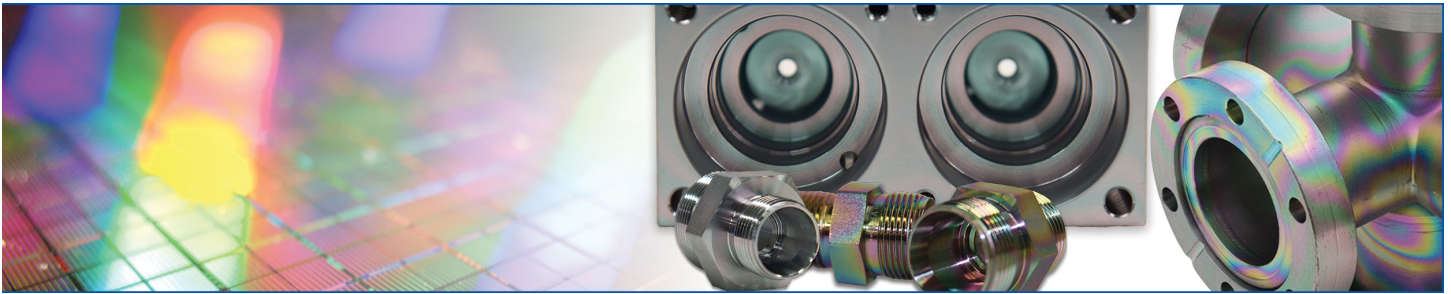


SilcoTek® Silicon CVD Coatings

Game-Changing Surface Technology for your Next-Generation Products



A complete material solution that improves production yields and your bottom line

As electronic devices get smaller and nodes continue to shrink, semiconductor manufacturers and equipment suppliers are faced with bigger challenges than ever. SilcoTek® silicon CVD coating technology offers a cost-effective solution to corrosion and contamination that increases system uptime, throughput, and overall product life.

What are SilcoTek® coatings?

SilcoTek's amorphous hydrogenated silicon (a-Si:H) coatings increase the corrosion resistance of stainless steel and other materials by providing a dense barrier to chemical attack. These coatings are thermally stable above 1000 °C, inert, and naturally hydrophobic.

• The ideal surface for manufacturing equipment



Our CVD coating process results in a robust coating that can be bent without damage, so even coated bellows or flex lines can be used without risk of particulate generation. SilcoTek® coatings do not compromise sealing performance.

• Easy to apply to complex parts



Parts with complex geometries or high aspect ratios are easily treated with no impact on tolerances or mechanical integrity, offering the most engineering-friendly surface enhancement process available. The CVD process is scalable, controlled, and reproducible from run to run.

• A cost-effective way to increase your bottom line



Silicon-coated stainless steel can provide the corrosion protection of exotic materials at a tenth of the price. Even better, a silicon-coated surface won't introduce troublesome metal ions into the process stream.

Applications

- **Etch:** eliminate ion contamination from corrosive gas streams
- **ALD:** enhance purity, reduce carryover, and fight corrosion
- **EPI:** fight corrosion and eliminate particulate generation
- **Ozone:** stabilize the flow path for better analytical performance
- **OLED:** improve overall system performance

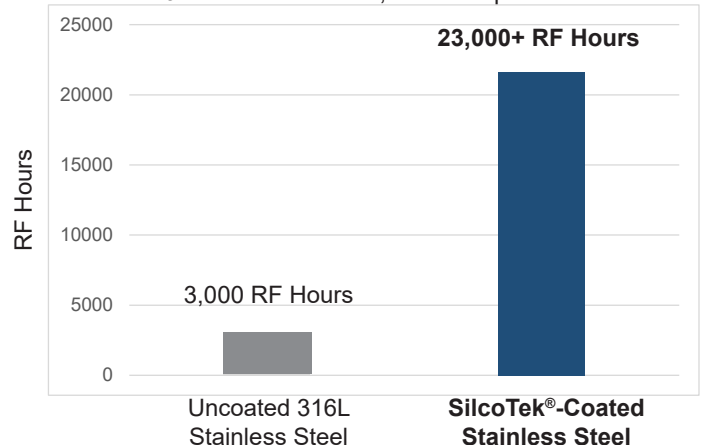
The ultimate solution for high purity.

Partnering with SilcoTek® gives your customers a product that lasts longer and outperforms your competitors' systems.

- Eliminate metal ion contamination and increase uptime
- Increase system life by 5x or more
- Save thousands per part and do away with exotic alloys

Drastically Increase Equipment Life Cycles

6M HBr for 72 hours, room temperature

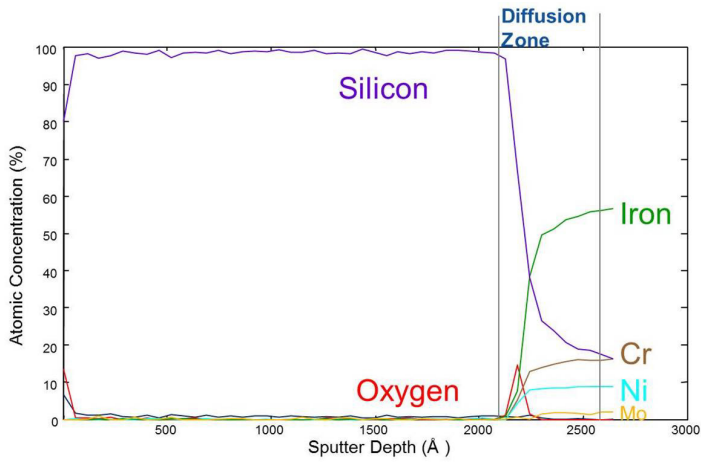


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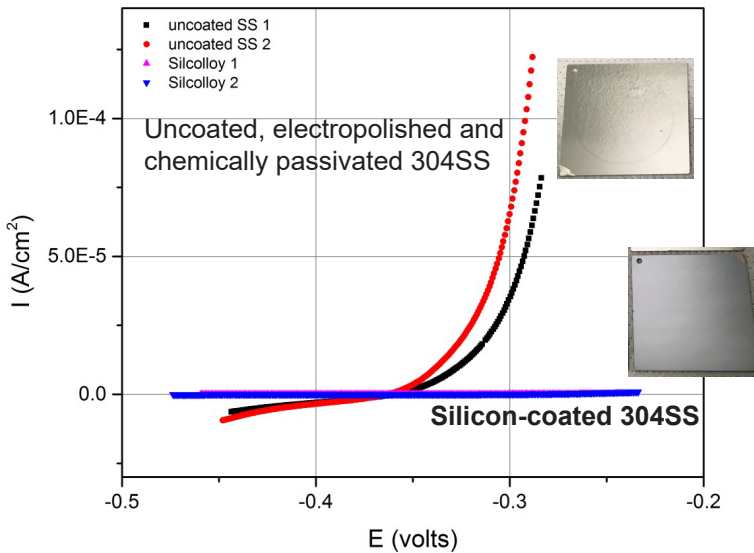
Performance Data and Benefits



SilcoTek® coatings are comprised of hydrogenated amorphous silicon (a-Si:H), enhancing the chemical inertness of stainless steel.

Element	Coating Contents
Aluminum	<20 ppm
Chromium	0 ppm
Iron	<100 ppm
Nickel	<10 ppm
SilcoTek® Silicon CVD Coating	99.98% purity

Laser ablation ICP-MS testing of samples directly from packaging with no additional surface preparation confirms a high-purity surface.



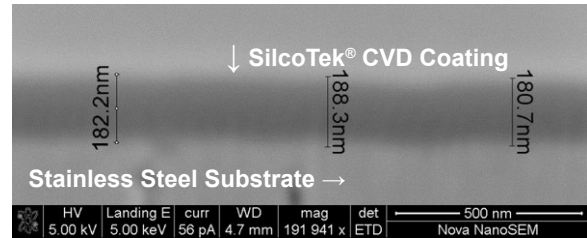
SilcoTek® silicon coatings are continuous and pinhole-free, outperforming electropolished and passivated stainless steel in corrosion testing.

How are SilcoTek's CVD coatings applied?

Our thermal, non-plasma chemical vapor deposition (CVD) process involves a low-temperature reaction between a reactive gas-phase raw material and the substrate to be coated.

Components are placed into vacuum chambers based on the quantity and their configuration. These chambers can be customized for pre-determined batch quantities of parts to produce very consistent coating results after each run.

The CVD process results in a molecularly-bonded layer of inert, hydrogenated amorphous silicon on the surface.



SilcoTek® CVD coatings are thin, flexible barriers that increase the lifetime of critical components in corrosive environments. The coatings are typically less than 2µm thick.

Changing the Game in Semiconductor Manufacturing

SilcoTek® silicon coatings allow semiconductor manufacturers to extend the limits of their existing tools, ultimately increasing product performance, output, and usable lifetime.

Contact us to discuss how we can help you create a next-generation product that changes the game for your customers.

Resources

Visit www.SilcoTek.com/learning-center for literature, data, and more.

How to Buy

Go to www.SilcoTek.com/ordering/quote-request for a custom quote or www.SilcoTek.com/buy-coated-products for stock items.

Contact SilcoTek

Find a global representative: www.SilcoTek.com/ordering/international

For customer or technical service: SilcoD@SilcoTek.com

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