



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

Ferric Chloride Hexahydrate



[General Notices](#)

(Ph. Eur. monograph 1515)

FeCl₃·6H₂O 270.3 10025-77-1

Preparation

[Ferric Chloride Injection](#)

Ph Eur

DEFINITION

Content

98.0 per cent to 102.0 per cent.

CHARACTERS

Appearance

Crystalline mass or orange-yellow or brownish-yellow crystals, very hygroscopic.

Solubility

Very soluble in water and in ethanol (96 per cent), freely soluble in glycerol.

IDENTIFICATION

- A. It gives reaction (a) of chlorides ([2.3.1](#)).
- B. It gives reaction (c) of iron ([2.3.1](#)).

TESTS

Solution S

Dissolve 10 g in [distilled water R](#) and dilute to 100 mL with the same solvent.

Acidity

In a suitable polyethylene container, dissolve 3.0 g of [potassium fluoride R](#) in 15 mL of [water R](#). Titrate with [0.1 M sodium hydroxide](#) using 0.1 mL of [phenolphthalein solution R](#) as indicator until a pink colour is obtained. Add 10 mL of solution S and allow to stand for 3 h. Filter and use 12.5 mL of the filtrate. Not more than 0.30 mL of [0.1 M sodium hydroxide](#) is required to change the colour of the indicator to pink.

Free chlorine

Heat 5 mL of solution S. The vapour does not turn [starch iodide paper R](#) blue.

Sulfates [\(2.4.13\)](#)

Maximum 100 ppm.

Heat 15 mL of solution S on a water-bath and add 5 mL of [strong sodium hydroxide solution R](#). Allow to cool and filter. Neutralise the filtrate to [blue litmus paper R](#) using [hydrochloric acid R1](#) and evaporate to 15 mL.

Ferrous ions

Maximum 50 ppm.

To 10 mL of solution S, add 1 mL of [water R](#), and 0.05 mL of [potassium ferricyanide solution R](#) followed by 4 mL of [phosphoric acid R](#). After 10 min, any blue colour in the solution is not more intense than that in a standard prepared at the same time and in the same manner using 10 mL of [water R](#) and 1 mL of a freshly prepared 0.250 g/L solution of [ferrous sulfate R](#).

ASSAY

In a conical flask with a ground-glass stopper, dissolve 0.200 g in 20 mL of [water R](#). Add 10 mL of [dilute hydrochloric acid R](#) and 2 g of [potassium iodide R](#). Allow the stoppered flask to stand for 1 h protected from light. Titrate with [0.1 M sodium thiosulfate](#), adding 5 mL of [starch solution R](#) towards the end of the titration.

1 mL of [0.1 M sodium thiosulfate](#) is equivalent to 27.03 mg of $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$.

STORAGE

In an airtight container, protected from light.

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