

METHOD STATEMENT



Determinand:

Thiocyanate

Matrix:

Leachates, effluents and waste waters

Principle of Method:

The test is carried out on a filtered test portion of sample. At an acidic pH ferric ions (Fe^{3+}) and SCN^- form an orange colour suitable for quantitation of the analyte by colorimetry using a spectrophotometer at a wavelength of 480 nm.

Sampling and Sample Preparation:

This test is carried out on a sample filtered through a 0.45 μm cellulose membrane.

The filtrate is transferred to a test tube marked with a unique alphanumeric sample identifier and taken through to the Konelab.

Samples are stable for 2 days (In-House Data) from sampling.

Interferences:

The turbidity and colour of the sample will cause interference, however this is compensated for as part of the method. The addition of mercuric nitrate removes the colour due to the thiocyanate, thus allowing measurement of the absorbance attributable to interferences in the method.

Performance of Method:

Range of application 0.08 to 5.0 mg/l
Limit of detection 0.0796 mg/l
Routine reporting limit 0.08 mg/l

Determinand	Low standard		High standard	
	% RSD	% Bias	%RSD	% Bias
Thiocyanate	3.74	-2.14	5.58	-4.11

Determinand	Final Effluent		Trade Effluent		Landfill Leachate	
	% RSD	Rec. %	% RSD	Rec. %	% RSD	Rec. %
Thiocyanate	2.94	98.75	3.29	95.19	2.88	98.78

Determinand	Surface water		Groundwater		Soil Leachate	
	% RSD	Rec. %	% RSD	Rec. %	% RSD	Rec. %
Thiocyanate	3.37	95.55	2.55	96.71	3.84	98.50

Uncertainty of Measurement:

The reported uncertainty is an expanded uncertainty calculated using a coverage factor of 2, which gives a level of confidence of approximately 95%.

Determinand	Uncertainty of Measurement %
Thiocyanate	8.89

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References:

Standard methods for the Examination of Water and Wastewater 19th Edition Method 3500 Cr D. APHA, AWWA, WEF . WASHINGTON.DC. ISBN 087553;223.3

Determination of thiocyanate etc. - Methods for the Examination of Waters and Associated Materials. 1985. SO. London ISBN 0117519340.