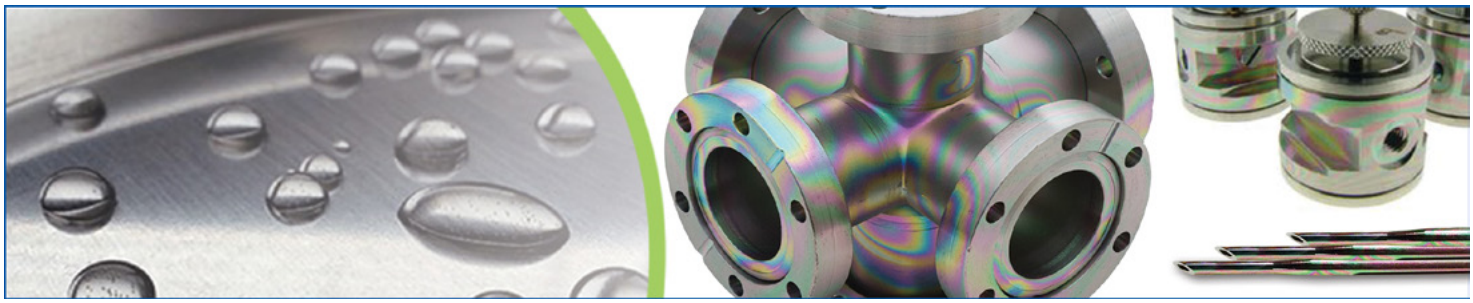
SilcoTek® Non-Stick CVD Coatings

Surface Solutions for Better Performance and More Uptime



Overview

Fouling, coking, or simply “sticking” is a costly surface problem that occurs in most industrial applications. Surface fouling causes contamination, promotes corrosion, reduces flow, increases maintenance, and ultimately inflates costs while worsening performance.

SilcoTek® offers surface treatments and coatings that substantially increase system uptime and output by reducing unwanted accumulation on critical surfaces.

Key Application Features

- **Automotive and Aerospace**
  - Improve fuel efficiency by preventing carbon coking on fuel injectors, sensors, exhaust paths, oil transfer lines, and more
- **Power**
  - Increase performance by preventing scaling and fouling on heat exchanger surfaces
- **Mold Release, Packaging, and Plastics**
  - Increase plant uptime by reducing maintenance
- **Medical Diagnostics and Pharmaceuticals**
  - Ensure accurate results and equipment uptime by preventing surface activity

Specifications

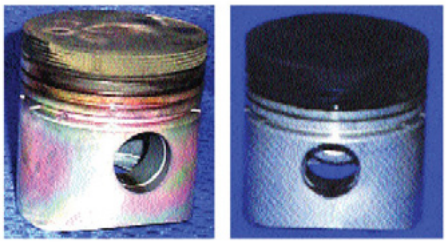
Applicable coatings:	**Dursan®** - chemically functionalized silicon oxide (a-SiO) **Notak™** - direct fluoro- molecular surface treatment (no base coating)	
Deposition process:	Thermal chemical vapor deposition (not plasma-enhanced)	
Temperature:	Deposition	300°C (Notak™); 450°C (Dursan®)
	Use	Up to 300°C (Notak™); 450°C (Dursan®)
Substrate:	Compatibility	Stainless steels, titanium, aluminum, more
	Size	Up to 80” (203 cm)
	Geometry	Any shape, including complex geometries
Coating thickness:	400-1600 nm (Dursan®); Notak™ adds no appreciable thickness	
Non-stick properties (contact angle):	DI water - excellent (up to 150°); 10W40 oil - very good (up to 105°)	
Ideal for:	Molds, heat exchangers, tubing, extrusion components, instrumentation, more	

Performance Data & Benefits

Non-Wetting

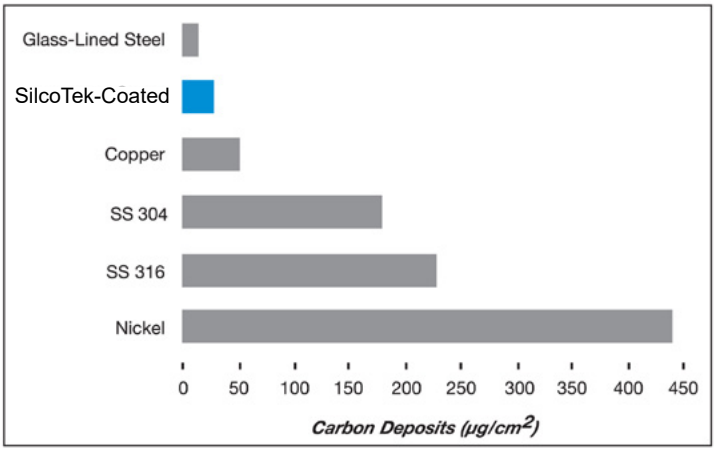
Extend system lifetime and reduce maintenance

SilcoTek®-coated surfaces (left) prevent build-up or "fouling" of unwanted materials and byproducts.



Anti-Coking Performance

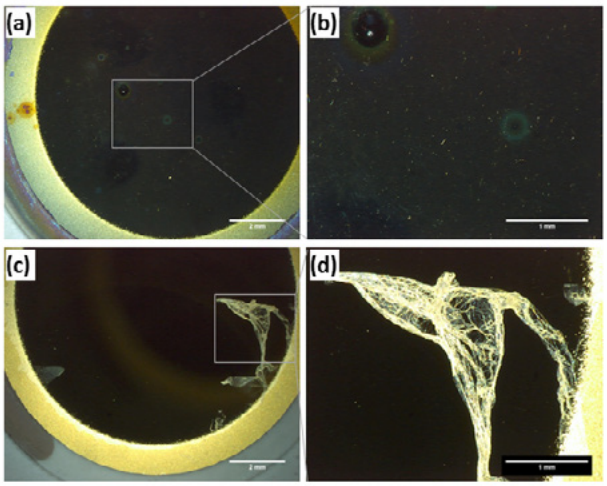
Increase efficiency of fuel injection and delivery systems



Substantially improve fuel efficiency by reducing carbon deposits on metal surfaces.

More Robust than Fluoropolymers

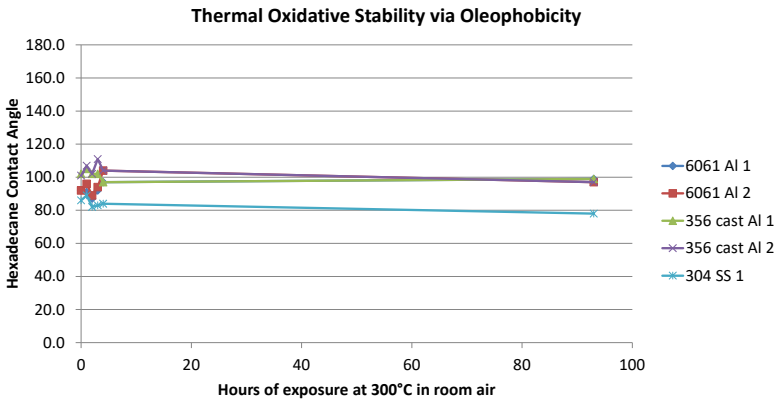
Improve component lifetime in addition to non-stick properties.



Dursan®-coated parts (top) withstand medical-grade cleaning procedures, while fluoropolymers (bottom) crack and flake.

Stability in Demanding Environments

Notak™ maintains properties even at high temperatures



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**

By phone: **+1 (814) 353-1778**

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References

1. Perez, J., A. Boehman, Penn State Multi-Discipline Tribology Group and Energy Institute Studies The Pennsylvania State University, University Park, PA (1998).
2. Jones, E.G., W. Balster, W. Rubey, Fouling of Stainless Steel and Silcosteel Surfaces During Aviation-Fuel Autoxidation Systems Research Laboratories, Inc, Dayton, OH; University of Dayton Research Institute, Dayton, OH (1995).
3. Altin, O., S. Eser, Analysis of Solid Deposits from Thermal Stressing of a JP-8 Fuel on Different Surfaces in a Flow Reactor Ind. Eng. Chem. Res, 40: 596-603 (2001).