



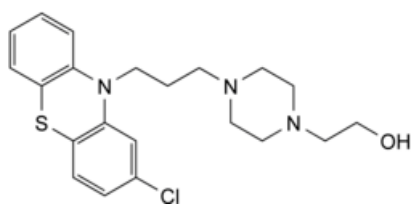
Edition: BP 2025 (Ph. Eur. 11.6 update)

Perphenazine



[General Notices](#)

(Ph. Eur. monograph 0629)



$C_{21}H_{26}ClN_3OS$ 404.0 58-39-9

Action and use

Dopamine receptor antagonist; neuroleptic.

Ph Eur

DEFINITION

2-[4-[3-(2-Chloro-10H-phenothiazin-10-yl)propyl]piperazin-1-yl]ethanol.

Content

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

CHARACTERS

Appearance

White or yellowish-white, crystalline powder.

Solubility

Practically insoluble in water, freely soluble in methylene chloride, soluble in ethanol (96 per cent). It dissolves in dilute solutions of hydrochloric acid.

IDENTIFICATION

- Melting point ([2.2.14](#)): 96 °C to 100 °C.
- Infrared absorption spectrophotometry ([2.2.24](#)).

Comparison [perphenazine CRS](#).

TESTS

Appearance of solution

The solution is clear ([2.2.1](#)).

Dissolve 0.20 g in 10 mL of [methanol R](#).

Related substances

Liquid chromatography ([2.2.29](#)). Prepare the solutions immediately before use. Carry out the test protected from light.

Test solution Dissolve 20 mg of the substance to be examined in mobile phase A and dilute to 10.0 mL with mobile phase A.

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

Reference solution (b) Dissolve 2 mg of [perphenazine for system suitability CRS](#) (containing impurities A and B) in 1.0 mL of mobile phase A.

Column:

- **size:** $l = 0.25$ m, $\varnothing = 4.6$ mm;
- **stationary phase:** spherical [base-deactivated octylsilyl silica gel for chromatography R](#) (4 μ m);
- **temperature:** 30 °C.

Mobile phase:

- **mobile phase A:** mix 35 volumes of [acetonitrile R](#) and 65 volumes of a 7 g/L solution of [sodium dihydrogen phosphate R](#);
- **mobile phase B:** [acetonitrile R](#);

Time (min)	Mobile phase A (per cent V/V)	Mobile phase B (per cent V/V)
0 - 5	100	0
5 - 10	100 → 80	0 → 20
10 - 33	80 → 30	20 → 70
33 - 48	30 → 100	70 → 0

Flow rate 1.3 mL/min.

Detection Spectrophotometer at 245 nm.

Injection 10 μ L.

Identification of impurities Use the chromatogram supplied with [perphenazine for system suitability CRS](#) and the chromatogram obtained with reference solution (b) to identify the peaks due to impurities A and B.

Relative retention With reference to perphenazine (retention time = about 12 min): impurity A = about 0.3; impurity B = about 0.8.

System suitability Reference solution (b):

- **resolution:** minimum 4.0 between the peaks due to impurity B and perphenazine.

Limits:

- **correction factor:** for the calculation of content, multiply the peak area of impurity A by 0.6;

- *impurity A*: not more than twice the area of the principal peak in the chromatogram obtained with reference solution (a) (0.2 per cent);
- *impurity B*: not more than 5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.5 per cent);
- *unspecified impurities*: for each impurity, not more than the area of the principal peak in the chromatogram obtained with reference solution (a) (0.10 per cent);
- *total*: not more than 10 times the area of the principal peak in the chromatogram obtained with reference solution (a) (1.0 per cent);
- *disregard limit*: 0.5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.05 per cent).

Loss on drying (2.2.32)

Maximum 0.5 per cent, determined on 1.000 g by drying *in vacuo* at 65 °C for 4 h.

Sulfated ash (2.4.14)

Maximum 0.1 per cent, determined on 1.0 g.

ASSAY

Dissolve 0.150 g in 25 mL of [anhydrous acetic acid R](#). Titrate with [0.1 M perchloric acid](#) determining the end-point potentiometrically ([2.2.20](#)).

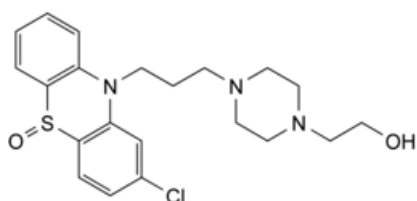
1 mL of [0.1 M perchloric acid](#) is equivalent to 20.20 mg of $C_{21}H_{26}ClN_3OS$.

STORAGE

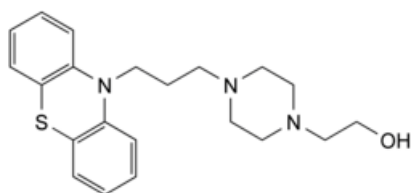
Protected from light.

IMPURITIES

Specified impurities A, B.



A. 2-[4-[3-(2-chloro-5-oxido-10*H*-phenothiazin-10-yl)propyl]piperazin-1-yl]ethanol,



B. 2-[4-[3-(10*H*-phenothiazin-10-yl)propyl]piperazin-1-yl]ethanol.

