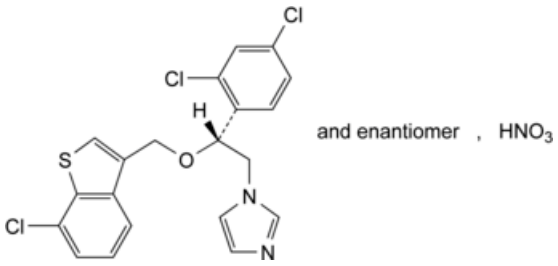
Edition: BP 2025 (Ph. Eur. 11.6 update)

Sertaconazole Nitrate

General Notices

(Ph. Eur. monograph 1148)



$C_{20}H_{16}Cl_3N_3O_4S$ 500.8 *99592-39-9*

Action and use

Antifungal.

Ph Eur

DEFINITION

1-[(2*RS*)-2-[(7-Chloro-1-benzothiophen-3-yl)methoxy]-2-(2,4-dichlorophenyl)ethyl]-1*H*-imidazole nitrate.

Content

99.0 per cent to 101.0 per cent (anhydrous substance).

CHARACTERS

Appearance

White or almost white powder.

Solubility

Practically insoluble in water, soluble in methanol, sparingly soluble in ethanol (96 per cent) and in methylene chloride.

IDENTIFICATION

A. Melting point (*2.2.14*): 156 °C to 161 °C.
B. Infrared absorption spectrophotometry (*2.2.24*).

Comparison sertaconazole nitrate CRS.

TESTS

Appearance of solution

The solution is clear (2.2.1) and not more intensely coloured than reference solution Y_5 (2.2.2, Method II).

Dissolve 0.1 g in ethanol (96 per cent) R and dilute to 10 mL with the same solvent.

Related substances

Liquid chromatography (2.2.29).

Test solution Dissolve 10.0 mg of the substance to be examined in the mobile phase and dilute to 10.0 mL with the mobile phase.

Reference solution (a) Dilute 1.0 mL of the test solution to 100.0 mL with the mobile phase. Dilute 1.0 mL of this solution to 10.0 mL with the mobile phase.

Reference solution (b) Dissolve 2 mg of enilconazole impurity E CRS (sertaconazole nitrate impurity A) in the mobile phase and dilute to 200 mL with the mobile phase. Dilute 1 mL of the solution to 10 mL with the mobile phase (solution A). Dissolve 5 mg of the substance to be examined in solution A and dilute to 5 mL with solution A.

Column:

— *size*: *l* = 0.25 m, Ø = 4.0 mm;

— *stationary phase*: cyanosilyl silica gel for chromatography R (10 µm).

Mobile phase acetonitrile for chromatography R, 1.5 g/L solution of sodium dihydrogen phosphate R (37:63 *V/V*).

Flow rate 1.6 mL/min.

Detection Spectrophotometer at 220 nm.

Injection 20 µL.

Run time 1.3 times the retention time of sertaconazole.

Identification of impurities Use the chromatogram obtained with reference solution (b) to identify the peak due to impurity A.

Relative retention With reference to sertaconazole (retention time = about 19 min): nitrate ion = about 0.05; impurity A = about 0.3.

System suitability Reference solution (b):

— resolution: minimum 5.0 between the peaks due to impurity A and sertaconazole.

Calculation of percentage contents:

— for each impurity, use the concentration of sertaconazole nitrate in reference solution (a).

Limits:

— *unspecified impurities*: for each impurity, maximum 0.10 per cent;

— *total*: maximum 0.3 per cent;

— *reporting threshold*: 0.05 per cent; disregard the peak due to the nitrate ion.

Water (2.5.12)

Maximum 1.0 per cent, determined on 0.500 g.

Sulfated ash (*2.4.14*)

Maximum 0.1 per cent, determined on 1.0 g.

ASSAY

Dissolve 0.400 g in 50 mL of a mixture of equal volumes of *anhydrous acetic acid R* and *methyl ethyl ketone R*. Titrate with *0.1 M perchloric acid*, determining the end-point potentiometrically (*2.2.20*). Carry out a blank titration.

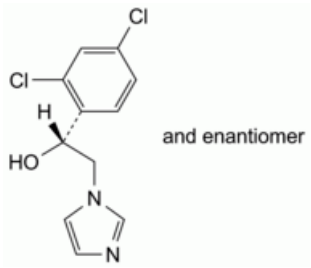
1 mL of *0.1 M perchloric acid* is equivalent to 50.08 mg of $C_{20}H_{16}Cl_3N_3O_4S$.

STORAGE

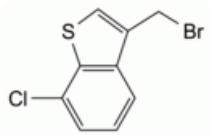
Protected from light.

IMPURITIES

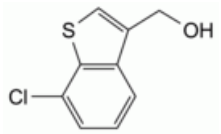
Other detectable impurities (the following substances would, if present at a sufficient level, be detected by one or other of the tests in the monograph. They are limited by the general acceptance criterion for other/unspecified impurities and/or by the general monograph Substances for pharmaceutical use (2034). It is therefore not necessary to identify these impurities for demonstration of compliance. See also 5.10. Control of impurities in substances for pharmaceutical use) A, B, C.



A. (1*RS*)-1-(2,4-dichlorophenyl)-2-(1*H*-imidazol-1-yl)ethan-1-ol,



B. 3-(bromomethyl)-7-chloro-1-benzothiophene,



C. (7-chloro-1-benzothiophen-3-yl)methanol.