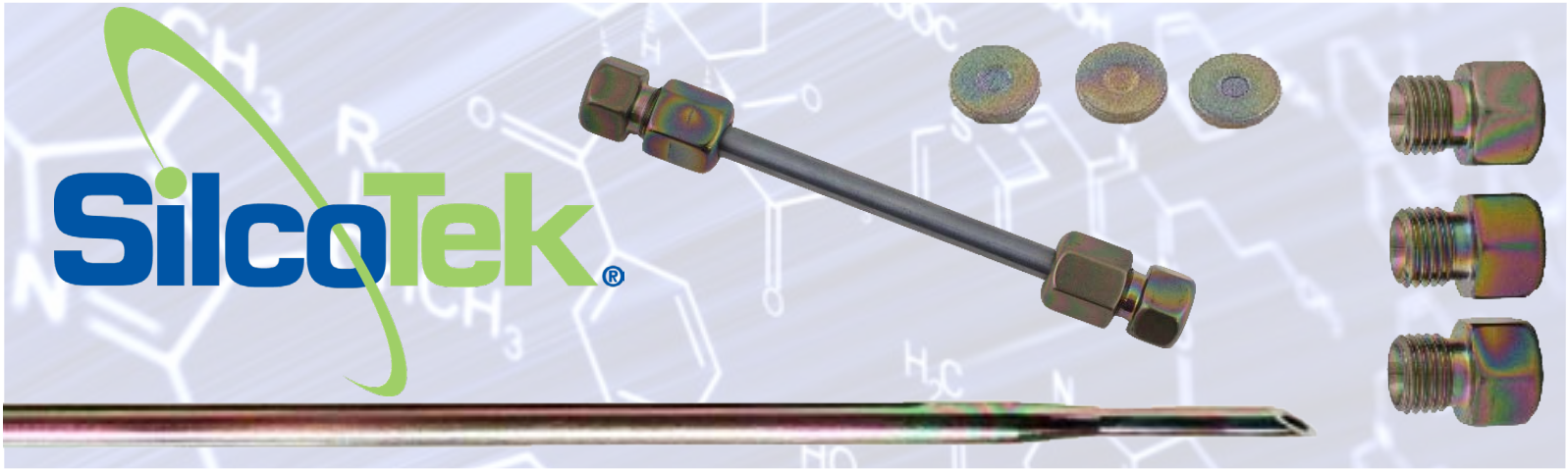


Overview

A bio-inert flow path is required to manage the complex and reactive sample profiles that are common in today's fast-paced analytical world. Modern LC systems feature an array of exotic materials to achieve bio-inertness, but they are significantly more expensive than instruments constructed with stainless steel flow path components.

Applications and Benefits

- Columns and Frits → Improved Chromatography
- Needles → Reduce Carryover and Contamination
- Sampling and Transfer → Prevent Sample Loss and Corrosion
- Ampules → Improve Inertness and Purity
- Stainless Steel Components → Improve Hydrophobicity and Corrosion

Key Features

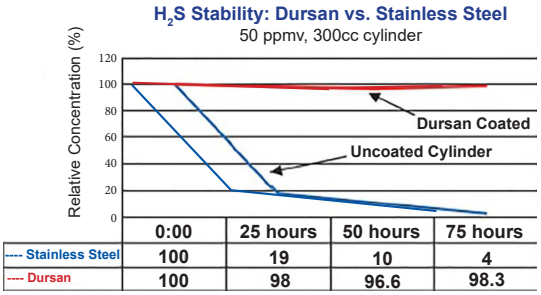
- Creates an iron-free bio-inert flow path to minimize unwanted protein interactions and maximize uptime
- Increases system robustness under extreme salt and pH conditions
- Improves bio-inertness of frits and other difficult components that cannot be treated by other methods
- Enhances chemical compatibility, even with media like tetrahydrofuran (THF) that challenge PEEK

Dursan® Specifications

Coating Structure:	Functionalized silica-like coating (a-SiO_x:CH_y)	
Deposition Process:	Thermal chemical vapor deposition (not plasma-enhanced)	
Maximum Temperature*:	500° C (inert atmosphere) 450° C (oxidative)	
Substrate:	Compatability: Size: Geometry:	Stainless steel, exotic alloys, ceramics Up to 78” (198 cm) Any shape, including complex geometries
Typical Thickness:	400 -1600 nm	
Hydrophobicity (contact angle):	≥ 81°	
Allowable pH Exposure:	0 - 14	

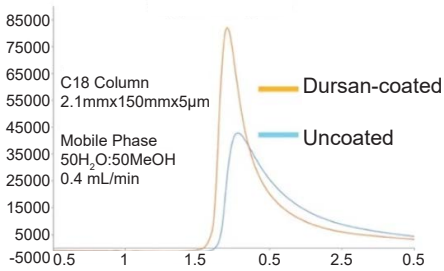
ENHANCE INERTNESS

Dursan allows low parts-per-million sensitivity to sulfur compounds.



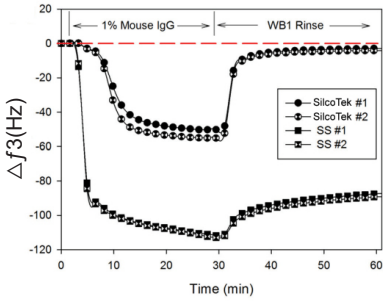
IMPROVE PEAK SHAPE

Increase chromatographic accuracy and reliability.



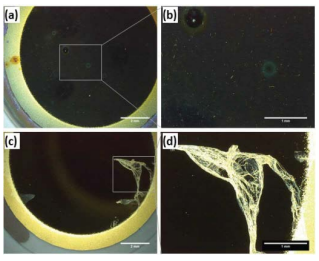
REDUCE SURFACE FOULING

Surface fouling reduction to increase time between maintenance cycles.



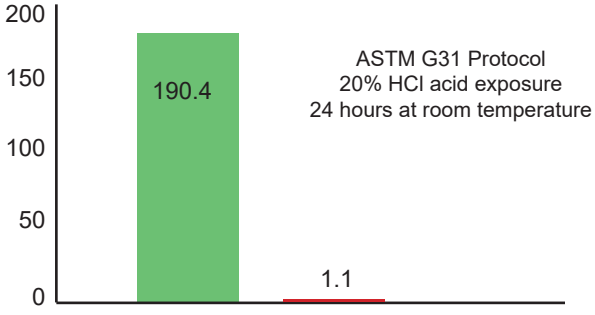
INCREASE DURABILITY

Dursan (top row) has twice the wear resistance of 304 stainless steel and won’t crack or flake like PTFE (bottom row).



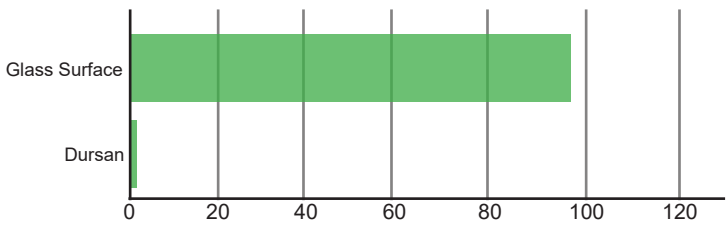
BETTER CORROSISON RESISTANCE

Extend system lifetime and reduce maintenance costs.



MORE INERT THAN GLASS

Reactive glass ampules and surfaces can adsorb active compounds. Dursan coated surfaces virtually eliminate analyte interaction, improving test reliability.



Some questions for the expert:

Jesse Bischof, Ph.D. answers some common questions surrounding SilcoTek's bio-inert coatings and HPLC.

What are some common problems that high performance liquid chromatography applications face?

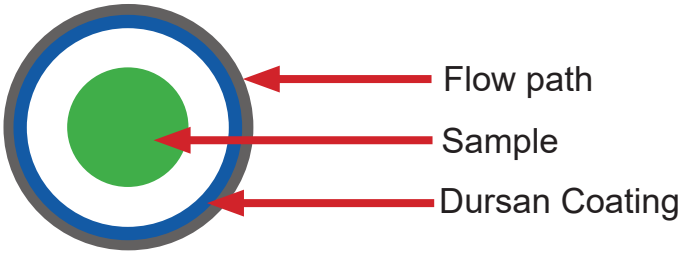
Inertness can be compromised when systems are made of stainless steel. Proteins, chelating molecules and sulfur containing molecules can stick or react making analysis difficult. **Corrosion** can be caused by the wide array of solvents and buffers used to perfect chromatography experiments.

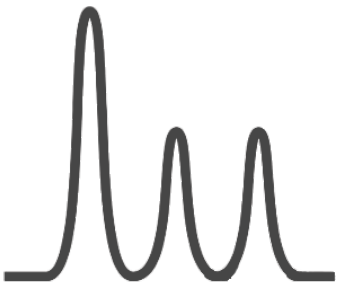
What makes SilcoTek coatings solutions different?

- Many coatings are applied via line-of-sight techniques, so only the part facing the source of the coating receives the treatment.
- SilcoTek coatings are applied via chemical vapor deposition (CVD).
- CVD application coats all complex geometries completely and evenly, providing a sub-micron barrier.

What difficulties do SilcoTek coatings eliminate?

Dursan acts as a barrier between the flow path and the sample, allowing that instrument to be constructed from stainless steel. This allows for the robustness of steel to be combined with the bio-inertness of Dursan.





Why is corrosion resistance in liquid chromatography so important?

- Improve lifetime of equipment
- Prevent introduction of metal ions into the system.
- Eliminate reaction from proteins and biomolecules
- Ensure consistent analysis