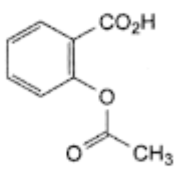
Aspirin

للاطلاع مش حفظ

General Notices

(Acetylsalicylic Acid, Ph Eur monograph 0309)



$C_9H_8O_4$ 180.2 *50-78-2*

Action and use

Salicylate; non-selective cyclo-oxygenase inhibitor;antipyretic; analgesic; anti-inflammatory.

Preparations

Aspirin Tablets

Dispersible Aspirin Tablets

Effervescent Soluble Aspirin Tablets

Gastro-resistant Aspirin Tablets

Aspirin and Caffeine Tablets

Co-codaprin Tablets

Dispersible Co-codaprin Tablets

هدول لونهم احمر
ليدلونا انو لكل واحد
منهم monograph
داخل BP يعني
لازم نلتزم التستات
الي فيه

Ph Eur

DEFINITION

2-(Acetyloxy)benzoic acid.

Content

99.5 per cent to 101.0 per cent (dried substance).

CHARACTERS

Appearance

White or almost white, crystalline powder or colourless crystals.

Solubility

Slightly soluble in water, freely soluble in ethanol (96 per cent).

mp

مهمه لأنها تعكس
purity, identity,
crysality

About 143 °C (instantaneous method).

amorphous	Crystalline
معناه highly viscous liquid	يكون B/A
فش m.p	نميزهم عن بعض من خلال m.p

IDENTIFICATION

First identification A, B.

Second identification B, C, D.

وحدة منهم نختار

A. Infrared absorption spectrophotometry (2.2.24).

Comparison *acetylsalicylic acid CRS*.

B. To 0.2 g add 4 mL of *dilute sodium hydroxide solution R* and boil for 3 min. Cool and add 5 mL *of dilute sulfuric acid R*. A crystalline precipitate is formed. Filter, wash the precipitate and dry at 100-105 °C. The melting point (2.2.14) is 156 °C to 161 °C.

C. In a test tube mix 0.1 g with 0.5 g of *calcium hydroxide R*. Heat the mixture and expose to the fumes produced a piece of filter paper impregnated with 0.05 mL of *nitrobenzaldehyde solution R*. A greenish-blue or greenish-yellow colour develops on the paper. Moisten the paper with *dilute hydrochloric acid R*. The colour becomes blue.

D. Dissolve with heating about 20 mg of the precipitate obtained in identification test B in 10 mL of *water R* and cool. The solution gives reaction (a) of salicylates (2.3.1).

TESTS

Appearance of solution

The solution is clear (2.2.1) and colourless (2.2.2, *Method II*).

Dissolve 1.0 g in 9 mL of *ethanol (96 per cent) R*.

Related substances

Liquid chromatography (2.2.29). *Prepare the solutions immediately before use.*

Test solution Dissolve 0.100 g of the substance to be examined in *acetonitrile for chromatography R* and dilute to 10.0 mL with the same solvent.

Reference solution (a) Dissolve 50.0 mg of *salicylic acid R* (impurity C) in the mobile phase and dilute to 50.0 mL with the mobile phase. Dilute 1.0 mL of this solution to 100.0 mL with the mobile phase.

Reference solution (b) Dissolve 10 mg of *salicylic acid R* (impurity C) in the mobile phase and dilute to 10.0 mL with the mobile phase. To 1.0 mL of this solution add 0.2 mL of the test solution and dilute to 100.0 mL with the mobile phase.

Column:

— *size*: *l* = 0.25 m, Ø = 4.6 mm;

— *stationary phase*: *octadecylsilyl silica gel for chromatography* R (5 µm).

Mobile phase *phosphoric acid R*, *acetonitrile for chromatography R*, *water R* (2:400:600 *V/V/V*).

Flow rate 1 mL/min.

Detection Spectrophotometer at 237 nm.

Injection 10 µL.

Run time 7 times the retention time of acetylsalicylic acid.

Identification of impurities Use the chromatogram obtained with reference solution (a) to identify the peak due to impurity C.

Relative retention With reference to acetylsalicylic acid (retention time = about 5 min): impurity A = about 0.7; impurity B = about 0.8; impurity C = about 1.3; impurity D = about 2.3; impurity E = about 3.2; impurity F = about 6.0.

System suitability Reference solution (b):

— *resolution*: minimum 6.0 between the peaks due to acetylsalicylic acid and impurity C.

Limits:

— *impurities A, B, C, D, E, F*: for each impurity, not more than 1.5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.15 per cent);

— *unspecified impurities*: for each impurity, not more than 0.5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.05 per cent);

— *total*: not more than 2.5 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.25 per cent);

— *disregard limit:* 0.3 times the area of the principal peak in the chromatogram obtained with reference solution (a) (0.03 per cent).

Heavy metals (2.4.8)

Maximum 20 ppm.

Dissolve 1.0 g in 12 mL of *acetone R* and dilute to 20 mL with *water R*. 12 mL of the solution complies with test B. Prepare the reference solution using lead standard solution (1 ppm Pb) obtained by diluting *lead standard solution (100 ppm Pb) R* with a mixture of 6 volumes of *water R* and 9 volumes of *acetone R*.

Loss on drying (2.2.32)

Maximum 0.5 per cent, determined on 1.000 g by drying *in vacuo*.

Sulfated ash (2.4.14)

Maximum 0.1 per cent, determined on 1.0 g.

ASSAY

In a flask with a ground-glass stopper, dissolve 1.000 g in 10 mL of *ethanol (96 per cent) R*. Add 50.0 mL of *0.5 M* *sodium hydroxide*. Close the flask and allow to stand for 1 h. Using 0.2 mL of *phenolphthalein solution R* as indicator, titrate with *0.5 M* *hydrochloric acid*. Carry out a blank titration.

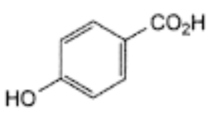
1 mL of *0.5 M* *sodium hydroxide* is equivalent to 45.04 mg of $C_9H_8O_4$.

STORAGE

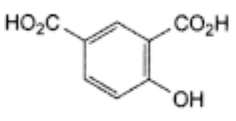
In an airtight container.

IMPURITIES

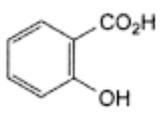
Specified impurities A, B, C, D, E, F.



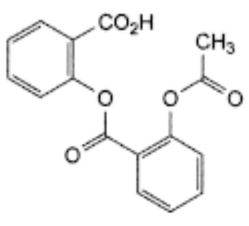
A. 4-hydroxybenzoic acid,



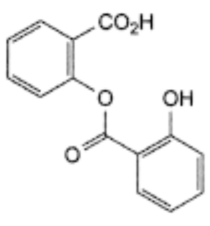
B. 4-hydroxybenzene-1,3-dicarboxylic acid (4-hydroxyisophthalic acid),



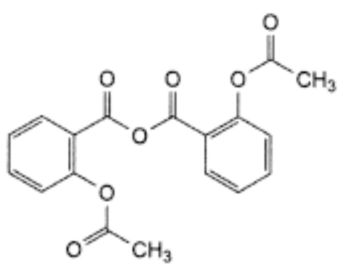
C. 2-hydroxybenzenecarboxylic acid (salicylic acid),



D. 2-[[2-(acetyloxy)benzoyl]oxy]benzoic acid (acetylsalicylsalicylic acid),



E. 2-[(2-hydroxybenzoyl)oxy]benzoic acid (salicylsalicylic acid),



F. 2-(acetyloxy)benzoic anhydride (acetylsalicylic anhydride).

Ph Eur

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