



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

Selenium Sulfide



[General Notices](#)

Selenium Disulphide

(*Selenium Disulfide, Ph. Eur. monograph 1147*)

SeS₂ 143.1 7488-56-4

Action and use

Used in treatment of dandruff and seborrhoeic dermatitis of the scalp.

Preparation

[Selenium Sulfide Scalp Application](#)

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DEFINITION

Content

52.0 per cent to 55.5 per cent of Se.

CHARACTERS

Appearance

Bright orange or reddish-brown powder.

Solubility

Practically insoluble in water.

IDENTIFICATION

A. Gently boil about 50 mg with 5 mL of [nitric acid R](#) for 30 min. Dilute to 50 mL with [water R](#) and filter. To 5 mL of the filtrate add 10 mL of [water R](#) and 5 g of [urea R](#). Heat to boiling, cool and add 1.5 mL of [potassium iodide solution R](#). A yellow or orange colour is produced which darkens rapidly on standing. This solution is used in identification test B.

B. Allow the coloured solution obtained under identification A to stand for 10 min and filter through [kieselguhr for chromatography R](#). 5 mL of the filtrate gives reaction (a) of sulfates ([2.3.1](#)).

TESTS

Soluble selenium compounds

Maximum 5 ppm, calculated as Se.

To 10 g add 100 mL of [water R](#), mix well, allow to stand for 1 h with frequent shaking and filter. To 10 mL of the filtrate add 2 mL of a 115 g/L solution of [anhydrous formic acid R](#), dilute to 50 mL with [water R](#) and adjust to pH 2.0-3.0 with an 115 g/L solution of [anhydrous formic acid R](#). Add 2 mL of a 5 g/L solution of [3,3'-diaminobenzidine tetrahydrochloride R](#). Allow to stand for 45 min and then adjust to pH 6.0-7.0 with [dilute ammonia R1](#). Shake the solution for 1 min with 10 mL of [toluene R](#) and allow the phases to separate. The absorbance ([2.2.25](#)) of the upper layer measured at 420 nm is not greater than that of a standard prepared at the same time and in the same manner beginning at the words "add 2 mL of an 115 g/L solution of [anhydrous formic acid R](#)" and using 5 mL of [selenium standard solution \(1 ppm Se\) R](#) instead of 10 mL of the filtrate.

ASSAY

To 0.100 g add 25 mL of [fuming nitric acid R](#) and heat on a water-bath for 1 h; a small insoluble residue may remain. Cool and dilute to 100.0 mL with [water R](#). To 25.0 mL of this solution add 50 mL of [water R](#) and 5 g of [urea R](#) and heat to boiling. Cool, add 7 mL of [potassium iodide solution R](#) and 3 mL of [starch solution R](#). Titrate immediately with [0.1 M sodium thiosulfate](#). Carry out a blank titration.

1 mL of [0.1 M sodium thiosulfate](#) is equivalent to 1.974 mg of Se.

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