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Analysis of DNPH Derivatives using XBridge Phenyl

Waters Corporation

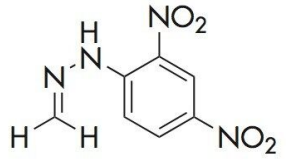
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

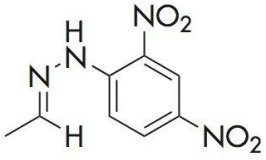
This application brief highlights the analysis of DNPH derivatives using XBridge Phenyl columns.

Introduction

Regulatory agencies around the world are interested in measuring formaldehyde and other aldehydes in the air. Many public health groups are interested in implications of these aldehydes causing respiratory irritation and potentially carcinogenic effects from prolonged exposure. Producers of products that can contribute aldehydes emissions to air and indoor pollutants are manufacturers of materials building and wood products, fabric and textiles, and automotive companies.

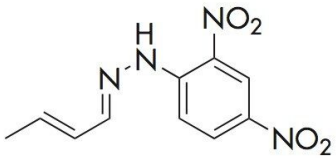


1. Formaldehyde-DNPH

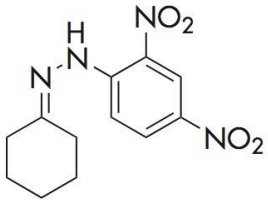


2. Acetaldehyde-DNPH

3. Acetone-DNPH



4. Crotonaldehyde-DNPH



5. Cyclohexanone-DNPH

Experimental

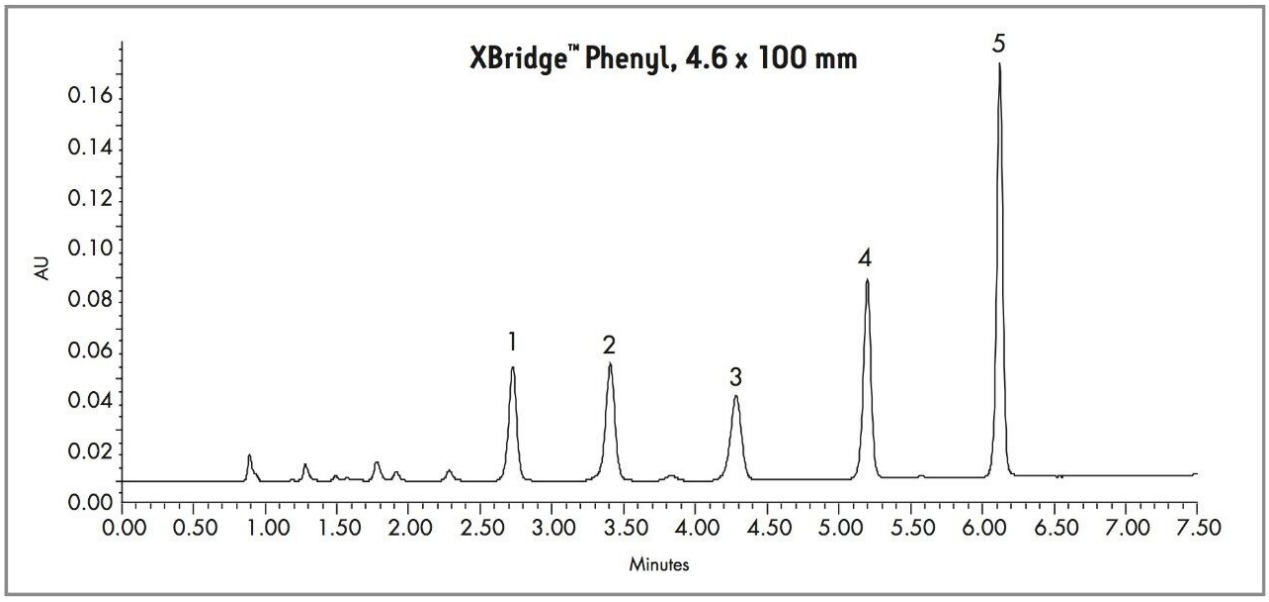
Test Conditions

Columns:	XBridge Phenyl, 4.6 x 100 mm, 3.5 µm p/n: 186003334
Mobile phase A:	H_2O
Mobile phase B:	ACN
Mobile phase C:	0.2% HCOOH in H_2O
Flow rate:	1.2 mL/min
Injection volume:	10 µL
Sample:	Acetaldehyde-DNPH (10 µg/mL), Acetone-DNPH (10 µg/mL), Cyclohexanone-DNPH (10 µg/mL), Formaldehyde-DNPH (10 µg/mL), Crotonaldehyde-DNPH (10 µg/mL) in H_2O/ACN (60/40)
Column temp.:	30 °C
Sample temp.:	15 °C
Detection:	UV @ 254 nm
Sampling Rate:	5 points/sec
Filter Response:	0.2
Instrument:	Alliance 2695 with 2996 PDA

Gradient

Time (min)	%A	%B	%C
0.00	40	50	10
2.67	40	50	10
6.67	0	90	10
7.33	40	50	10
11.00	40	50	10

Results and Discussion



Compounds: 1. Formaldehyde -DNPH 2. Acetaldehyde -DNPH 3. Acetone -DNPH 4. Crotonaldehyde -DNPH 5. Cyclohexanone -DNPH.

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