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Page 1 of 1

Method Summary**Determination of C4-C12 Total Petroleum Hydrocarbons in Atmospheric, Subslab and Soilgas samples using Gas Chromatography with Mass Selective Detection****Scope and Range**

This method is suitable for the detection, identification and quantitation of C4-C12 total petroleum hydrocarbons (TPH) including banding and speciation into aliphatic and aromatic fractions.

This method is applicable to atmospheric, sub-slab and soil-gas samples taken using passivated canisters or bottle-vacs.

References

Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), December 2009, Massachusetts Department of Environmental Protection

Principle

Preparation and Extraction:

Samples should be received from the client in passivated canisters or bottle-vacs at close to atmospheric pressure, <5" Hg. Sample containers received with a vacuum >5" Hg are pressurised to ~19.7psia before analysis.

A known volume of sample is focussed onto appropriate in-line traps and spiked with internal standards. Water is removed from the sample and the focussed sample is injected into the GC.

Analysis:

The analysis is conducted on an Agilent 7890 Gas Chromatograph (GC) system using an Agilent 5975C Mass Selective Detector (MSD).

Analytes are separated on an appropriate analytical column before being detected and quantified by a mass selective detector.

Analyte responses are quantified against a 6-point calibration curve and corrected against internal standards.

Interferences

Some solvents, such as dichloromethane and hexane, can be present in the atmosphere of the laboratory. To avoid contamination samples are stored and prepared in areas free from solvents.

Raw GC-MS data from all blanks is evaluated for interferences. Any source of interference is determined and appropriate corrective action taken to eliminate the problem.

Contamination by carry over can occur whenever high-level and low-level samples are analysed sequentially. If high concentrations are suspected then the sample is screened using a smaller sample volume and blanks analysed after the suspect sample.