Solids, residue at 105°C, suspended, gravimetric

Parameter and Code:
Solids, residue at 105°C, suspended, I-3765-85 (mg/L): 00530

1. Application

This method may be used to determine the suspended-solids concentration of any natural or treated water or industrial waste.

2. Summary of method

2.1 Suspended solids are those that are retained on a glass-fiber filter. The determined value is fairly representative of the sample but does not accurately represent the suspended sediment concentration of a stream; suspended solids values should not be confused with sediment concentration, which is the more accurate measure of material in suspension.

2.2 The unfiltered sample is mixed thoroughly and an appropriate volume is rapidly poured into a graduated cylinder. The suspended solids are collected on a glass-fiber filter, and the insoluble residue is dried and weighed.

3. Interferences

Precipitation in the sample during storage, such as iron, will produce erroneously high results.

4. Apparatus

4.1 *Desiccator,* charged with indicating silica gel or other efficient desiccant.

4.2 *Filtration apparatus,* consisting of suction flask, gooch crucible, glass-fiber filter disk, and suitable holder.

4.3 *Oven,* 105°C, uniform temperature throughout.

6. Procedure

6.1 Shake the sample bottle vigorously and rapidly pour a suitable volume into a graduated cylinder. Record the volume.

6.2 Quantitatively collect the suspended material from the sample on a tared glass-fiber filter disk. A blank should be determined with each set of samples.

6.3 Wash the suspended material on the filter sparingly with demineralized water.

6.4 Dry the residue and filter disk overnight at 105°C.

6.5 Cool in a desiccator and weigh the filter disk containing the dry residue to the nearest 0.1 mg. Record the weight.

7. Calculations

7.1 Apply a correction for any loss shown by the blank.

7.2 Determine suspended solids in milligrams per liter as follows:

$$\text{Suspended solids, mg/L} = \frac{1000}{\text{mL sample}} \times \text{mg residue}$$

8. Report

Report solids, residue at 105°C, suspended (00530), concentrations as follows: less than 1,000 mg/L, whole numbers; 1,000 mg/L and above, three significant figures.

9. Precision

Precision data are not available for this method.

Reference

Guy, H. P., 1969, Laboratory theory and methods for sediment analysis: Techniques of Water-Resources Investigations of the U.S. Geological Survey, book 5, chapter Cl, 58 p.