



Method Summary

Determination of Petroleum Hydrocarbons by Flash GC-FID in the Carbon Range >C6 to C40

Scope and Range

Petroleum hydrocarbons are a complex mixture of aliphatic and aromatic species. This method describes a procedure for the analysis of solvent (n-hexane) extractable petroleum hydrocarbons (EPH) in the carbon number range >C6 to C40 by gas chromatography (GC) with flame ionisation detection (FID). This method is applicable for contaminated soils. The method is accredited to ISO17025 for soil samples for the carbon number range >C8 to <C40 and is validated for sand, loam and clay matrices. Analysis carried out on any other matrix will not be accredited.

Test	LOD
TPH C6-C40	<10 mg/kg

Detection limits for this method are based on 5±1g of soil being used for extraction, extracted soil samples, however the detection limits will vary if less sample is available for extraction. Any dilution factor (DF) required is taken into account in the calculation of results.

Principle

Preparation and Extraction

Samples should be collected in glass containers and kept at 4±3°C until ready for extraction.

5g of "as-received" sample is weighed and extracted using a hexane/acetone solvent mix. Analytical reagents are added and a portion of the sample extract is sent to the analysis laboratory.

Analysis

The vials are loaded onto the GC autosampler along with vials containing standards, blanks, and AQC samples. An AQC sample and a blank are extracted with and run in every batch up to twenty samples total.

The standards used for quantitation are a mixture of Diesel and Lube oil and a five-point calibration is run. Any extracts with concentrations higher than the top standard are diluted and re-run until they fall within the calibration range.

Interferences

Interferences co-extracted from the sample will vary considerably from source to source. If analysis of an extracted sample is prevented due to interferences, it may be necessary to dilute the sample before GC analysis in order to reduce the effect of interferences.

Flame ionisation is a non-specific means of detection and any substances that co-elute from the chromatographic column with components of interest will interfere with this determination.