



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

Hydrochloric Acid



[General Notices](#)

(Concentrated Hydrochloric Acid, Ph. Eur. monograph 0002)

HCl 36.46 7647-01-0

Preparation

[Dilute Hydrochloric Acid](#)

Ph Eur

DEFINITION

Content

35.0 per cent *m/m* to 39.0 per cent *m/m*.

CHARACTERS

Appearance

Clear, colourless, fuming liquid.

Solubility

Miscible with water.

[Relative density](#)

About 1.18.

IDENTIFICATION

- A. Dilute with [water R](#). The solution is strongly acid ([2.2.4](#)).
- B. It gives reaction (a) of chlorides ([2.3.1](#)).
- C. It complies with the limits of the assay.

TESTS

Appearance of solution

To 2 mL add 8 mL of [water R](#). The solution is clear ([2.2.1](#)) and colourless ([2.2.2, Method II](#)).

Free chlorine

Maximum 4 ppm.

To 15 mL add 100 mL of [carbon dioxide-free water R](#), 1 mL of a 100 g/L solution of [potassium iodide R](#) and 0.5 mL of [iodide-free starch solution R](#). Allow to stand in the dark for 2 min. Any blue colour disappears on the addition of 0.2 mL of [0.01 M sodium thiosulfate](#).

Sulfates ([2.4.13](#))

Maximum 20 ppm.

To 6.4 mL add 10 mg of [sodium hydrogen carbonate R](#) and evaporate to dryness on a water-bath. Dissolve the residue in 15 mL of [distilled water R](#).

[Residue on evaporation](#)

Maximum 0.01 per cent.

Evaporate 100.0 g to dryness on a water-bath or using a rotary evaporator and dry the residue at 100-105 °C. The residue weighs a maximum of 10 mg.

ASSAY

Weigh accurately a ground-glass-stoppered flask containing 30 mL of [water R](#). Introduce 1.5 mL of the acid to be examined and weigh again. Titrate with [1 M sodium hydroxide](#), determining the end-point potentiometrically ([2.2.20](#)).

1 mL of [1 M sodium hydroxide](#) is equivalent to 36.46 mg of HCl.

STORAGE

In a stoppered container made of glass or another inert material, at a temperature not exceeding 30 °C.

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