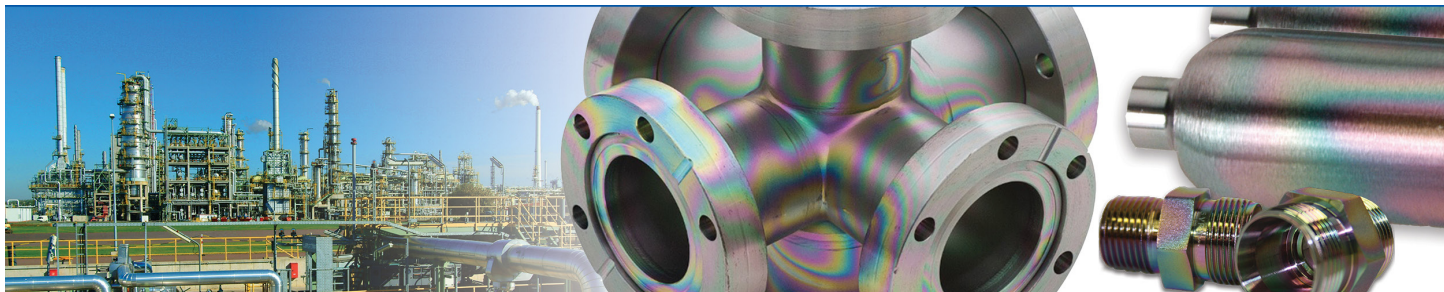


# SilcoTek® Corrosion Resistant CVD Coatings



**SilcoTek® CVD coatings provide super alloy corrosion performance at a fraction of the price.**

Stainless steels are deemed corrosion resistant but often fail in oil and gas, petrochemical, marine, produced water, and other aggressive conditions. Chemical vapor deposition (CVD) coatings significantly improve the surface properties of stainless steel components used in these challenging applications.

## What are SilcoTek® CVD coatings?

SilcoTek's CVD coatings are advanced treatments that enhance the surface properties of your most critical components.

Unlike traditional anti-corrosion coatings, CVD coatings are thin (sub-micron) and dense while serving as a highly effective barrier between the surface and corrosive media. SilcoTek® coatings are hydrophobic, anti-fouling, and chemically inert as well as corrosion resistant.

### • 3-dimensional deposition eases application



Complex geometries are easily treated with no impact on tolerances or mechanical integrity, offering the most engineering-friendly surface enhancement process available.

### • Greener technology adds no environmental risk



The SilcoTek® coating process uses zero toxic chemicals or materials. The gas-phase deposition applies elemental materials with an amorphous silicon (Si) base layer.

### • Cost-effective coatings increase your bottom line



Coating stainless steel and other common alloys can offer the corrosion protection of exotic materials at a tenth of the price.

SilcoTek® CVD coatings provide reliable corrosion performance to the most crucial components in your processes. They are especially ideal for parts with tight tolerances or complex geometries. The coating is flexible and allows for leak-free seals, even under high pressure conditions.

## Applications

- Valves
- Pumps
- Fittings and fasteners
- Downhole components
- Tubing
- Heat exchanger coils
- Reactors
- Gas transfer/delivery systems
- Nozzles
- Process sampling equipment

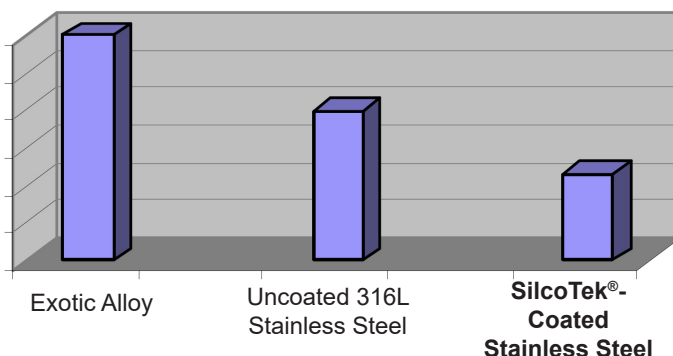
## Super Alloy Performance at a Fraction of the Price

Partnering with SilcoTek® eases the burden of material selection while lowering operating costs in corrosive applications.

- Replace expensive and hard-to-machine exotic materials
- Drastically extend the working life of stainless steel
- Lower the overall costs involved with fighting corrosion

## Cost Comparison of Materials in Corrosive Applications

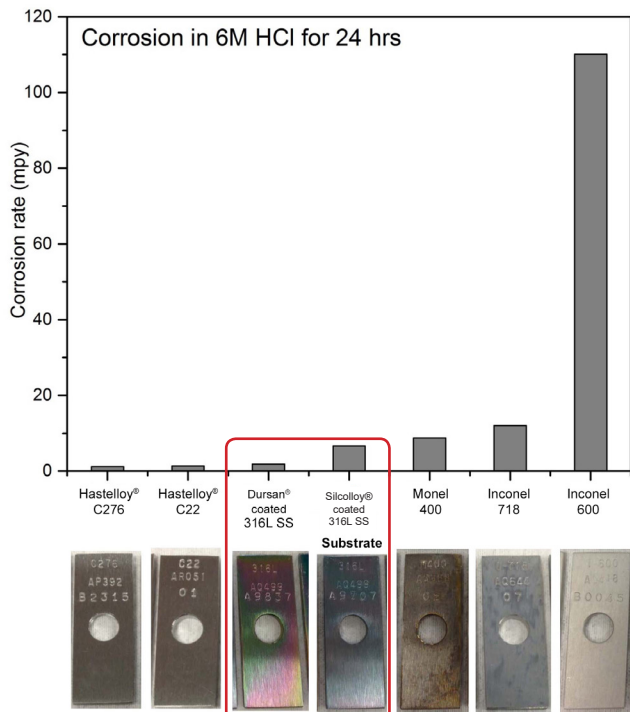
\$600,000  
\$500,000  
\$400,000  
\$300,000  
\$200,000  
\$100,000  
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Game-Changing Coatings™

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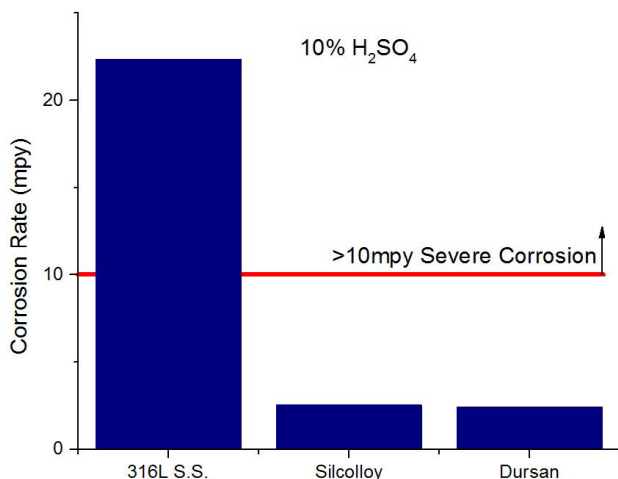
## Performance Data and Benefits



SilcoTek® CVD coatings offer the corrosion performance of super alloys at a fraction of the cost when applied to stainless steel.



SilcoTek®-coated 316L stainless steel (middle, right) is completely unaffected by ASTM G85-A2 salt spray testing after 8000+ hours.



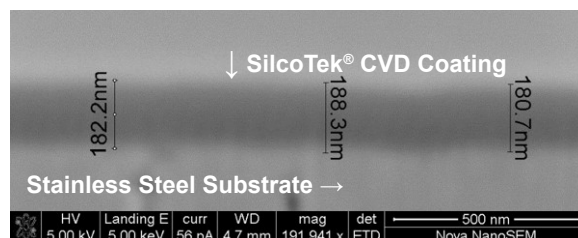
Even in aggressive sulfuric acid conditions, SilcoTek® CVD coatings provide stable protection for higher system output.

## How are CVD coatings applied?

CVD, or chemical vapor deposition, involves a high-temperature reaction between a gas-phase raw material and the substrate to be coated.

Components are placed into large vacuum chambers dependent on their size. The chamber is heated within an oven and flooded with gas to form a thin molecularly bonded layer on the surface.

The coatings are most often applied by SilcoTek® from their state-of-the-art facility as a service, but customers also have the option to license the coatings for on-site application.



SilcoTek® CVD coatings are thin flexible barriers that increase the lifetime of critical components in corrosive environments. The coatings are typically 500-1500nm thick.

## Changing the Game in Corrosion

When your corrosion resistant alloy still isn't making the grade, call on SilcoTek® to provide the performance you need at an affordable price without significant re-engineering. Replace outdated, hazardous, or expensive coatings and materials with SilcoTek® CVD coatings to get ultimate performance.

### Resources

Visit [www.SilcoTek.com/learning-center](http://www.SilcoTek.com/learning-center) for literature, data, and more.

### How to Buy

Go to [www.SilcoTek.com/ordering/quote-request](http://www.SilcoTek.com/ordering/quote-request) for a custom quote or [www.SilcoTek.com/buy-coated-products](http://www.SilcoTek.com/buy-coated-products) for stock items.

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Lit. Cat. #2017-002



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