

Solvents

Analysis of industrial waste water

Application Note

Environmental

Authors

Agilent Technologies, Inc.

Introduction

Waste water samples are prepared with K_2CO_3 , (1:1) and a solid-phase microextraction (SPME) in the headspace mode is applied for 30 min at 50 °C. Splitless desorption is applied with pressure programming from 50 to 300 kPa in a large bore liner (0.75 mm ID) to achieve an optimal peakshape for the lower boiling compounds. A fast separation of 35 components is possible within 18 minutes using a narrow-bore thick film column.



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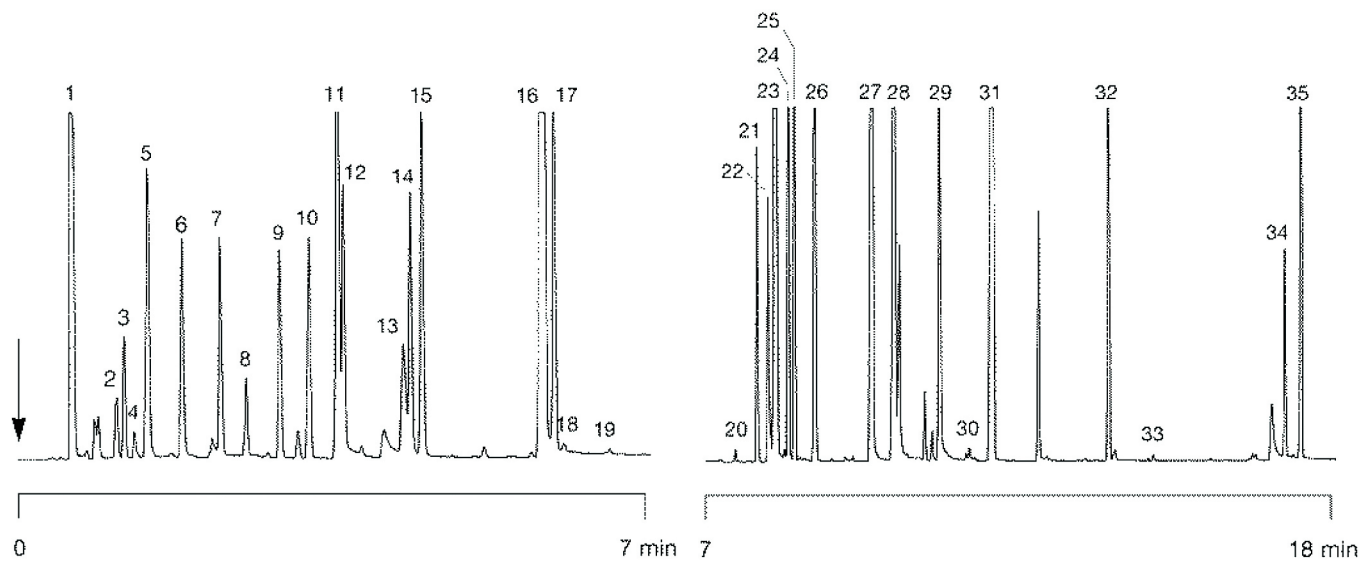
Conditions

Technique : GC-capillary
Column : Agilent CP-Sil 5 CB, 0.15 mm x 25 m fused silica
WCOT (df = 2 µm) (Part no. CP7692)
Pre column : 0.32 mm x 5 m uncoated
Temperature : 40 °C (2 min) → 250 °C, 10 °C/min
Carrier Gas : H₂, 50 - 300 kPa
(0.5 - 3.0 bar, 7.2- 43 psi)
Injector : SPME + Splitless,
0.45 min initial time,
T = 250 °C
Detector : FID
T = 300 °C
Sample Size : 2.5 g + 2.5 g K₂CO₃
Solvent Sample : none

Courtesy : J. van Pul, BASF Antwerp, Belgium

Peak identification

1. methanol	18. unknown
2. acetone	19. unknown
3. 2-propanol	20. unknown
4. unknown	21. ethylbenzene
5. 2-methyl-2-propanol (tert-butanol)	22. m+p-xylene
6. 1-propanol	23. cyclohexanol + cyclohexanone
7. 2-butanone (methyl ethyl ketone)	24. styrene
8. 1,3-dioxolane	25. o-xylene
9. tetrahydrofuran	26. cyclohexenone
10. 2-methyl-1,3-dioxolane	27. aniline
11. 1-butanol	28. N,N-diethylacetamide
12. benzene	29. 2-ethyl-1-hexanol
13. triethylamine	30. unknown
14. 1,4-dioxane	31. nitrobenzene
15. tetrahydropyran	32. naphthalene
16. 1-pentanol	33. unknown
17. toluene	34. biphenyl
	35. phenyl ether



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Printed in the USA

31 October, 2011

First published prior to 11 May, 2010

A01451



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