

Determination of total SO₂ (free and bound) in wine, must and other food samples
Test-kit for 32 determinations on the RIDA®CUBE SCAN instrument (340 nm)

For in vitro use only
Store between +2 and +8°C

Principle

Total sulfite is determined at an basic pH value which allows releasing SO₂ from binding partners (e.g. Acetaldehyd). Sulfite will react stoichiometrically with a specific chromogen which is measured at 340 nm. Ascorbic acid and other reductones do not react.

Reagents

- # 1: 32 tubes with approx. 800 µl reagent 1 (buffer)
- # 2: 32 caps with approx. 200 µl reagent 2 (chromogen)
- # 3: one RFID card (Radio Frequency Identification)

The reagents are stable up to the end of the indicated month of expiry, if stored at 2 - 8 °C. Do not freeze the reagents. Let the reagents reach the laboratory temperature before use (20 - 25 °C).

The general safety rules for working in chemical laboratories should be applied. Do not swallow! Avoid contact with skin and mucous membranes.

This kit may contain hazardous substances. For hazard notes on the contained substances, please refer to the appropriate material safety data sheets (MSDS) for this product, available online at www.r-biopharm.com. After use, the reagents can be disposed of with the laboratory waste. Packaging materials may be recycled.

Sample preparation

- Sulfur dioxide is volatile and sensitive to oxidation, so losses can occur
- The samples must be stored in a closed container, warmed up to room temperature and opened shortly before testing
- Use clear and liquid samples directly, turbid solutions have to be centrifuged (filtering would cause losses of SO₂)
- Wine can be used directly





Assay specifications

The assay specifications are saved on the RFID card and the application is executed automatically by the instrument.

Wavelength: 340 nm
Temperature: 37 °C
Calibration: calibration curve is saved on RFID card
Test sequence: sample + R1 / mix / 2 min / A1 / R2 / mix / 5 min / A2
Sample volume: 20 µl (Basic) or 100 µl (Sensitive)
The required volume must be pipetted precisely into reagent 1 (test tube).

The sample volume is 20 µl or 100 µl. For the sensitive application, it is also possible to pipette any dilution with 100 µl total volume (for example 50 µl sample and 50 µl water). Results must be recalculated accordingly.

Handling procedure

Place the RFID Card on the instrument	
Enter sample data into tablet app.: - identification - volume (20 or 100 µl)	
Pipette the sample into the test-tube (reagent 1)	
Close the tube with the cap (reagent 2), insert it into the instrument and close the door	

Test results

The results are given in mg/l by the instrument, and following ranges are recommended:

- from 20 to 300 mg/l for the basic application (20 µl)
- from 5 to 60 mg/l for the sensitive application (100 µl)

Notes

1. When iodometric titration is performed via a simple alkaline treatment (without distillation), the method will measure all reducing substances in addition to the SO₂. The colorimetric method measures only SO₂, so it is normal to obtain lower results.
2. It is necessary to control each run with a quality control. For this purpose, it is recommended to use sodium metabisulphite (Na₂S₂O₅), which seems to be more stable than sodium sulphite (Na₂SO₃). But it is not stabilized as the kit calibrator, so it should be prepared **freshly each day**. Do not use glass but plastic vials like Eppendorf cups. If the deviation of this quality control is higher than 10%, it is recommended to measure the reagent blank with a water sample, and to subtract it from all future sample results.
3. Use only fresh bi-distilled water to prepare samples and controls, otherwise oxidation of SO₂ could occur.

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