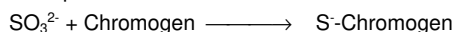


Determination of free SO<sub>2</sub> in wine, must and other food samples  
 Test-kit for 32 determinations on the RIDA®CUBE SCAN instrument (340 nm)

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

## Principle

The free sulphite is determined with a specific colour reagent at an acidic pH value. The amount of chromogen is stoichiometrically related to the amount of sulphite present in the sample, and is measured on a photometer at 340 nm.



## 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](http://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 SO<sub>2</sub>)
- 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
Application 1	"Sensitive": sample + R1 / mix / 2 min / A1 / R2 / mix / 5 min / A2
Application 2	"Creep reaction": sample + R1 / mix / 2 min / A1 / R2 / mix / 15 min / A2 / 5 min / A3
Sample volume:	100 µl (both applications) The required volume must be pipetted precisely into reagent 1 (test-tube).

The sample volume is 100 µl for both applications. Because of this high volume, interferences from the sample matrix may occur. In this case the samples must be pre-diluted, or they can be diluted directly into the cuvette (e.g. 50 µl sample and 50 µl water). The total volume must stay at 100 µl, and results must be recalculated according to the dilution factor.

The two applications differ in the test sequence. The "Sensitive" application works in the normal way, and the incubation time has been set to 5 min in order to minimize a possible creep reaction. When using the application „Creep reaction“, the main and the creep reaction are measured during 15 min where they cannot be differentiated. After that the creep reaction is measured during 5 min (A3) and subtracted from the result with the formula  $\Delta A = (A_2 - df \cdot A_1) - 3 \times (A_3 - A_2)$ , with  $df = 0.818$ .

## Handling procedure

Place the RFID Card on the instrument	
Enter sample data into tablet app.: - identification - application ("Sensitive" or "Creep reaction")	
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

For both applications, the results are given in mg/l by the instrument, with a recommended range from 4 to 60 mg/l (100 µl sample in both cases)

If a creep reaction takes place with specific samples, it will lead to an over-estimation of the results with the application "Sensitive". If such a creep reaction is suspected, the samples must be tested with the application "Creep reaction".

## 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 SO<sub>2</sub>. The colorimetric method measures only SO<sub>2</sub>, 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 (Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>), which seems to be more stable than sodium sulphite (Na<sub>2</sub>SO<sub>3</sub>). It should be prepared **freshly each day**. Do not use glass but plastic vials like Eppendorf cups.
3. If the deviation of this quality control is higher than 10 %, it is necessary to measure the reagent blank with a water sample, and to subtract it from all future samples results.
4. Use only fresh bi-distilled water to prepare samples and controls, otherwise oxidation of SO<sub>2</sub> could occur

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