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## **Method Summary**

### **Determination of Volatile Fatty Acids (VFAs) in Liquid Matrices and Sludges by On-column Gas Chromatography**

#### **Scope and Range**

The amount of volatile fatty acids in anaerobic digester liquors is used as an indicator of digester condition where an increase in VFA concentration characterises a malfunction of the digester. The nine VFAs analysed by this method are: Acetic, Propionic, Isobutyric, Butyric, Isovaleric, Valeric, Isocaproic, Caproic, and Heptanoic acid. This method can also be used for analysis of environmental waters, leachates and sludges.

The LOD for each analyte is 10 mg/l, with the exception of heptanoic acid which is 11 mg/l. The LOD will increase if dilutions are required.  
The linear range for the method is 10.0 mg/l to 1000.0 mg/l in the sample.

#### **Principle**

##### **Preparation and Analysis**

Samples are filtered and run directly on a GC-FID. Compounds are identified based on retention time.

#### **Interferences**

Solvents, reagent glassware and other sample processing hardware may yield artefacts and/or interferences to sample analysis. All these materials must be demonstrated to be free from interferences under the conditions of the analysis. This is undertaken by analysis of method blanks.

Interferences from the sample will vary considerably from source to source. If analysis of an extracted sample is prevented due to interferences it may be necessary to raise the detection limit.