



Method Summary

Determination of Biochemical Oxygen Demand

Principle

This test is an indicator of the amount of biodegradable material present in a sample. Samples are seeded with bacteria which utilise the available organic matter as sources of carbon and nitrogen and in doing so they consume the available oxygen. The more biodegradable material present the more the oxygen will be depleted.

Scope and Range

This method is accredited to ISO 17025 for surface water, groundwater, landfill leachate and treated and untreated sewage effluents and trade effluents, including settled samples

Detection limit: 1 mg/l

Preparation and Extraction

Filtered BOD: the samples are filtered through a GF/C filter before analysis.

Settled BOD: the samples are settled for one hour and the top liquid portion removed for analysis.

Total "True" BOD: the samples are well shaken before analysis. The test is performed in duplicate using varying sample aliquot to cover as large a range of the result as possible.

Analysis

The sample is neutralised and an aliquot of the sample is mixed with aerated deionised water, ATU and seeded with a bacteria.

The dissolved oxygen concentration is then measured (DO_0) with a DO electrode and meter.

The samples are incubated at 20°C for 5 days after which the dissolved oxygen is re-measured (DO_5).

The difference in the dissolved oxygen content from Day 0 to day 5 is used to calculate the amount of oxygen used by the bacteria as they digested the sample and it is expressed as BOD in mg/l O_2 .

Interferences

BOD inhibitors include heavy metals, bactericides, polythionates, herbicides and free chlorine as they inhibit oxygen uptake.

Oils can damage the DO meter membrane.