



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

Yellow Beeswax



[General Notices](#)

(Ph. Eur. monograph 0070)

Action and use

Excipient.

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DEFINITION

Wax obtained by melting the walls of the honeycomb made by the honey-bee, *Apis mellifera* L., with hot water and removing foreign matter.

CHARACTERS

Appearance

Yellow or light brown pieces or plates with a fine-grained, matt and non-crystalline fracture; when warmed in the hand they become soft and malleable.

It has a faint odour, characteristic of honey. It is tasteless and does not stick to the teeth.

Solubility

Practically insoluble in water, partially soluble in hot ethanol (90 per cent V/V) and completely soluble in fatty and essential oils.

[Relative density](#)

About 0.960.

TESTS

[Drop point \(2.2.17\)](#)

61 °C to 66 °C.

Melt the beeswax by heating on a water-bath, pour onto a glass plate and allow to cool to a semi-solid mass. Fill the metal cup by inserting the wider end into the beeswax and repeating the procedure until beeswax extrudes from the narrow opening. Remove the excess with a spatula and insert the thermometer immediately. Remove the beeswax displaced. Allow to stand at room temperature for at least 12 h before determining the drop point.

Acid value

17.0 to 22.0.

To 2.00 g (*m* g), in a 250 mL conical flask fitted with a reflux condenser, add 40 mL of [xylene R](#) and a few glass beads. Heat until the substance is dissolved. Add 20 mL of [ethanol \(96 per cent\) R](#) and 0.5 mL of [phenolphthalein solution R1](#) and titrate the hot solution with [0.5 M alcoholic potassium hydroxide](#) until a red colour persists for at least 10 s (n_1 mL). Carry out a blank test (n_2 mL).

Ester value (2.5.2)

70 to 80.

Saponification value

87 to 102.

To 2.00 g (*m* g), in a 250 mL conical flask fitted with a reflux condenser, add 30 mL of a mixture of equal volumes of [ethanol \(96 per cent\) R](#) and [xylene R](#) and a few glass beads. Heat until the substance is dissolved. Add 25.0 mL of [0.5 M alcoholic potassium hydroxide](#) and heat under a reflux condenser for 3 h. Titrate the hot solution immediately with [0.5 M hydrochloric acid](#), using 1 mL of [phenolphthalein solution R1](#) as indicator (n_1 mL). Reheat the solution to boiling several times during the course of the titration. Carry out a blank test (n_2 mL).

Ceresin, paraffins and certain other waxes

To 3.0 g, in a 100 mL round-bottomed flask, add 30 mL of a 40 g/L solution of [potassium hydroxide R](#) in [aldehyde-free alcohol R](#) and boil gently under a reflux condenser for 2 h. Remove the condenser and immediately insert a thermometer. Place the flask in a water-bath at 80 °C and allow to cool, swirling the solution continuously. No precipitate is formed until 65 °C, although the solution may be slightly opalescent. Beginning at 65 °C, the solution may become cloudy and precipitates may be formed. At 59 °C, the solution is cloudy.

Glycerol and other polyols

Maximum 0.5 per cent *m/m*, calculated as glycerol.

To 0.20 g add 10 mL of [alcoholic potassium hydroxide solution R](#) and heat on a water-bath under a reflux condenser for 30 min. Add 50 mL of [dilute sulfuric acid R](#), cool and filter. Rinse the flask and the filter with [dilute sulfuric acid R](#). Combine the filtrate and washings and dilute to 100.0 mL with [dilute sulfuric acid R](#). Place 1.0 mL of the solution in a test-tube, add 0.5 mL of a 10.7 g/L solution of [sodium periodate R](#), mix and allow to stand for 5 min. Add 1.0 mL of [decolorised fuchsin solution R](#) and mix. Any precipitate disappears. Place the tube in a beaker containing water at 40 °C. During cooling observe for 10-15 min. Any violet-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 1.0 mL of a 10 mg/L solution of [glycerol R](#) in [dilute sulfuric acid R](#).

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