

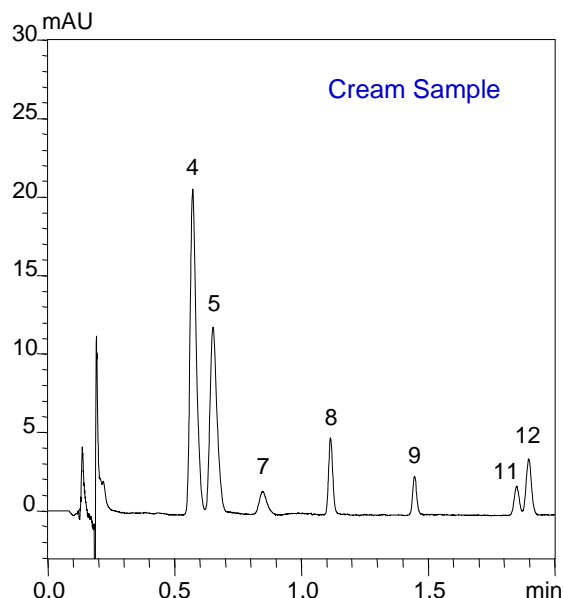
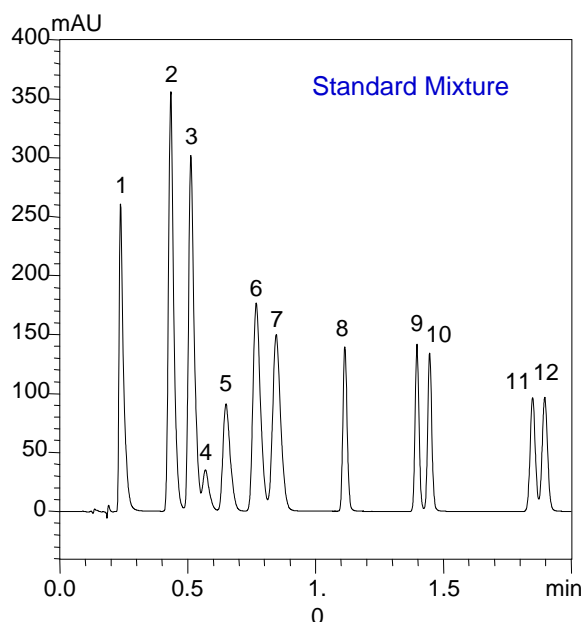
Nexera Application Data Sheet No. 8

Ultra-High-Speed Analysis of Preservatives in Cosmetics

Parabens and other preservatives are added to cosmetics to maintain safety and quality. The simultaneous analysis of these preservatives generally takes a long time, due to the many types of preservative used. This Application Data Sheet introduces the ultra-high-speed analysis of preservatives in cosmetics using the high resolution of the Shim-pack XR-ODS III column (1.6 μm particle size) and the high pressure tolerance (130 MPa) of the Nexera.

Simultaneous Analysis of Preservatives in Cream

Twelve preservative components used in cosmetics were analyzed using a Shim-pack XR-ODS III analysis column with 1.6 μm particle size (50 mmL. \times 2 mmI.D.). A 100 mg/L standard mixture was prepared with methanol. 1.0 g cosmetic cream was ultrasonically extracted in methanol, and made up to 100 mL total volume. The maximum system pressure load for this analysis was 76 MPa.



Column : Shim-pack XR-ODS III
(50 mmL. \times 2.0 mm I.D., 1.6 μm)
Mobile Phase : A : 5 mmol/L (Sodium) citrate buffer (pH 4.2)
B : Acetonitrile
Gradient : B 25% (0-0.6 min) \rightarrow 40% (0.7 min)
 \rightarrow 45% (2.0 min)
Flow Rate : 0.8 mL/min
Column Temp. : 40 $^{\circ}\text{C}$
Injection Volume : 2 μL
Detection : UV 230 nm
Flow Cell : Semi-micro cell
Pressure : 76 MPa

Peaks :

1. Salicylic Acid
2. Benzoic Acid
3. Sorbic Acid
4. Phenoxyethanol
5. Methylparaben
6. Dehydroacetic Acid
7. Chlorphenesin
8. Ethylparaben
9. Isopropylparaben
10. Propylparaben
11. Isobutylparaben
12. Butylparaben

* The background has been subtracted from these chromatograms.