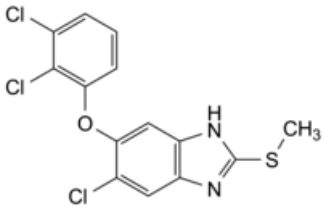
Edition: BP 2025 (Ph. Eur. 11.6 update)

Triclabendazole

General Notices

Triclabendazole for Veterinary Use

(Ph. Eur. monograph 2609)



$C_{14}H_9Cl_3N_2OS$ 359.7 *68786-66-3*

Action and use

Benzimidazole antihelminthic.

Ph Eur

DEFINITION

5-Chloro-6-(2,3-dichlorophenoxy)-2-(methylsulfanyl)-1*H*-benzimidazole.

Content

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

CHARACTERS

Appearance

White or almost white, crystalline powder.

Solubility

Practically insoluble in water, soluble in acetone, sparingly soluble in ethanol (96 per cent).

IDENTIFICATION

Infrared absorption spectrophotometry (*2.2.24*).

Comparison *triclabendazole CRS*.

TESTS

Related substances

Liquid chromatography (*2.2.29*). *Prepare the solutions protected from light.*

Test solution Dissolve 50.0 mg of the substance to be examined in 10 mL of *acetonitrile R* and dilute to 25.0 mL with the mobile phase.

Reference solution (a) Dilute 1.0 mL of the test solution to 50.0 mL with the mobile phase. Dilute 1.0 mL of this solution to 10.0 mL with the mobile phase.

Reference solution (b) Dissolve the contents of a vial of *triclabendazole for system suitability CRS* (impurities A, B and D) in 1.0 mL of the mobile phase.

Column:

— *size*: *l* = 0.25 m, Ø = 4.6 mm;

— *stationary phase*: *base-deactivated end-capped octadecylsilyl silica gel for chromatography R* (5 µm).

Mobile phase Dissolve 0.77 g of *ammonium acetate R* in 800 mL of *water for chromatography R*, add 1 mL of *triethylamine R* and mix; adjust to pH 4.5 with *glacial acetic acid R* and dilute to 1 L with *water for chromatography R*. Mix 40 volumes of this solution and 60 volumes of *acetonitrile R*.

Flow rate 1.0 mL/min.

Detection Spectrophotometer at 305 nm.

Injection 20 µL.

Run time 2.5 times the retention time of triclabendazole.

Identification of impurities Use the chromatogram supplied with *triclabendazole for system suitability CRS* and the chromatogram obtained with reference solution (b) to identify the peaks due to impurities A, B and D.

Relative retention With reference to triclabendazole (retention time = about 10 min): impurity A = about 0.6; impurity B = about 0.7; impurity D = about 1.9.

System suitability Reference solution (b):

— *resolution*: minimum 2.5 between the peaks due to impurities A and B.

Calculation of percentage contents:

— *correction factors*: multiply the peak areas of the following impurities by the corresponding correction factor: impurity A = 1.9; impurity D = 2.7;

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

Limits:

— *impurities A, D*: for each impurity, maximum 0.3 per cent;

— *unspecified impurities*: for each impurity, maximum 0.20 per cent;

— *total*: maximum 1.0 per cent;

— *reporting threshold*: 0.10 per cent.

Loss on drying (*2.2.32*)

Maximum 0.5 per cent, determined on 1.000 g by drying in an oven at 105 °C for 6 h.

Sulfated ash (*2.4.14*)

Maximum 0.1 per cent, determined on 1.0 g.

ASSAY

Dissolve 0.280 g in 50 mL of *anhydrous acetic acid R*. Allow to cool and titrate with *0.1 M perchloric acid*, determining the end-point potentiometrically (*2.2.20*).

1 mL of *0.1 M perchloric acid* is equivalent to 35.97 mg of $C_{14}H_9Cl_3N_2OS$.

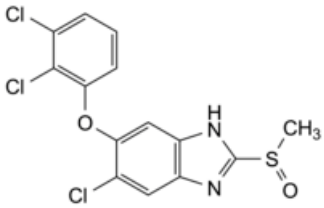
STORAGE

Protected from light.

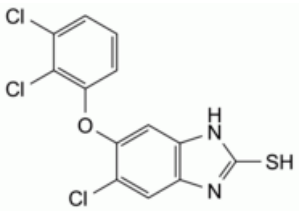
IMPURITIES

Specified impurities A, D.

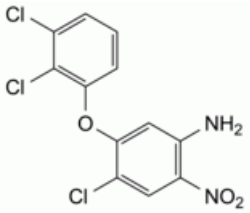
Other detectable impurities (the following substances would, if present at a sufficient level, be detected by one or other of the tests in the monograph. They are limited by the general acceptance criterion for other/unspecified impurities and/or by the general monograph Substances for pharmaceutical 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) B.



A. 5-chloro-6-(2,3-dichlorophenoxy)-2-(methylsulfinyl)-1*H*-benzimidazole,



B. 5-chloro-6-(2,3-dichlorophenoxy)-1*H*-benzimidazole-2-thiol,



D. 4-chloro-5-(2,3-dichlorophenoxy)-2-nitroaniline.