



### Treatments

Restek's Performance Coatings (RPC) Division specializes in innovative surface treatments for steel, stainless steel, alloys, glass, ceramics, and other materials. Restek surface treatments are chemically inert, ultra pure, and corrosion resistant, making them ideal for analytical uses.

The Restek Performance Coatings family of surface treatments includes:

- **Silcosteel®**—A general purpose passivation layer for steel and stainless steel. US Patent 6,511,760.
- **Siltek®**—The ultimate passivation of treated surfaces, from glass to high nickel alloys of steel. US Patent 6,444,326.
- **Silcosteel®-AC**—Dramatically reduces carbon buildup on stainless steel components. US Patent 6,444,326.
- **Silcosteel®-CR**—A corrosion resistant layer that increases the lifetime of system components in acidic environments containing hydrochloric acid, nitric acid, or seawater. US Patent 7,070,833.
- **Silcosteel®-UHV**—Greatly reduces outgassing from components of ultra-high vacuum systems. US Patent 7,070,833.
- **Sulfinert®**—A required treatment for metal components when analyzing for parts-per-billion levels of organo-sulfur compounds. US Patent 6,444,326.

### Restek Performance Coatings have provided solutions to:

- **Laboratories** save thousands in needless retests caused by high surface activity through the use of Siltek® treated analytical flow paths.
- **Refiners** save millions yearly by detecting plant upsets sooner with Restek treated sampling systems.
- **Natural gas producers** are able to precisely assess feed stock quality with Sulfinert® sample cylinders.
- **Semiconductor manufacturers** eliminate yield-robbing contamination with Silcosteel®-CR treated process systems.
- **Chemical and petrochemical plants** save down time and maintenance costs by reducing corrosion in process systems treated with Silcosteel®-CR.
- **Research and semiconductor operations** improve throughput by speeding pump-down rates in vacuum processes, using Silcosteel®-UHV treatment.
- **NASA** has improved analytical instrument durability and sensitivity by treating analytical pathways with Silcosteel® coating.
- **Power plants** nationwide are able to cost effectively detect mandated mercury emissions, using Siltek® treated systems.

To learn how Restek Performance Coatings can meet your process or materials challenge, contact our technical service group at 800-356-1688, ext. 4, or contact your Restek representative.

For a free sample, visit [www.restekcoatings.com/sample](http://www.restekcoatings.com/sample)



1985

Paul Silvis opened Restek for business in one room of an elementary-school-turned-business incubator.



1987

Restek invents Silcosteel® coating and successfully applies it to instruments for the analytical industry.



1993

Restek develops an approach for treating both the outside and inside of mass spectrometer components.



1998

Restek is awarded the first of several patents for surface treatments.



1999

Silcosteel®-treated air monitoring system components installed in the space shuttle Discovery.

## Treatment Process

Restek Performance Coatings are deposited using a patented process in which the item to be treated is heated under vacuum. When the item has been heated to the appropriate temperature, reacting silicon-like gases that form the protective surface are introduced, depositing a durable layer that grows and overlays itself multiple times. The reaction layer penetrates into the treated piece and binds solidly. It is not a line-of-sight coating; it is integrated with the substrate and is, therefore, extremely durable. Treatments apply uniformly, even at corners, holes, and machined ridges.



**Gary Barone**  
Restek Performance  
Coatings Business  
Development Manager  
*18+ years of service!*

## Treated Products for Chromatography

Restek Performance Coating's surface treatments have found many applications worldwide, from analytical laboratories to refineries to semiconductor operations. Makers of scientific instruments have benefited from Restek treatments since the mid 1990s, allowing detection of compounds at the parts-per-trillion level. The chromatographer will realize these benefits when treating sample pathways, from injector to detector. Available from stock for immediate delivery, some treated chromatographic products include:

- MXT® columns (pages 100-107)
- Inlet liners (see the Instrument Supplies section, beginning on page 130)
- Inlet seals (pages 150-151)
- FID jets (see the Instrument Supplies section, beginning on page 130)
- Tubing and fittings (pages 392-396)
- SilcoCan™ air monitoring canisters (pages 402-403)
- Sample cylinders and valves (pages 385, 419)
- Sample loops (page 385)

free sample

[www.restekcoatings.com/sample](http://www.restekcoatings.com/sample)

RESTEK PERFORMANCE COATINGS



Restek Performance Coatings also offers treatments on a custom basis. Specialized items in your laboratory can benefit by having an inert surface. See page 398 for more information.



**2002**  
RPC becomes a separate division of Restek, expanding into a state-of-the-art treatment facility.



**2003**  
Silcosteel®-AC and Silcosteel®-CR developed.



**2004**  
R&D magazine recognizes Silcosteel®-UHV as one of the 100 most technologically significant products of the year.



**2004**  
Silcosteel®-treated components enter orbit on the Cassini-Huygens Mission to Saturn.



**2006**  
Silcosteel® high-performance automotive coatings awarded 2 "Best New Product" awards at SEMA 2006.

