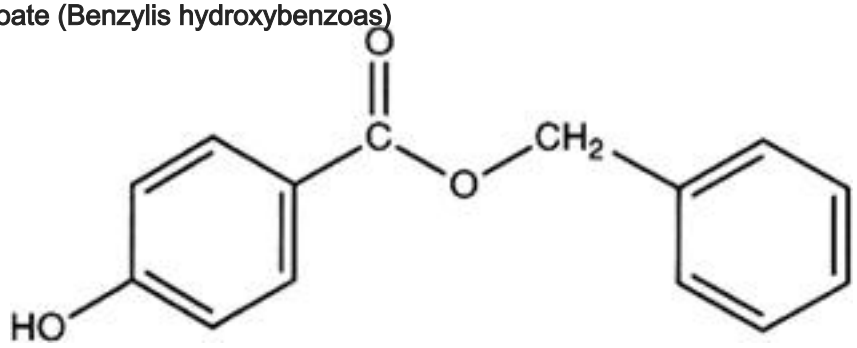
Benzyl hydroxybenzoate (Benzylis hydroxybenzoas)



$C_{14}H_{12}O_3$

Relative molecular mass. 228.3

Chemical name. Benzyl *p*-hydroxybenzoate; phenylmethyl 4-hydroxybenzoate; CAS Reg. No. 94-18-8.

Description. A white to creamy white, crystalline powder; odourless or almost odourless.

Solubility. Practically insoluble in water; soluble in ethanol (~750 g/l) TS and ether R; dissolves in solutions of alkali hydroxides.

Category. Antimicrobial preservative.

Storage. Benzyl hydroxybenzoate should be kept in a well-closed container.

Requirements

Benzyl hydroxybenzoate contains not less than **99.0%** and not more than the equivalent of **101.0%** of $C_{14}H_{12}O_3$.

Identity tests

A. The absorption spectrum of a 10 µg/mL solution in ethanol (~750 g/l) TS, when observed between 230 nm and 350nm, exhibits a maximum at about 260 nm; the absorbance of a 1-cm layer at this wavelength is about 0.76.

B. Dissolve 0.1 g in 2 mL of ethanol (~750 g/l) TS, boil, and add 0.5 mL of mercury/nitric acid TS; a precipitate gradually separates and the supernatant liquid becomes red.

C. Melting temperature, about 112 °C.

Sulfated ash. Not more than 1.0 mg/g.

Acidity. Dissolve 0.2 g in 10 mL of ethanol (~375 g/l) TS previously neutralized using methyl red/ethanol TS. Titrate with sodium hydroxide (0.1 mol/l) VS; not more than 0.1 mL is required to obtain the midpoint of the indicator (orange).

Assay. To about 0.12 g, accurately weighed, add 20 mL of sodium hydroxide (~80 g/l) TS, and boil gently under reflux for 30 minutes. Cool, and extract with three quantities, each of 20 mL, of dichloroethane R. Wash the combined extracts with 20 mL of sodium hydroxide (0.1 mol/l) VS and add the wash liquids to the main aqueous phase, discarding the organic phase. To the aqueous solution add 25 mL of potassium bromate (0.0333 mol/l) VS, 6 mL of potassium bromide (100 g/l) TS, and 10 mL of hydrochloric acid (~420 g/l) TS and immediately stopper the flask. Shake for 15 minutes and allow to stand for 15 minutes. Add 25 mL of potassium iodide (100 g/l) TS and shake vigorously. Titrate the liberated iodine with sodium thiosulfate (0.1 mol/l) VS, using starch TS as indicator, added towards the end of the titration. Repeat the procedure without the Benzyl hydroxybenzoate being examined and make any necessary corrections. The volume of potassium bromate (0.0333 mol/l) VS used is equivalent to half of the volume of sodium thiosulfate (0.1 mol/l) VS required for the titration.

Each mL of potassium bromate (0.0333 mol/l) VS is equivalent to 7.608 mg of $C_{14}H_{12}O_3$.