



Method Summary

Determination of BTEX and GRO in Waters

Scope and Range

This method describes a procedure for determining the concentration of Gasoline Range Organic Hydrocarbons (GRO), in the carbon number range C₅ to C₁₂, including BTEX components namely Benzene, Toluene, Ethyl Benzene and Xylene isomers (o-, m- and p- isomers), and MTBE (Methyl tertiary butyl ether) & TAME (Tertiary amyl methyl ether). Method applies to waters and leachates.

Analyte	LOD (µg/l)	Upper Limit (µg/l)
MTBE	3	4000
TAME	4	4000
Benzene	7	4000
Toluene	4	4000
Ethyl Benzene	5	4000
m/p-Xylene	8	8000
o-Xylene	3	4000
GRO (C >6-8)	10	n/a
GRO (C >8-10)	10	n/a
GRO (C >10-12)	10	n/a
GRO (C5-C12)	50	72,000

Principle

Preparation and Extraction

A level scoop of Sodium Chloride is added to a clean 5ml headspace vial using a 2.5ml scoop. 5ml of sample is added to the vial and the cap is placed on top of the vial but not crimped in place. The cap is then removed and 10µl of working reference standard is added beneath the surface of the water. The cap is then crimped in place.

Analysis

Analysis is undertaken by gas chromatography with flame ionisation detection (GC-FID), e.g. - Agilent 6580 gas chromatograph with Gerstel or CTC headspace auto sampler and FID detector.

Interferences

Flame ionisation is a non-specific means of detection, therefore any substances either petroleum or non-petroleum in origin, that co-elute with any of the target compounds, will interfere with the determination e.g. solvents.