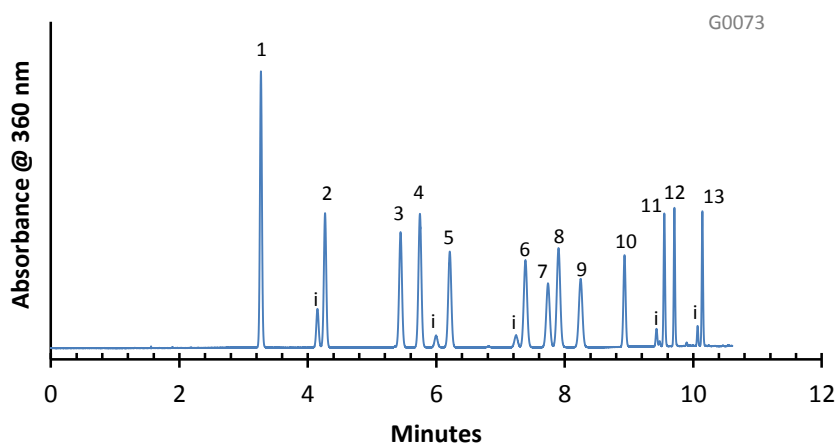


Separation of Carbonyl Compounds as Dinitrophenylhydrazone Derivatives on HALO 2.7µm C18



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 DNPH derivatives.

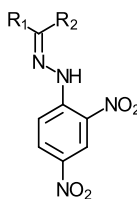
TEST CONDITIONS:

Column: 4.6 x 150 mm, HALO 2.7 µm C18
Part Number: 92814-702
Mobile Phase: A/B: 55/45 (to start)

Time	%B
0.0	45.0
7.5	58.0
9.0	80.0
12.0	80.0

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
ECV: ~14 µL

STRUCTURES:



General -2,4-DNPH structure

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	

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.