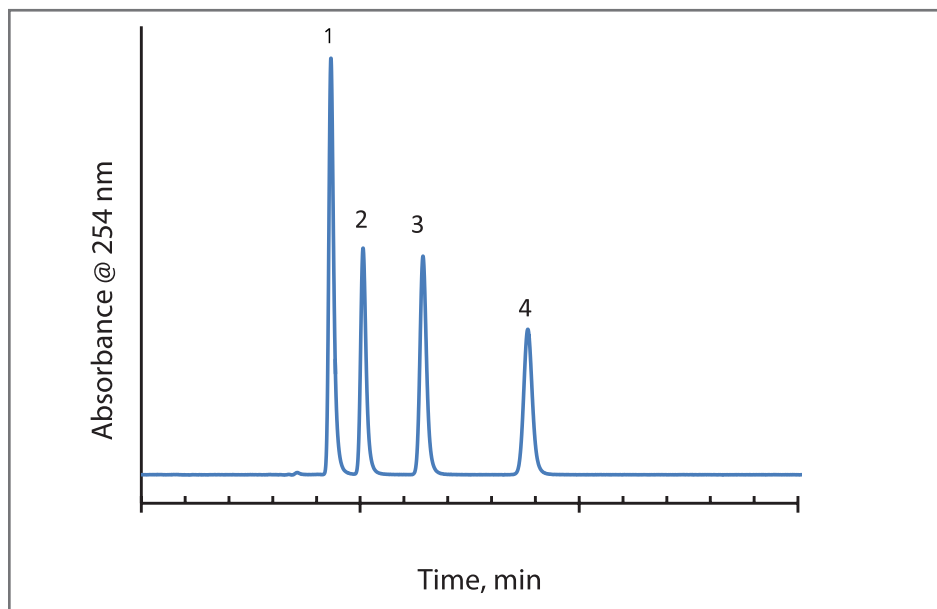




## Separation of p-Hydroxybenzoic Acid Esters (Parabens) on HALO® C18, 2.7 µm

Application Note 94-P



### PEAK IDENTITIES:

1. Methyl paraben
2. Ethyl paraben
3. Propyl paraben
4. Butyl paraben

The parabens are used as preservatives in many cosmetics, shampoos, medications and food. They are considered to be safe but recent studies have indicated a possible connection with breast cancer. Four common parabens can be rapidly determined using a short HALO® C18, 2.7 µm column at a relatively low pressure.

### TEST CONDITIONS:

**Column:** HALO 90 Å C18, 2.7 µm,  
4.6 x 50 mm

**Part Number:** 92814-402

**Mobile Phase:** 30/70 - A/B

A: Water

B: Methanol

**Flow Rate:** 1.5 mL/min

**Pressure:** 196 bar

**Temperature:** 40 °C

**Detection:** UV 254 nm, VWD

**Injection Volume:** 0.5 µL

**Sample Solvent:** 50/50 water/methanol

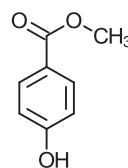
**Response Time:** 0.02 sec

**Flow Cell:** 2.5 µL semi-micro

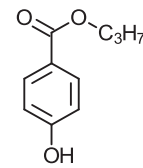
**LC System:** Shimadzu Prominence UFLC XR

**Extra Column Volume:** ~14 µL

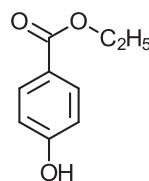
### STRUCTURES:



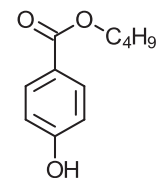
Methyl Paraben



Propyl Paraben



Ethyl Paraben



Butyl Paraben

