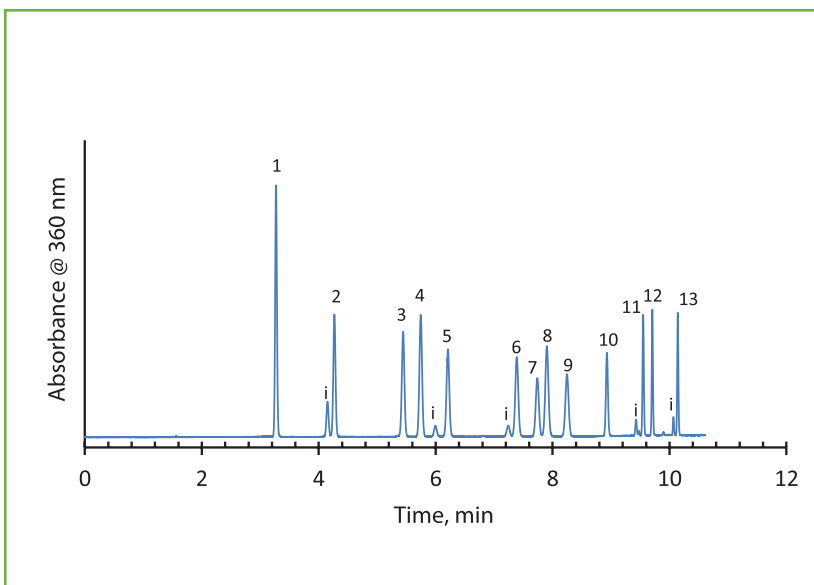




Separation of Carbonyl Compounds as Dinitrophenylhydrazone Derivatives on HALO® C18, 2.7 µm

Application Note 90-DNPH



PEAK IDENTITIES:

1. Formaldehyde-2,4-DNPH
 2. Acetaldehyde-2,4-DNPH
 3. Acetone-2,4-DNPH
 4. Acrolein-2,4-DNPH
 5. Propionaldehyde-2,4-DNPH
 6. Crotonaldehyde-2,4-DNPH
 7. 2-Butanone-2,4-DNPH
 8. Methacrolein-2,4-DNPH
 9. Butyraldehyde-2,4-DNPH
 10. Benzaldehyde-2,4-DNPH
 11. Valeraldehyde-2,4-DNPH
 12. m-Tolualdehyde-2,4-DNPH
 13. Hexaldehyde-2,4-DNPH
- 2,4-DNPH = 2,4-Dinitrophenylhydrazone
i = anti, syn, isomers of the respective DPNH derivatives

TEST CONDITIONS:

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

Part Number: 92814-702

Mobile Phase: 55/45 - A/B

A: Water

B: Acetonitrile/THF (80/20)

Gradient: Time (min) % B

0.0	45
7.5	58
9.0	80
12.0	80

Flow Rate: 1.5 mL/min

Pressure: 355 bar

Temperature: 30 °C

Detection: UV 360 nm, VWD

Injection Volume: 0.3 µL

Sample Solvent: Acetonitrile

Response Time: 0.02 sec

Flow Cell: 2.5 µL semi-micro

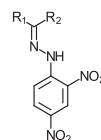
LC System: Shimadzu Prominence UFLC XR

Extra Column Volume: ~14 µL

This separation is based on modified EPA methods 8315 and 554 and achieves baseline resolution of the sample components by the use of a small particle size packing and a mobile phase containing both acetonitrile and tetrahydrofuran (THF). The addition of THF is necessary to achieve this resolution. As a result, peak elution order is also changed.

STRUCTURES:

Peak	R1	R2
1	-H	-H
2	-H	-CH ₃
3	-CH ₃	-CH ₃
4	-H	
5	-H	
6	-H	
7	-CH ₃	
8	-H	
9	-H	
10	-H	
11	-H	
12	-H	
13	-H	



General -2,4-DNPH structure

