

Method Number: TM 235

Updated: 19/12/2023

Issue Number: 11

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**Method Summary****Determination of Total Petroleum Hydrocarbons (Oil and Grease) in Waters by Infra-red Spectroscopy****Scope and Range**

This method is suitable for the determination of total petroleum hydrocarbons and mineral oil content of waters.

The method is accredited to ISO17025 for TPH in surface water, treated sewage effluent and trade effluent. Mineral oil content using the florisol clean-up is not accredited.

The detection limit for waters is 1 mg/l, with a maximum content of 80mg/l, without dilution.

The calibration range is 0-400mg/l.

References

The Determination of Hydrocarbon Oils in Waters by Solvent Extraction, Infra Red Absorption and Gravimetry 1983,(MEWAM), HMSO, London

Analysis of Hydrocarbons in Waters - A Review, plus an Ultra Violet Fluorescence Spectrophotometric Method 1988, HMSO, London

Analysis of Hydrocarbons in Soils and Waters using Infra Red, USEPA Method 418.1.
DIN standard 38 409 Hartlepool 18 1981

Principle

The sample is extracted into tetrachloroethylene (TCE) and then chemically dried and transferred to a quartz cell for analysis by Fourier transmission Infra-red Spectrophotometry.

Three absorbance peaks in the scanned spectrum are identified and measured automatically. The heights of these peaks are compared to those found in standards of known concentration to give a result for the sample.

The sample can also be analysed for mineral oil content by adding activated florisol to remove the aromatic (grease) content and re-scanning, with the grease content calculated as the difference between the total and the mineral oil.

Interferences

The method is a basic scanning method for C-H bonds, and as such anything in the sample with C-H bonds will absorb at the wavenumbers used for the analysis. Any major interference seen in the scan will result in the sample being NDP'd for this analysis and another method such as GC-FID being recommended.