

**Method Number: TM 022**

Updated: 15/09/23

Issue Number: 37

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**Method Summary****Determination of Total, Non-Volatile and Volatile Suspended Solids in Aqueous Samples****Scope and Range**

This method has accreditation to ISO 17025 for Total suspended solids, Volatile and Non-volatile suspended solids in ground water, surface water, landfill leachate, treated and untreated industrial water, sewage effluents and saline water.

Neutralised suspended solids and Non settleable solids are also ISO17025 accredited when prepped by PM210.

TSS is also accredited to MCERTS for Industrial effluent and treated and untreated sewage effluent.

Detection limit: TSS 2 mg/l for 200ml of sample, VSS 7mg/l for 200ml of sample

Working range: 2 - 2000 mg/l

**References**

Methods for the Examination of Waters and Associated Materials.

Suspended, Settleable and Total Dissolved Solids in Waters and Effluents

HMSO 1980 ISBN 011 751957X

BS 2690: Part 120: 1981.

**Principle**

Samples are collected in 1 litre PET bottles and kept in fridge until required. Samples must be thoroughly homogenised before analysis.

Total Suspended Solids (TSS) method measures both organic and inorganic solids in water that can be trapped by a filter. The particle size retained is determined by the pore size of the filter used (GFC retains >1.2 microns).

Samples can be pre-treated by neutralising and settling, to produce the following variations of suspended solid results

For settled results, the reported non-settleable portion is the portion that remains in suspension and the reported settleable portion is the portion that settles out of suspension.

**TSS**

Non Neutralised Total

No pre-treatment is required.

**Neutralised Total**

The sample is homogenised and the pH of the sample measured using the pH meter.

The pH of the sample is adjusted to pH 7.0 ± 1.0 by the addition of nitric acid or sodium hydroxide.



## **Method Summary**

### **Determination of Total, Non-Volatile and Volatile Suspended Solids in Aqueous Samples**

#### Neutralised 1 hour Settled

The sample is homogenised, and a portion of sample is poured out.

The pH of the sample is measured using the meter.

The pH of the sample is adjusted to  $\text{pH } 7.0 \pm 1.0$  by the addition of nitric acid or sodium hydroxide.

The sample is then allowed to settle for 60 minutes.

After settling 100 ml of settled sample is removed by pipette such that the sediment is not disturbed.

#### Non-Neutralised Settled

The sample is homogenised and a portion of sample is poured out.

The sample is allowed to settle for 60 minutes.

After settling 100 ml of settled sample is removed by pipette such that the sediment is not disturbed

#### Neutralised 5 Minute Settled

The sample is homogenised, and a portion of sample is poured out.

The pH of the sample is measured using the meter.

The pH of the sample is adjusted to  $\text{pH } 7.0 \pm 1.0$  by the addition of nitric acid or sodium hydroxide.

The sample is then allowed to settle for 5 minutes.

After settling 100 ml of settled sample is removed by pipette such that the sediment is not disturbed.

## **Interferences**

Very oily samples will be washed with industrial methylated spirits to minimise interferences.

Sample that contain large floating particles (e.g. leaves or twigs) or submerged agglomerates (e.g. stones) of non-homogeneous materials, which are not representative of the sample.