



Method Summary

Determination of VOCs in Waters

Scope and Range

This method describes a procedure for the detection, identification and quantitation of 63 volatile organic compounds that have boiling points typically below 200°C.

Holding time for VOC vials is 14 days.

Validated matrices - Groundwater, Landfill Leachate, Trade Effluent, Crude and Treated Sewage.

Calibration Range - the calibration range is from 2 µg/l to 500 µg/l

LOD - Detection limits are 1-3 µg/l based on 10ml of water/slurry, (see below).

<i>Compound</i>	<i>LOD µg/l Waters</i>	<i>Compound</i>	<i>LOD µg/l Waters</i>
Dichlorodifluoromethane	1	Tetrachloroethene	1
Chloromethane	1	Dibromochloromethane	1
Vinyl Chloride	1	1,2-Dibromoethane	1
Bromomethane	1	Chlorobenzene	1
Chloroethane	1	1,1,1,2-tetrachloroethane	1
Trichlorofluoromethane	1	Ethylbenzene	1
1,1-Dichloroethene	1	p/m-Xylene	1
Carbon Disulphide	1	o-Xylene	1
Dichloromethane	3	Styrene	1
Tert-butyl methyl ether	1	Bromoform	1
Trans-1,2-Dichloroethene	1	Isopropylbenzene	1
1,1-Dichloroethane	1	1,1,2,2-Tetrachloroethane	1
Cis-1,2-Dichloroethene	1	1,2,3-Trichloropropane	1
2,2-Dichloropropane	1	Bromobenzene	1
Bromochloromethane	1	Propylbenzene	1
Chloroform	1	2-Chlorotoluene	1
1,1,1-Trichloroethane	1	1,3,5-Trimethylbenzene	1
1,1-Dichloropropene	1	4-Chlorotoluene	1
Carbon tetrachloride	1	Tert-Butylbenzene	1
1,2-Dichloroethane	1	1,2,4-Trimethylbenzene	1
Benzene	1	Sec-Butylbenzene	1
Tert-amyl methyl ether	1	4-Isopropyltoluene	1
Trichloroethene	1	1,3-Dichlorobenzene	1
1,2-Dichloropropane	1	1,4-Dichlorobenzene	1
Dibromomethane	1	n-Butylbenzene	1
Bromodichloromethane	1	1,2-Dichlorobenzene	1
Cis-1,3-Dichloropropene	1	1,2-Dibromo-3-Chloropropan	1
Toluene	1	1,2,4-Trichlorobenzene	1



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Trans-1,3-Dichloropropene	1	Hexachlorobutadiene	1
1,1,2-Trichloroethane	1	Naphthalene	1
1,3-Dichloropropane	1	1,2,3-Trichlorobenzene	1

Principle

Preparation and Extraction

A clean 20ml clear glass headspace sample vial, containing 1 flat scoop (~5.8g) of sodium sulphate has 500µl of acid matrix modifier added to it. 10ml of the water or slurry sample is then added to the vial and 10µl of the Surrogate/Internal Solution is also added, below the surface of the water. The septum cap is crimped on securely and the sample is then mixed well and labelled appropriately.

Analysis

Analysis is undertaken by an Agilent 6890 Gas Chromatograph with a Gerstel MPS2 headspace sampler and Mass Selective Detector (MSD) capable of detecting the component target ions.

Interferences

Any compound or mixture with a similar volatility to the target analytes, which may co-elute with the target compounds and hinder or mask their identification, e.g. solvents, hydrocarbons (petrol/kerosene).