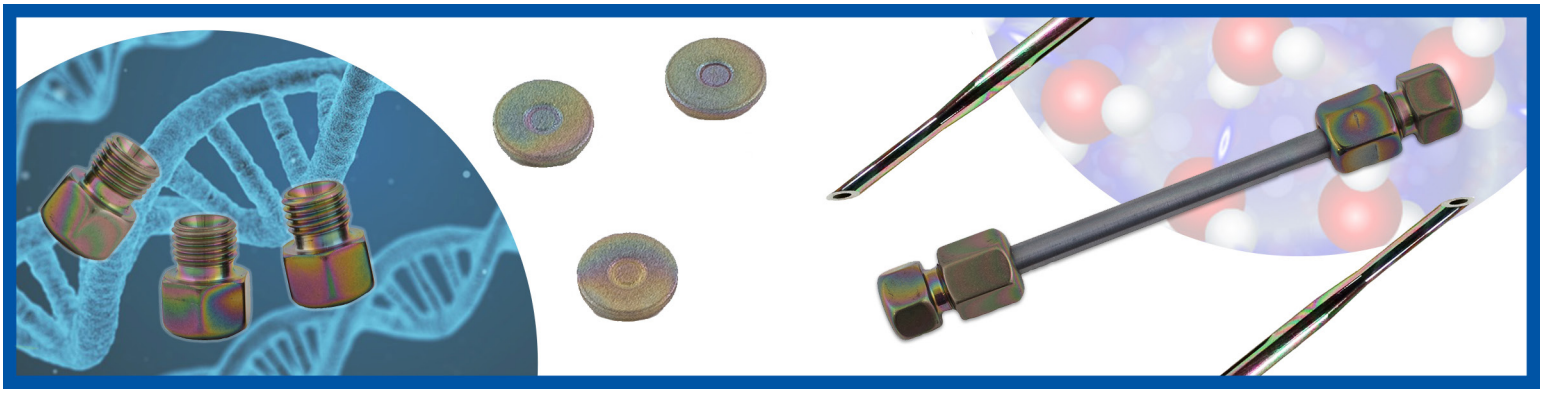
Metal-Free LC with Dursan® Bio-Inert Coating

Surface Solutions for Reliable and Repeatable Liquid Chromatography



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.

Dursan® is a coating for stainless steel that provides equal or better bio-inertness than PEEK along with the robustness of stainless steel. PEEK swells and is not suitable for the pressure conditions required in today's LC. Dursan® is a simple and cost-effective solution for parts requiring bio-inert properties throughout the lab.

Key Features

- Creates a metal-free bio-inert flow path to minimize unwanted analyte interactions and maximize uptime.
- Increases system robustness under extreme salt and pH conditions.
- Inert to nearly all buffers and additives used in HPLC.
- Improves bio-inertness of frits and other difficult components that cannot be treated by other methods.
- Enhances chemical compatibility, even with solvents like tetrahydrofuran (THF) that challenge PEEK.

"The Dursan®-coated columns have so far passed all tests bravely... The results were, as expected, much better than steel columns, but also better than pure PEEK columns."

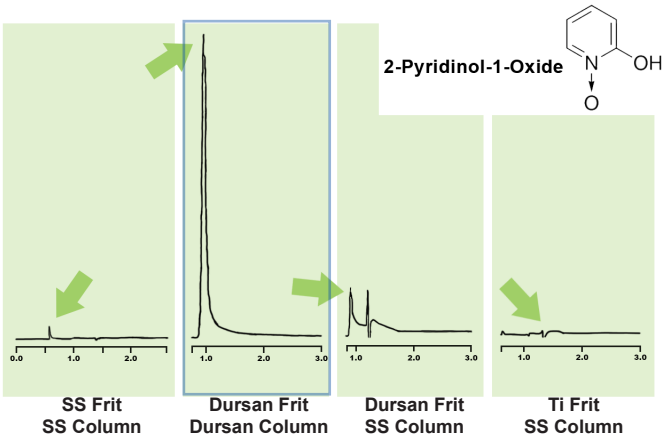
Dursan® Specifications

Coating Structure:	Functionalized silica-like coating (a-SiO_X:C_YH_Z)	
Deposition Process:	Thermal chemical vapor deposition (not plasma-enhanced)	
Temperature:	Deposition	300° to 450°C
	Use	-210°C to 450°C
Substrate:	Compatibility	Stainless Steel, Titanium, Aluminum, Ceramics, More
	Size	Up to 80" (203 cm)
	Geometry	Any shape, including complex geometries
Coating Thickness:	400 - 1600 nm	(Thinner in confined geometries like frits)
Allowable pH Exposure:	0 - 14	
Ideal For:	Frits, Columns, End Fittings, Pump Heads, Valves, Tubing, Needles, and Vials	

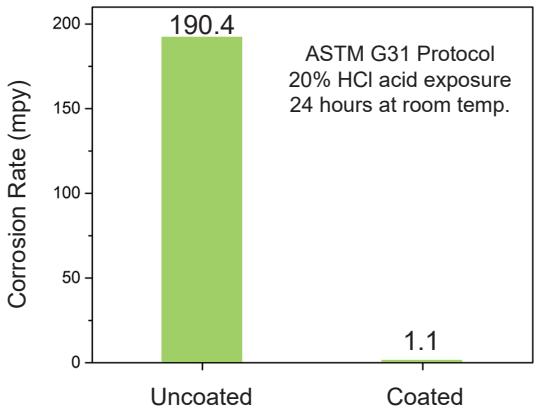
Dursan® refers to the Dursan® process, which is a thermal chemical vapor deposition process that we perform to enable your parts to have the properties identified above.

Performance Data & Benefits

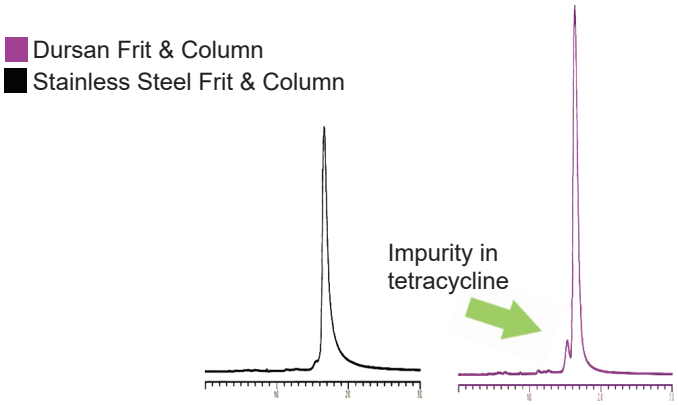
Metal free LC. Apowerful metal chelating agent can only be analyzed with a Dursan coated flow path.



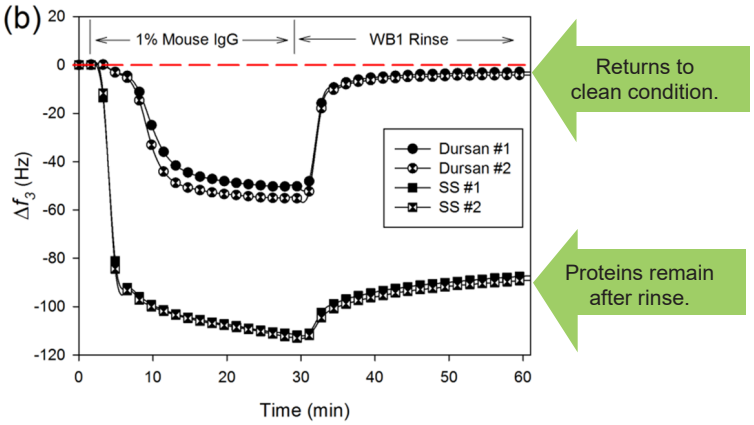
Increase corrosion resistance. Eliminate contamination that causes surface activity and instrument downtime.



Improve analytical accuracy. Impurities in this tetracycline sample may have gone unnoticed. Peak tailing is reduced and peak shape improved.

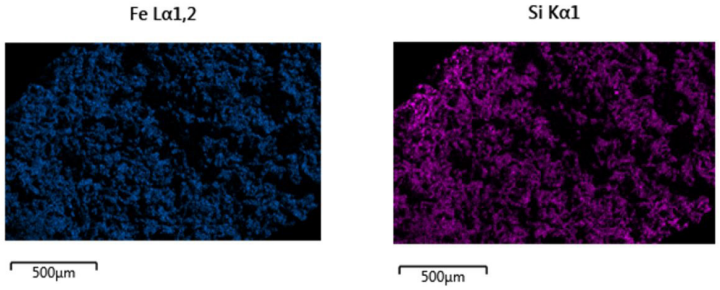


Reduce surface fouling from proteins and other biomedia. Increase time between maintenance cycles.



Vaidya, S.V.; Yuan, M.; Narvaez, A.R.; Daghfal, D.; Mattzela, J.; Smith, D. Appl. Surf. Sci. 2016, 364, 896-908

Coat the entire flow path, even frits. A sintered frit was coated, broken in half, and examined via SEM/EDS.



Dark spots are shadowing effects from the rough nature of frit. The entirety of the internal network is coated.

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