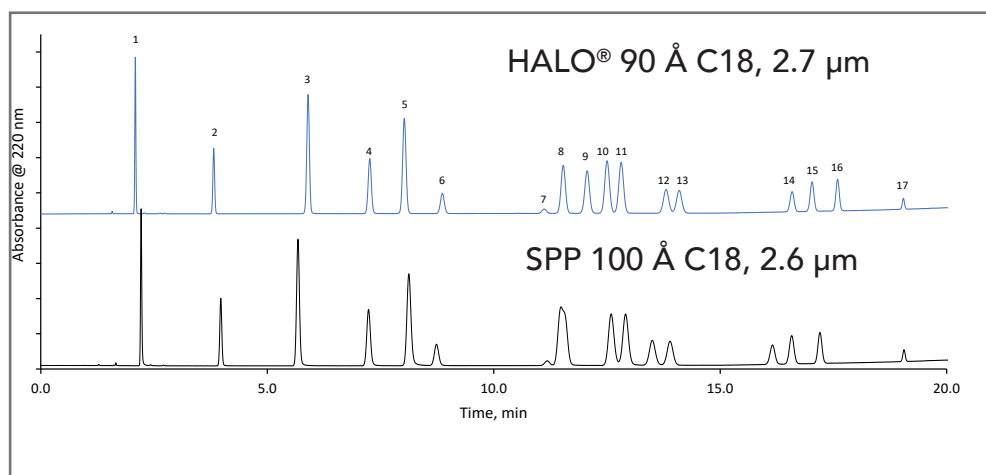




HPLC Separation of Explosives: Comparison of HALO[®] to a Competitor SPP Column

238-EX



PEAK IDENTITIES

1. HMX
2. RDX
3. 1,3,5-Trinitrobenzene
4. 1,3-Dinitrobenzene
5. 3,5-Dinitroaniline
6. Nitrobenzene
7. Nitroglycerin
8. Tetryl
9. 2,4,6-Trinitrotoluene
10. 2-Amino-4,6-dinitrotoluene
11. 4-Amino-2,6-dinitrotoluene
12. 2,4-Dinitrotoluene
13. 2,6-Dinitrotoluene
14. 2-Nitrotoluene
15. 4-Nitrotoluene
16. 3-Nitrotoluene
17. PETN (pentaerythritol tetranitrate)

TEST CONDITIONS:

Column: HALO 90 Å C18, 2.7 μm, 4.6 x 150 mm

Part Number: 92814-702

Competitor Column: SPP 100 Å C18, 2.6 μm, 4.6 x 150 mm

Mobile Phase A: Water

Mobile Phase B: Methanol

Gradient:	Time	%B
	0.0	25
	14.0	35
	20.0	62

Flow Rate: 1.5 mL/min

Initial HALO[®] Back Pressure: 441 bar

Initial Competitor Back Pressure: 490 bar

Temperature: 43°C

Detection: 220 nm

Injection Volume: 0.2 μL

Sample Solvent: Methanol

Data Rate: 100 Hz

LC System: Shimadzu Nexera X2

The determination of explosives in the environment is outlined in EPA method 8330B. 17 explosive compounds are separated on a HALO 90 Å C18 column in less than 20 minutes using a water/methanol gradient. These compounds are either used in the manufacture of explosives or propellants. The impurities or degradation of these compounds could be found in water, soil, or sediment samples. Baseline resolution is maintained on the HALO[®] column while there are peak co-elutions with a similar superficially porous particle column.

