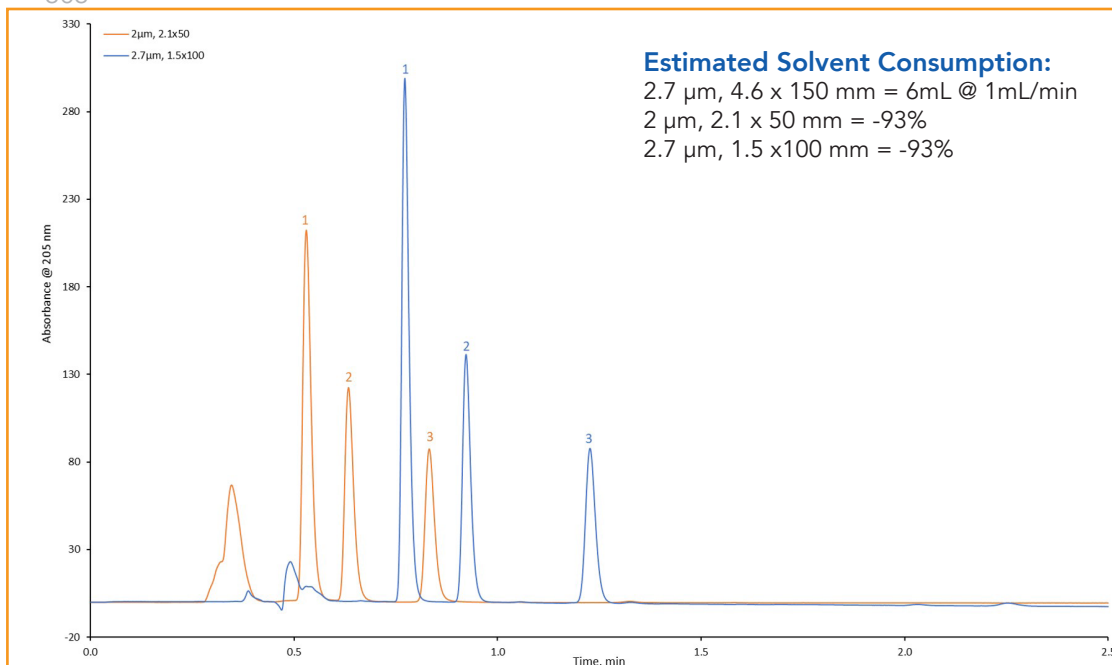




Options for Optimizing the USP Monograph for Estradiol

303



PEAK IDENTITIES

1. Ethyl Paraben
2. Estradiol
3. Estrone

TEST CONDITIONS:

Column: Column: HALO 90 Å C18, 2 µm, 2.1 x 50 mm

Part #: 91812-402

Column: HALO 90 Å C18, 2.7 µm, 1.5 x 100 mm

Part #: 9281X-602

Mobile Phase A: Water

Mobile Phase B: ACN

Isocratic: 45/55 Water/ACN

Flow Rate: 0.3 mL/min for 2.1 mm
0.2 mL/min for 1.5 mm

Pressure: 335 bar/2.1 mm
313 bar/1.5 mm

Temperature: 22 °C for 2.1 mm
25 °C for 1.5 mm

Detection: UV 205 nm, PDA

Injection Volume: 1.0 µL

Sample Solvent: 45/55 Water/MeOH

Data Rate: 100 Hz

Response Time: 0.025 sec.

Flow Cell: 1µL

Instrument: Shimadzu Nexera X2

The USP monograph method for Estradiol can be optimized to save time, reduce solvent consumption, and reduce sample needed. The method calls for a 4.6 x 250 mm ID column. By a simple switch to a smaller ID column, total run time and solvent consumption can be reduced. Another perk of optimizing with smaller column ID's is an increase in sensitivity. Seen above is the USP monograph for Estradiol run on both a HALO® 2.1 and 1.5 ID column. The peaks elute quickly on both columns while retaining good resolution and tailing values.

