

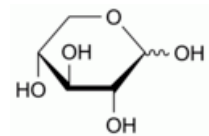


Edition: BP 2025 (Ph. Eur. 11.6 update)

Xylose

[General Notices](#)

(Ph. Eur. monograph 1278)



C₅H₁₀O₅ 150.1 58-86-6

Ph Eur

DEFINITION

D-Xylopyranose.

CHARACTERS

Appearance

White or almost white, crystalline powder or colourless needles.

Solubility

Freely soluble in water, soluble in hot ethanol (96 per cent).

IDENTIFICATION

First identification: A.

Second identification: B, C.

A. Infrared absorption spectrophotometry ([2.2.24](#)).

Preparation Discs.

Comparison [xylose CRS](#).

B. Thin-layer chromatography ([2.2.27](#)).

Solvent mixture [water R](#), [methanol R](#) (2:3 V/V).

Test solution Dissolve 10 mg of the substance to be examined in the solvent mixture and dilute to 20 mL with the solvent mixture.

Reference solution (a) Dissolve 10 mg of [xylose CRS](#) in the solvent mixture and dilute to 20 mL with the solvent mixture.

Reference solution (b) Dissolve 10 mg of [fructose R](#), 10 mg of [glucose R](#) and 10 mg of [xylose R](#) in the solvent mixture and dilute to 20 mL with the solvent mixture.

Plate [TLC silica gel plate R](#).

Mobile phase [water R](#), [methanol R](#), [anhydrous acetic acid R](#), [methylene chloride R](#) (10:15:25:50 V/V/V/V); measure the volumes accurately since a slight excess of water produces cloudiness.

Application 2 µL; thoroughly dry the points of application.

Development Over a path of 15 cm.

Drying In a current of warm air.

Detection Spray with a 5 g/L solution of [thymol R](#) in a mixture of 5 volumes of [sulfuric acid R](#) and 95 volumes of [ethanol \(96 per cent\) R](#). Heat in an oven at 130 °C for 10 min.

System suitability Reference solution (b):

— the chromatogram shows 3 clearly separated spots.

Results The principal spot in the chromatogram obtained with the test solution is similar in position, colour and size to the principal spot in the chromatogram obtained with reference solution (a).

C. Dissolve 0.1 g in 10 mL of [water R](#). Add 3 mL of [cupri-tartaric solution R](#) and heat. An orange or red precipitate is formed.

TESTS

Solution S

Dissolve 10.0 g in [carbon dioxide-free water R](#) and dilute to 100 mL with the same solvent.

Appearance of solution

Solution S is clear ([2.2.1](#)) and colourless ([2.2.2, Method II](#)).

Acidity or alkalinity

To 50 mL of solution S add 0.3 mL of [phenolphthalein solution R1](#). The solution is colourless. Not more than 0.2 mL of [0.1 M sodium hydroxide](#) is required to change the colour of the indicator to pink.

[Specific optical rotation \(2.2.7\)](#)

+ 18.5 to + 19.5 (dried substance).

Dissolve 10.0 g in 80 mL of [water R](#), add 1 mL of [dilute ammonia R2](#) and dilute to 100.0 mL with [water R](#). Allow to stand for 30 min.

Chlorides ([2.4.4](#))

Maximum 330 ppm.

Dilute 1.5 mL of solution S to 15 mL with [water R](#).

[Loss on drying \(2.2.32\)](#)

Maximum 0.5 per cent, determined on 1.000 g by drying *in vacuo* at 105 °C for 4 h.

Sulfated ash (2.4.14)

Maximum 0.1 per cent, determined on 1.0 g.

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