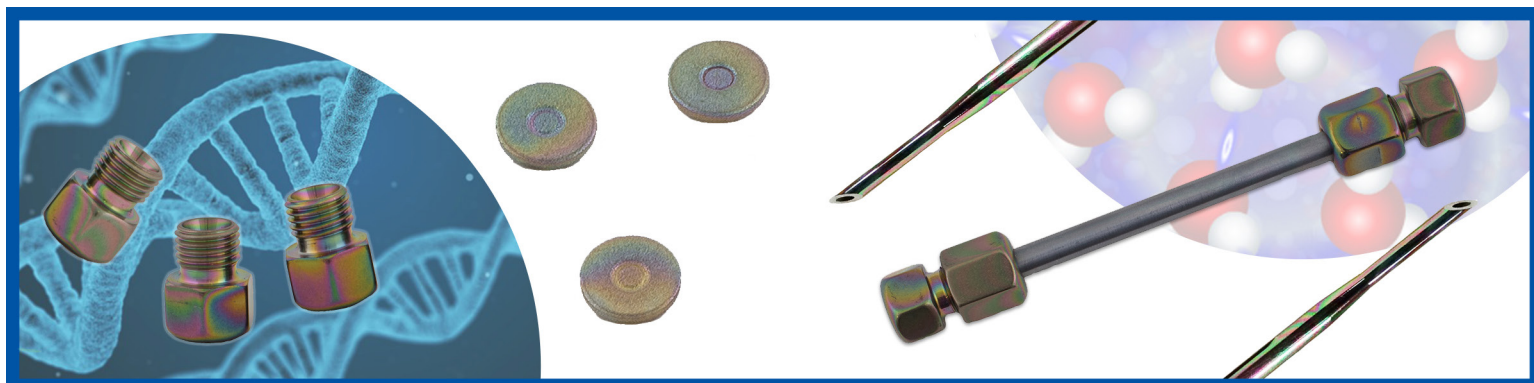


# Metal-Free LC with Dursan® Bio-Inert Coating

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.

## Dursan® Specifications

Coating Structure:	Functionalized silica-like coating ( $a\text{-SiO}_x\text{:C}_y\text{H}_z$ )	
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	

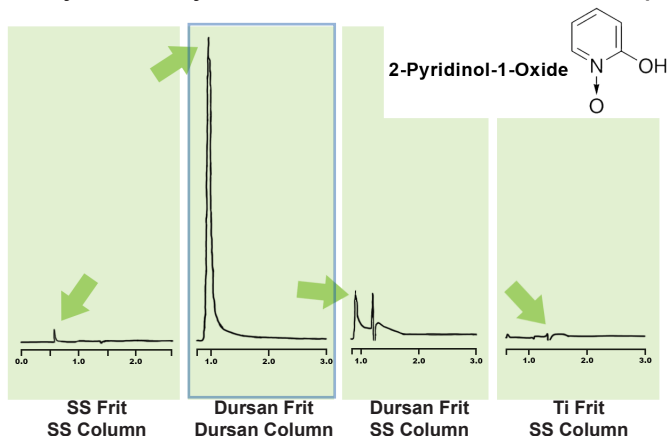
## Key Features

- 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.

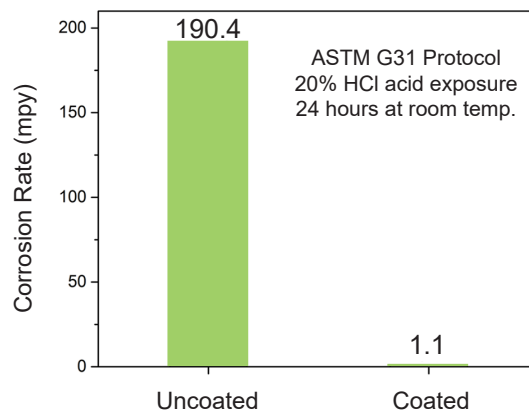
*"The Dursan®-coated columns have so far passed all tests bravely... The results were, as expected, much better than steel columns, but also better than pure PEEK columns."*

# Performance Data & Benefits

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

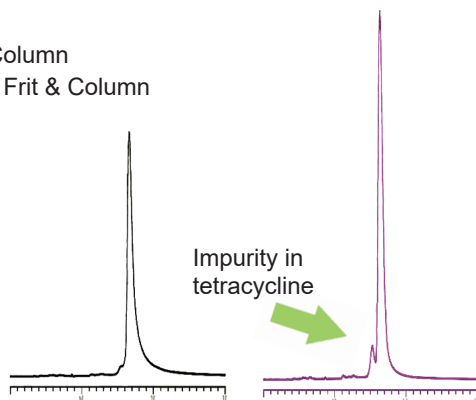


**Increase corrosion resistance.** Eliminate contamination that causes surface activity and instrument downtime.

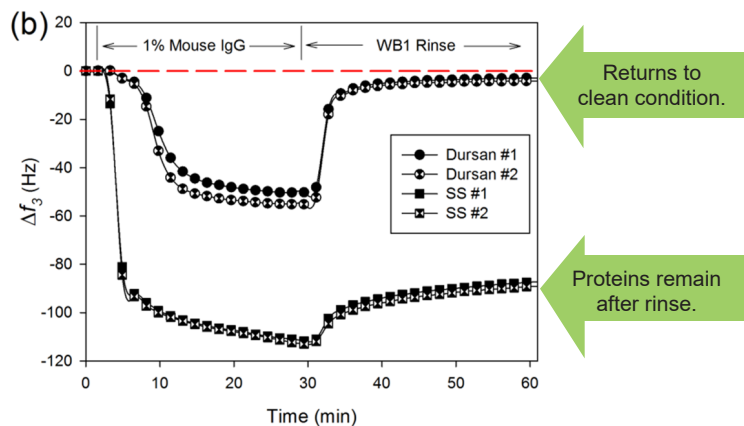


**Improve analytical accuracy.** Impurities in this tetracycline sample may have gone unnoticed. Peak tailing is reduced and peak shape improved.

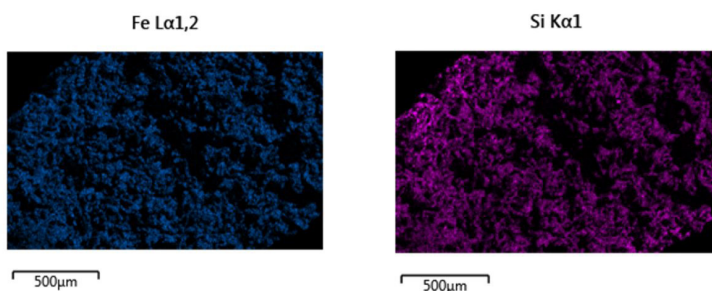
■ Dursan Frit & Column  
■ Stainless Steel Frit & Column



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



**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.

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



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