



Technical Data Sheet

Sulfite Iodometric Method

Applications and Industries: Process water, boiler water, white wine; Textile and pulp and paper industries

References: ASTM D 1339-84, Sulfite Ion in Water, Test Method C. APHA Standard Methods, 22nd ed., Method 4500-SO₃²⁻ B - 2000. USEPA Methods for Chemical Analysis of Water and Wastes, Method 377.1 (1983).

Chemistry: This test kit employs the iodometric chemistry. In an acidic solution, a starch indicator is used to indicate the endpoint of the iodide-iodate titration of sulfite. Results are expressed as ppm (mg/L) SO₃.

Sample Handling: Sulfite is rapidly destroyed by atmospheric oxygen. Contact with air must be minimized and sample manipulation (shaking, filtering, etc.) should be avoided. Analysis should be performed immediately after collection. Sample temperatures should be below 50°C at the time of analysis.

Interference Information:

Sulfur dioxide, thiosulfate, bisulfite, and metabisulfite are measured quantitatively with this chemistry. Correction factors are available to convert kit results to ppm for each of these analytes.

Other reducing agents (e.g. sulfide, ferrous iron, etc.) will interfere positively.

Sulfamic acid is added to the sample during analysis to prevent interference from nitrite.

To minimize oxidation of sulfite to sulfate by metals such as copper, the reagent is formulated with EDTA.

Sample pHs above 8 may cause erroneous results.

Ascorbic acid (Vitamin C) will cause false high test results. The sample can be pretreated with benzoquinone to prevent the ascorbic acid interference. Details are available from CHEMetrics' Technical Services Department.

Interpretation of Results: At the endpoint of this titration, the color of the solution in the test ampoule changes from blue to colorless. If the Titret ampoule is filled with sample but the color of the solution remains blue (i.e. does not change to colorless), the sulfite concentration is below the test range. If the solution in the ampoule changes to colorless immediately upon introduction of the first small dose of sample, the sulfite concentration is above the test range.

Safety Information: Safety Data Sheets (SDS) are available upon request and at www.chemetrics.com. Read SDS before using these products. Breaking the tip of an ampoule in air when a valve assembly is not attached may cause the glass ampoule to shatter. Wear safety glasses and protective gloves.

Available Analysis Systems: Titrimetric: Titrets®

Storage Requirements: Products should be stored in the dark and at room temperature.

Shelf Life: *When stored in the dark and at room temperature:* The sulfite Titrets kits have shelf lives of 2 years.

Accuracy: Due to the non-linear nature of the test scale, the accuracy of these tests varies with the location of the test result on the scale. At twice the minimum concentration for a particular kit range, the accuracy is ± 10% error.

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