

Edition: BP 2025 (Ph. Eur. 11.6 update)

## Sodium Sulphite Heptahydrate



### [General Notices](#)

Sodium Sulphite Heptahydrate

(Ph. Eur. monograph 0776)

Na<sub>2</sub>SO<sub>3</sub>·7H<sub>2</sub>O 252.1 10102-15-5

### Action and use

Antioxidant.

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## DEFINITION

### Content

48.0 per cent to 52.5 per cent of Na<sub>2</sub>SO<sub>3</sub>.

## CHARACTERS

### Appearance

Colourless crystals.

### Solubility

Freely soluble in water, very slightly soluble in ethanol (96 per cent).

## IDENTIFICATION

- Solution S (see Tests) is slightly alkaline ([2.2.4](#)).
- To 5 mL of solution S add 0.5 mL of [0.05 M iodine](#). The solution is colourless and gives reaction (a) of sulfates ([2.3.1](#)).
- Solution S gives reaction (a) of sodium ([2.3.1](#)).
- It complies with the limits of the assay.

## TESTS

### Solution S

Dissolve 5 g in [water R](#) and dilute to 50 mL with the same solvent.

## Solution S1

To 10.0 g add 12.5 mL of [water R](#). Shake until mostly dissolved, carefully and progressively add 7.5 mL of [hydrochloric acid R](#) and heat to boiling. Cool and dilute to 50.0 mL with [water R](#).

## Appearance of solution

Solution S is clear ([2.2.1](#)) and colourless ([2.2.2, Method I](#)).

## Thiosulfates

Maximum 0.05 per cent.

To 4.00 g add 100 mL of [water R](#). Shake to dissolve, then add 10 mL of [formaldehyde solution R](#) and 10 mL of [acetic acid R](#). Allow to stand for 5 min, add 0.5 mL of [starch solution R](#) and titrate with [0.05 M iodine](#). Carry out a blank titration. The difference between the volumes used in the titrations is not more than 0.15 mL.

## Iron ([2.4.9](#))

Maximum 5 ppm, determined on solution S1.

## Zinc

Maximum 12 ppm.

Atomic absorption spectrometry ([2.2.23, Method I](#)).

*Test solution* Dilute 2.0 mL of solution S1 to 10.0 mL with [water R](#).

*Reference solutions* Prepare the reference solutions using [zinc standard solution \(100 ppm Zn\) R](#), diluting with [water R](#).

*Source* Zinc hollow-cathode lamp.

*Wavelength* 213.9 nm.

*Atomisation device* Air-acetylene flame.

## ASSAY

Introduce 0.500 g into a 500 mL conical flask containing 50.0 mL of [0.05 M iodine](#). Shake until completely dissolved. Add 1 mL of [starch solution R](#) and titrate the excess of iodine with [0.1 M sodium thiosulfate](#). Carry out a blank titration.

1 mL of [0.05 M iodine](#) is equivalent to 6.30 mg of Na<sub>2</sub>SO<sub>3</sub>.

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