



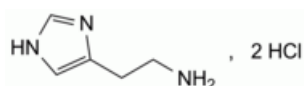
Edition: BP 2025 (Ph. Eur. 11.6 update)

Histamine Dihydrochloride



[General Notices](#)

(Ph. Eur. monograph 0143)



$C_5H_{11}Cl_2N_3$ 184.1 56-92-8

Ph Eur

DEFINITION

Histamine dihydrochloride contains not less than 98.5 per cent and not more than the equivalent of 101.0 per cent of 2-(1*H*-imidazol-4-yl)ethan-1-amine dihydrochloride, calculated with reference to the dried substance.

CHARACTERS

A white or almost white, crystalline powder or colourless crystals, hygroscopic, very soluble in water, soluble in ethanol (96 per cent).

IDENTIFICATION

First identification: A, D.

Second identification: B, C, D.

- Examine by infrared absorption spectrophotometry ([2.2.24](#)), comparing with the spectrum obtained with [histamine dihydrochloride CRS](#). Examine as discs prepared using 1 mg of substance.
- Examine the chromatograms obtained in the test for histidine. The principal spot in the chromatogram obtained with test solution (b) is similar in position, colour and size to the principal spot in the chromatogram obtained with reference solution (a).
- Dissolve 0.1 g in 7 mL of [water R](#) and add 3 mL of a 200 g/L solution of [sodium hydroxide R](#). Dissolve 50 mg of [sulfanilic acid R](#) in a mixture of 0.1 mL of [hydrochloric acid R](#) and 10 mL of [water R](#) and add 0.1 mL of [sodium nitrite solution R](#). Add the second solution to the first and mix. A red colour is produced.
- It gives reaction (a) of chlorides ([2.3.1](#)).

TESTS

Solution S

Dissolve 0.5 g in [carbon dioxide-free water R](#) prepared from [distilled water R](#) and dilute to 10 mL with the same solvent.

Appearance of solution

Solution S is clear ([2.2.1](#)) and not more intensely coloured than reference solution Y₇ ([2.2.2, Method II](#)).

pH ([2.2.3](#))

The pH of solution S is 2.85 to 3.60.

Histidine

Examine by thin-layer chromatography ([2.2.27](#)), using a [TLC silica gel G plate R](#).

Test solution (a) Dissolve 0.5 g of the substance to be examined in [water R](#) and dilute to 10 mL with the same solvent.

Test solution (b) Dilute 2 mL of test solution (a) to 10 mL with [water R](#).

Reference solution (a) Dissolve 0.1 g of [histamine dihydrochloride CRS](#) in [water R](#) and dilute to 10 mL with the same solvent.

Reference solution (b) Dissolve 50 mg of [histidine monohydrochloride R](#) in [water R](#) and dilute to 100 mL with the same solvent.

Reference solution (c) Mix 1 mL of test solution (a) and 1 mL of reference solution (b).

Apply to the plate 1 µL of test solution (a), 1 µL of test solution (b), 1 µL of reference solution (a), 1 µL of reference solution (b) and 2 µL of reference solution (c). Develop over a path of 15 cm using a mixture of 5 volumes of [concentrated ammonia R](#), 20 volumes of [water R](#) and 75 volumes of [acetonitrile R](#). Dry the plate in a current of air. Repeat the development in the same direction, dry the plate in a current of air and spray with [ninhydrin solution R1](#). Heat the plate at 110 °C for 10 min. Any spot corresponding to histidine in the chromatogram obtained with test solution (a) is not more intense than the spot in the chromatogram obtained with reference solution (b) (1 per cent). The test is not valid unless the chromatogram obtained with reference solution (c) shows 2 clearly separated spots.

Sulfates ([2.4.13](#))

3 mL of solution S diluted to 15 mL with [distilled water R](#) complies with the limit test for sulfates (0.1 per cent).

Loss on drying ([2.2.32](#))

Not more than 0.5 per cent, determined on 0.20 g by drying in an oven at 105 °C.

Sulfated ash ([2.4.14](#))

Not more than 0.1 per cent, determined on 0.5 g.

ASSAY

Dissolve 0.080 g in a mixture of 5.0 mL of [0.01 M hydrochloric acid](#) and 50 mL of [alcohol R](#). Carry out a potentiometric titration ([2.2.20](#)), using [0.1 M sodium hydroxide](#). Read the volume added between the first and third points of inflexion.

1 mL of [0.1 M sodium hydroxide](#) is equivalent to 9.203 mg of C₅H₁₁Cl₂N₃.

STORAGE

Store in an airtight container, protected from light.

