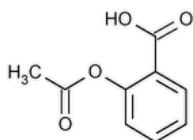


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Aspirin



$C_9H_8O_4$ 180.16
Benzoic acid, 2-(acetyloxy)-.

Salicylic acid acetate CAS RN[®]: 50-78-2; UNII: R16C05Y76E.

» Aspirin contains not less than 99.5 percent and not more than 100.5 percent of $C_9H_8O_4$, calculated on the dried basis.

Packaging and storage—Preserve in tight containers.

USP REFERENCE STANDARDS (11)—

[USP Aspirin RS](#)

Identification—

A: Heat it with water for several minutes, cool, and add 1 or 2 drops of ferric chloride TS: a violet-red color is produced.

B: [Spectroscopic Identification Tests \(197\)](#), [Infrared Spectroscopy: 197K](#).

LOSS ON DRYING (731)—Dry it over silica gel for 5 hours: it loses not more than 0.5% of its weight.

READILY CARBONIZABLE SUBSTANCES (271)—Dissolve 500 mg in 5 mL of sulfuric acid: the solution has no more color than *Matching Fluid Q*.

RESIDUE ON IGNITION (281): not more than 0.05%.

Substances insoluble in sodium carbonate TS—A solution of 500 mg in 10 mL of warm sodium carbonate TS is clear.

CHLORIDE (221)—Boil 1.5 g with 75 mL of water for 5 minutes, cool, add sufficient water to restore the original volume, and filter. A 25-mL portion of the filtrate shows no more chloride than corresponds to 0.10 mL of 0.020 N hydrochloric acid (0.014%).

SULFATE—Dissolve 6.0 g in 37 mL of acetone, and add 3 mL of water. Titrate potentiometrically with 0.02 M lead perchlorate, prepared by dissolving 9.20 g of lead perchlorate in water to make 1000 mL of solution, using a pH meter capable of a minimum reproducibility of ± 0.1 mV (see [pH \(791\)](#)) and equipped with an electrode system consisting of a lead-specific electrode and a silver–silver chloride reference glass-sleeved electrode containing a solution of tetraethylammonium perchlorate in glacial acetic acid (1 in 44) (see [Titrimetry \(541\)](#)): not more than 1.25 mL of 0.02 M lead perchlorate is consumed (0.04%). [NOTE—After use, rinse the lead-specific electrode with water, drain the reference electrode, flush with water, rinse with methanol, and allow to dry.]

Limit of free salicylic acid—Dissolve 2.5 g in sufficient alcohol to make 25.0 mL. To each of two matched color-comparison tubes add 48 mL of water and 1 mL of a freshly prepared, diluted ferric ammonium sulfate solution (prepared by adding 1 mL of 1 N hydrochloric acid to 2 mL of ferric ammonium sulfate TS and diluting with water to 100 mL). Into one tube pipet 1 mL of a standard solution of salicylic acid in water, containing 0.10 mg of salicylic acid per mL. Into the second tube pipet 1 mL of the 1 in 10 solution of Aspirin. Mix the contents of each tube: after 30 seconds, the color in the second tube is not more intense than that in the tube containing the salicylic acid (0.1%).

Change to read:

Assay—Place about 1.5 g of Aspirin, accurately weighed, in a flask, add 50.0 mL of 0.5 N sodium hydroxide VS, and boil the mixture gently for 10 minutes. Add phenolphthalein TS, and titrate the excess sodium hydroxide with 0.5 N sulfuric acid VS. Perform a blank determination (see

▲ [Titrimetry \(541\)](#) ▲ (CN 1-Aug-2024). Each mL of 0.5 N sodium hydroxide is equivalent to 45.04 mg of $C_9H_8O_4$.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
ASPIRIN	Documentary Standards Support	SM22020 Small Molecules 2
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM22020 Small Molecules 2

Chromatographic Database Information: [Chromatographic Database](#)

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