



Free Sulphite (FSO₂) (K-SULPH) Procedure for ChemWell®-T Auto-Analyser

Requirements:

- Total and Free Sulphite Assay Kit (K-SULPH) (provides ~ 400 assays).
- K-SULPH (FREE) ChemWell®-T assay file.
- Use in association with the Total and Free Sulphite Assay Kit (K-SULPH) product data booklet.

Use:

For the specific measurement of free sulphite (FSO₂) especially in wines, fruit juices, beverages and food products.

For specific sample preparation methods refer to the Total and Free Sulphite Assay Kit (K-SULPH) data booklet.

Assay Principle:

The Free Sulphite (FSO₂) assay is based on the reaction principle of SO₂, fuchsin and aldehyde binding.

Procedure:

Prepare the assay reagents and calibrators and use with the K-SULPH (FREE) ChemWell®-T assay file.

Total and Free Sulphite Assay Kit (K-SULPH) Components:

- Bottle 3: Free Sulphite Reagent 1 (40 mL)**
Contains sodium azide (0.05% w/v) as a preservative.
Stable for > 18 months at room temperature.
- Bottle 4: Free Sulphite Reagent 2 (20 mL)**
Contains sodium azide (0.05% w/v) as a preservative.
Stable for > 18 months at room temperature.
- Bottle 5: Sulphite Standard**
Sodium sulphite (5 g).
Stable for > 5 years at room temperature.

Preparation of Assay Reagents:

K-SULPH (FREE) R1:

Use bottle 3 (Free Sulphite Reagent 1) as supplied.

K-SULPH (FREE) R2:

Use bottle 4 (Free Sulphite Reagent 2) as supplied.

Calibrators:

To prepare the K-SULPH (FREE) 4 calibrator (150 mg/L) weigh 1 g of citric acid into a 1 L volumetric flask, make to 1 L with distilled water and dissolve. Accurately add 295 mg of bottle 5 (Sulphite Standard) and dissolve.

Prepare on the day of use. Stable for 1 day at room temperature.

Use serial dilutions of K-SULPH (FREE) 4 in 0.1 % (w/v) citric acid to prepare K-SULPH (FREE) 2 and K-SULPH (FREE) 3.

K-SULPH (FREE) 1: 0 g/L (use distilled water)

K-SULPH (FREE) 2: 37.5 mg/L FSO₂

K-SULPH (FREE) 3: 75 mg/L FSO₂

K-SULPH (FREE) 4: 150 mg/L FSO₂

Assay Parameters:

Assay volumes:	Distilled water:	0.100 mL
	K-SULPH (FREE) R1:	0.100 mL
	Sample:	0.005 mL
	K-SULPH (FREE) R2:	0.050 mL
Calibrators:	0, 37.5, 75, 150 mg/L FSO ₂	
Reaction time:	3 min at 37°C	
Wavelength:	580 nm	
Assay type:	endpoint	
Reaction direction:	increase	
Linearity:	up to 150 mg/L of FSO ₂	

