

**Method Number: TM 227**

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**Method Summary****Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate in Waters and Leachates using the "Skalar SANS+ System" Segmented Flow Analyser****Scope and Range**

This method is suitable for the determination of total cyanide, free (easily liberatable) cyanide and thiocyanate in waters and leachates (mg/l).

The detection limit for waters is 0.05mg/l, with a maximum content of 5mg/l, without dilution.

This method is accredited to ISO17025 for groundwaters, treated and untreated sewage effluents, potable water, landfill leachates and trade effluents.

Yes

**References**

Standard methods for the examination of waters and wastewaters 20<sup>th</sup> Edition, AWWA/APHA Method 4500

**Principle**

Preparation and Extraction:

Samples should be taken using the preserved bottle ALE245 (sodium hydroxide), without rinsing the bottle. Preserved samples should be stored at 1-5°C until ready for analysis.

8-10ml of each sample is filtered through 0.45µm filters into a disposable tube. Tubes are capped and racked up until they are transferred to the instrument autosampler.

Analysis:

An aliquot of the sample is passed through a system where it is split into 3 channels, one for each of the species of cyanide. The sample undergoes reactions such as pH buffering, UV digestion and distillation (depending on the species of cyanide) before a colouring agent is added and the sample is passed through a detector. The intensity of colour passing the detector is plotted against time to create a chart with a peak for every sample. The height of this peak is compared to a calibration graph derived from the heights obtained for a set of standards of known concentration, to give a result for the sample.

Complex cyanide can be calculated as the difference between the total cyanide and the easily liberatable cyanide.

**Interferences**

Strong oxidising agents such as chlorine may oxidise cyanide to cyanate, producing a low result. Presence of sulphides may cause easily liberatable cyanide to convert to thiocyanate.