

VOC Analysis Including 1,4-Dioxane and 1,2-Dichloropropane by GC/MS Using A Zebron™ ZB-624 GC Column

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Overview

Volatile organic compounds (VOCs), both synthetic and naturally-occurring, can be found in virtually any environment. These compounds can potentially cause harm to human health as well as their surroundings. Due to their varying chemical compositions and range of volatilities, a highly selective GC column is required for VOC analysis. A fast and robust GC/MS method was developed using a Zebron ZB-624 GC column. The highly selective stationary phase allowed for identification and quantification of all 28 VOCs including 1,4-Dioxane and 1,2-Dichloropropane, while maintaining a rapid analysis time.

Conditions

Column: Zebron ZB-624
Dimensions: 60 meter x 0.25 mm x 1.40 µm
Part No.: 7KG-G005-27
Recommended Liner: Single Taper, 4 mm ID (part no. AG2-0A10-05)
Injection: Split 25:1 @ 200 °C, 1 µL
Carrier Gas: Helium @ 1.2 mL/min (constant flow)
Oven Program: 60 °C to 70 °C @ 4 °C for 10 min to 80 °C @ 5 °C/min to 200 °C @ 30 °C/min for 4.5 min
Detector: MSD @ 250 °C (SIM mode)

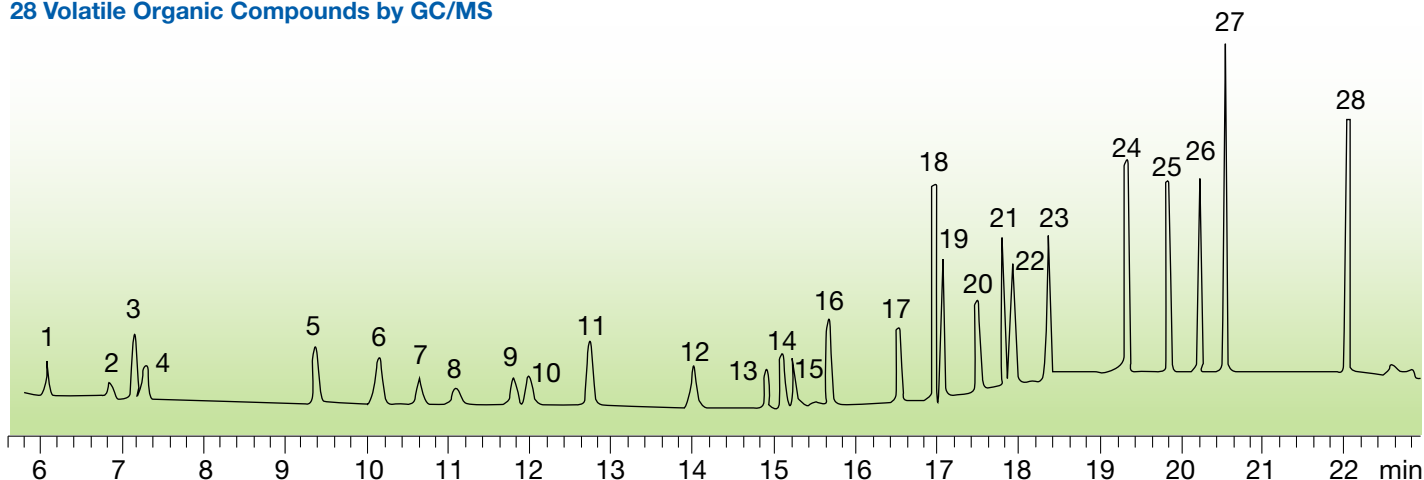
Analytes

Compounds are 10 ppm in Methanol:

- | | | |
|------------------------------|--------------------------------|---------------------------|
| 1. 1,1-Dichloroethene | 11. Fluorobenzene | 21. 1,1,2-Trichloroethane |
| 2. Dichloromethane | 12. Trichloroethene | 22. Tetrachloroethylene |
| 3. MTBE | 13. 1,2-Dichloropropane | 23. Dibromochloromethane |
| 4. trans -1,2-Dichloroethene | 14. 1,4-Dioxane-d8 | 24. m-Xylene |
| 5. cis -1,2-Dichloroethene | 15. 1,4-Dioxane | 25. o-Xylene |
| 6. Chloroform | 16. Bromodichloromethane | 26. Bromoform |
| 7. 1,1,1-Trichloroethane | 17. cis -1,3-Dichloropropene | 27. p-Bromofluorobenzene |
| 8. Carbon tetrachloride | 18. Toluene-d8 | 28. 1,4-Dichlorobenzene |
| 9. Benzene | 19. Toluene | |
| 10. 1,2-Dichloroethane | 20. trans -1,3-Dichloropropene | |



28 Volatile Organic Compounds by GC/MS



App ID 23820



APPLICATION

Ordering Information

Zebtron™ ZB-624 GC Columns

Length (m)	ID (mm)	df (µm)	Temp. Limits (°C)	Part No.
20	0.18	1.00	-20 to 260	7FD-G005-22
30	0.25	1.40	-20 to 260	7HG-G005-27
30	0.32	1.80	-20 to 260	7HM-G005-31
30	0.53	3.00	-20 to 260	7HK-G005-36
60	0.25	1.40	-20 to 260	7KG-G005-27
60	0.32	1.80	-20 to 260	7KM-G005-31
60	0.53	3.00	-20 to 260	7KK-G005-36
75	0.53	3.00	-20 to 260	7LK-G005-36
105	0.53	3.00	-20 to 260	7NK-G005-36

Note: If you need a 5 in. cage, simply add a (-B) after the part number, e.g., 7HG-G005-27-B. Some exceptions may apply. Agilent 6850 and some SRI and process GC systems use only 5 in. cages.

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If Zebtron GC columns do not provide you with equivalent separations as compared to any other GC column of the same phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.