

METHOD STATEMENT



Determinand:

Sulphate Reducing Bacteria

Matrix:

Water or deposits

Principle of Method:

The SRB test is used to detect the presence of micro-organisms that can generate sulphides. These organisms are often associated with microbially-induced corrosion (MIC), and taste and/or odour problems in water systems.

The sample is inoculated into selective microbiological culture medium, routinely used is 1% Modified Postgate B broth, or Modified API RP-38 broth. The presence and growth of sulphate reducing bacteria is indicated by the medium turning black due to the production of ferric sulphide, following incubation for up to 21 days. Examinations are carried out at 7, 14 & 21 days.

A 5-day test may be performed upon customer request. The 5-day test must be performed in quadruplicate (four tubes/vials inoculated) to ensure a greater accuracy. This however will still not achieve the accuracy of the 21 day test (92%, as given in BS8552:2012, see references).

Sampling and Sample Preparation:

Samples should be taken in sterile bottles containing sodium thiosulphate. Once taken, microbiological samples should be transferred immediately to dark storage conditions and kept at a temperature between 2 - 8°C for transport to the laboratory. If samples are not analysed immediately on receipt in the laboratory, they should be kept at a temperature between 2 - 8°C, in dark conditions until analysis commences.

Interferences:

Analysis of black deposits, dark coloured water samples or samples of deposits containing sulphide may make interpretation of the test difficult.

Performance of Method:

Sulphate-reducing bacteria are expressed as Detected or Not Detected in 1ml or 1 gram of sample.

References:

BS 8552: 2012. Sampling of Water from Building Services Closed Systems. BSI. 2012.

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Beech, I., Bergel, A., Mollica, A., Flemming, H., Scotto, V., Sand, W. Simple methods for the investigation of the role of biofilms in corrosion. Microbially influenced corrosion of industrial materials. 2000.

The Microbiology of Drinking Water (2004) - Part 12 - Methods for the isolation and enumeration of micro-organisms associated with taste, odour and related aesthetic problems. Environment Agency.