD), the Dursan® process is required when both a robust and chemically inert surface are critical.

**Key Applications and Benefits**

- Achieve corrosive performance similar to exotic materials at a fraction of the price
- Increase system durability
- Improve instrument accuracy and response time
- Easy release and cleaning

**Dursan® Properties**

<table>
<thead>
<tr>
<th>Coating Structure:</th>
<th>Functionalized silica-like coating (a-SiO$_x$·CH$_y$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposition Process:</td>
<td>Thermal chemical vapor deposition (not plasma-enhanced)</td>
</tr>
</tbody>
</table>
| Maximum Temperature:*       | Max for functionalization: 450°C (oxidative) 500°C (inert)  
Melting: 1275°C |
| Substrate:                  | Stainless steel, exotic alloys, ceramics               |
| Size:                       | Typical parts up to 80” (203 cm), contact us for larger jobs. |
| Geometry:                   | Any shape, including complex geometries                |
| Typical Thickness:          | 400 - 1600 nm                                          |
| Hydrophobicity (contact angle): | ≥81°                                                      |
| Allowable pH Exposure:      | 0 - 14                                                  |

*Contact technical service*
**CHEMICAL COMPATIBILITY**
The silica-like structure provided by the Dursan process is a robust and inert barrier suitable for several process environments.

**HYDROPHOBICITY**
Coatings produced by the Dursan process are hydrophobic, non-stick, and easy to clean.

**CORROSION RESISTANCE**
Coating with the Dursan process can provide exotic alloy performance at a fraction of the price.

**TEMPERATURE STABILITY**
The Dursan process produces versatile properties that are stable at temperatures well above the limits of fluoropolymers.

**INERTNESS**
Flow paths coated with the Dursan process enable low parts-per-million sensitivity to sulfur compounds.

**DURABILITY**
The Dursan process (top row) doubles the wear resistance of 304 stainless steel and creates resistance to cracking and flaking, which plague PTFE (bottom row).

"Dursan® refers to the Dursan® process, which is a thermal chemical vapor deposition process that we perform to enable your parts to have the properties identified above.