Product Advance Sheet

Bio-UHPLC Column Hardware

Biocompatible PEEK™-Lined Stainless Steel

Available in AUGUST

IDEX Health & Science introduces the NEW Isolation Technologies® PEEK-Lined Stainless Steel (PLS) Column for biocompatible applications. The PLS column combines the strength of our stainless steel UHPLC column (IsoBar) with the chemical inertness of PEEK polymer to ensure the integrity of bio-molecules by minimizing unwanted surface interactions while also allowing operation under harsh solvent or pH conditions. This hardware has been designed for demanding applications within the UHPLC realm.

Biocompatible

- Some suggested applications: bio-molecule analysis, low pH applications, IC, bio-inert LC, bio-purification, harsh solvents, protein characterization
- Rated to 20,000 psi (1379 bar) packing at RT/ 15,000 psi (1034 bar) operating up to 80°C

Benefits

- Removable frit assemblies
- Excellent column durability over hundreds of injections
- Easy-to-pack column hardware
- Improved pressure handling capability over conventional PEEK column hardware

Available in a Variety of Lengths

The PLS column will be available in a variety of standard lengths to accommodate various application requirements. Each column design contains removable Titanium frits. The option for PEEK frits is coming soon. For custom lengths please contact us for more information.

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IDEX HEALTH & SCIENCE

Application Note 1: Comparison of efficiency between a PLS column and a SST Column

Two 4.6 mm x 15 cm columns were packed and run under the same experimental conditions. One column was a standard SST column, the other was a new PLS column. Under our conditions we observed higher efficiency for the separation of a standard small molecule mixture in the PLS column than in the SST version, although the efficiency you can achieve will depend on the nature of the packing material, packing conditions, and other experimental conditions.

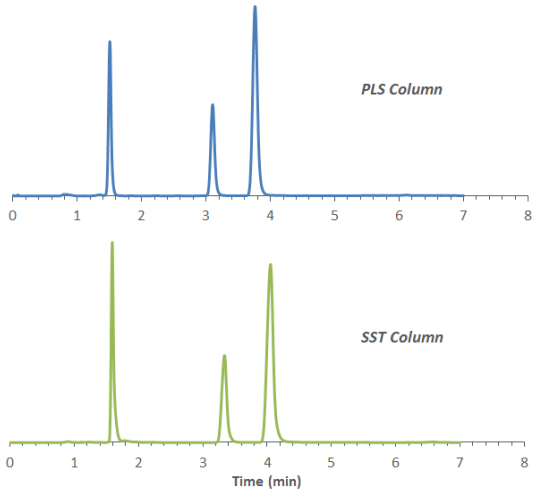

Figure 1: *Chromatographic comparison of a conventional stainless steel (SST) column (top) versus the new PLS column (bottom).*

- 4.6 mm x 15 cm columns
- Packing Material: 3 µm, 300 Å C18 bonded phase
- Packing Pressure: 8,000 psi
- Mobile Phase: 70/30 Acetonitrile/Water
- Flow Rate: 1 mL/min
- Detection: 210 nm

Test Sample	PLS Column Efficiency (Plates/m)	SST Column Efficiency (Plates/m)
Uracil	34347	33500
Benzene	71760	51087
Ethylbenzene	72460	50907

Application Note 2: Comparison of peptide sample recovery between a PLS column and a SST column

Smaller column ID's (2.1 mm) were packed with sub-2 µm media to study the separation of small molecules and the relative recovery of a standard peptide mixture. A comparison was made between a new PLS column and a conventional SST column, both of which were packed and tested under identical conditions. After multiple injections on both types of hardware, the datasets were compared (Student's *t*-test with 0.05 statistical significance level). For these particular peptides, and under our experimental conditions, the PLS column resulted in a 15-20% increase in peak area count compared to the SST column.

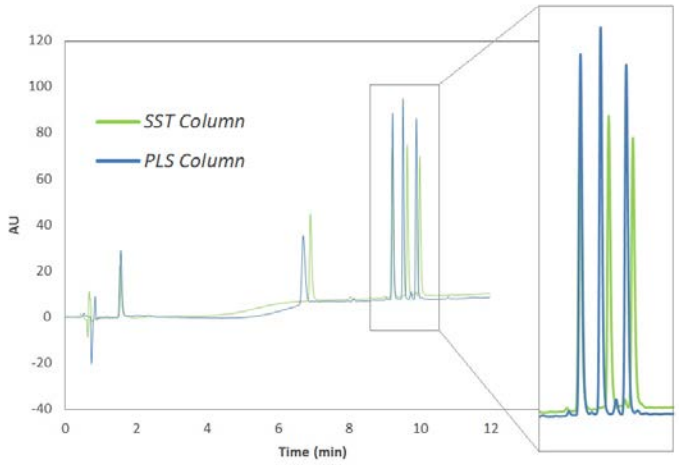

Figure 2: *Overlaid chromatograms for separation of a standard peptide test mixture .*

- 2.1 mm x 5 cm columns
- Packing Material: 1.9 µm, C18 bonded phase
- Packing Pressure: 20,000 psi
- Mobile Phase: (A) acetonitrile (0.1% TFA), (B) water (0.1% TFA)
- Gradient Elution: 10% A to 55% A in 12 min
- Flow Rate: 250 µL/min
- Detection: 210 nm
- Peptide Sample Composition: Gly-Ty, Val-Tyr-Val, Met-Enkephalin, Leu-Enkephalin, Angiotensin II

Standard Column Sizes*

Description
2.1 mm ID x 5 cm, UHPLC Biocompatible Column, 0.5 µm Titanium Frit**
2.1 mm ID x 10 cm, UHPLC Biocompatible Column, 0.5 µm Titanium Frit**
2.1 mm ID x 15 cm, UHPLC Biocompatible Column, 0.5 µm Titanium Frit**
4.6 mm ID x 5 cm, UHPLC Biocompatible Column, 0.5 µm Titanium Frit**
4.6 mm ID x 10 cm, UHPLC Biocompatible Column, 0.5 µm Titanium Frit**
4.6 mm ID x 15 cm, UHPLC Biocompatible Column, 0.5 µm Titanium Frit**

*Other standard lenghts and ID's may be available. Please contact us for more info.
**PEEK frits coming soon!

Contact Isolation Technologies for custom sizes and part number information

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