

ChemScan[®]

PROCESS ANALYZERS

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ChemScan[®] Method Summary #168 Sulfite

Background

Sulfite (SO_3^{2-}) is frequently used in water treatment applications as an oxygen suppressing agent. In boiler water, sulfite is used to eliminate dissolved oxygen in feed water, which could otherwise promote corrosion within the boiler system. In wastewater applications, sulfite is found in effluent that has been dechlorinated with sodium sulfite or with sulfur dioxide.

ChemScan Analysis Method

ChemScan has two principal analysis methods. Both rely on the interaction between sulfite and an oxidant.

The first method is a variation of the Iodometric Method (Standard Method 4500-SO₃-B), where free iodine is liberated by the reaction between sulfite and iodine-iodate reagent. Iodine has strong uv absorbance and can be detected directly by ChemScan without the need for colorimetric indicators. The presence of other oxidizable materials such as iron or copper can be measured and compensated by ChemScan as a step in the analysis procedure.

The second method is based on addition of an excess of potassium permanganate, followed by analysis after a fixed time interval.