# Waters column

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Published by Waters Corporation
34 Maple Street
Milford, MA 01757 USA
Tel: 508-478-2000
Toll-free: 1-800-252-4752
Fax: 508-872-1990

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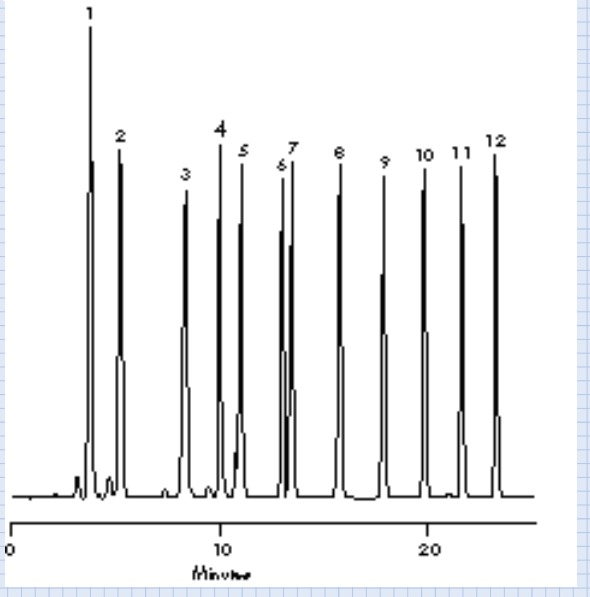
# *Carbonyl Compounds as DNPH Derivatives; EPA Method 554*

***Objective:***

As more and more drinking water production facilities turn to ozonation as a disinfectant, there has been a concomitant need for reproducible and sensitive analytical methods for determination of oxonation related disinfection byproducts (DPBs) in finished waters. Among the most important of these DPBs are aldehydes and ketones. EPA method 554 is a recommended procedure for determination of aldehydes and ketones as dinitrophenylhydrazine derivatives by HPLC following solid phase extraction.

***Details:***

This chromatographic procedure has been developed to provide a superior separation of the 12 EPA method 554 analytes in under 30 minutes.




| | |
|---|---|
| Column: | Symmetry $C_{18}$ 5µm 3.9 mm x 150 mm |
| Mobile Phase: | A: 50% acetonitrile in water |
| | B: Acetonitrile |
| Gradient: | 100% A for 4 min, Then linear gradient to 100% B in 25 min. |
| Flow Rate: | 1.2 mL/min |
| Detection: | UV @ 360 nm (0.12 AUFS) |
| Injection Volume: | 20 µL |

| | |
|---|---|
| 1: Formaldehyde-DNPH | 7: Pentanal-DNPH |
| 2: Acetaldehyde-DNPH | 8: Hexanal-DNPH |
| 3: Propanal-DNPH | 9:Heptanal-DNPH |
| 4: Crotonaldehyde-DNPH | 10: Octanal-DNPH |
| 5: Butanal-DNPH | 11: Nonanal-DNPH |
| 6: Cyclohexanone-DNPH | 12: Decanal-DNPH |

***System:***

A Waters™ 600 S Controller, 616 pump, 712 WISP and 486 Detector were used for this analysis. System Control, data acquisition and reporting were accomplished using the Millennium 2010 Chromatography Manager.

Waters APPLICATIONS NOTES

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