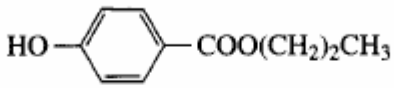
Propylparaben

Propyl *p*-Hydroxybenzoate



$C_{10}H_{12}O_3$ Formula wt 180.20

CAS: [94-13-3]

DESCRIPTION

Small, colorless crystals or a white powder. One g dissolves in about 2500 mL of water at 25°, in about 400 mL of boiling water, in about 1.5 mL of alcohol, and in about 3 mL of ether.

Functional Use in Foods Preservative; antimicrobial agent.

REQUIREMENTS

Identification Dissolve about 500 mg in 10 mL of 1 *N* sodium hydroxide, and boil for 30 min, allowing the solution to evaporate to a volume of about 5 mL. Cool the mixture, and carefully acidify with 2 *N* sulfuric acid. Collect the precipitate on a filter when cool, wash it several times with small portions of water, and dry in a desiccator over silica gel. The liberated *p*-hydroxybenzoic acid melts between 212° and 217° (see Appendix IIB, *Melting Range or Temperature*).
Assay Not less than 99.0% and not more than 100.5% of $C_{10}H_{12}O_3$, calculated on the dried basis.
Acidity Passes test.
Heavy Metals (as Pb) Not more than 10 mg/kg.
Loss on Drying Not more than 0.5%.
Melting Range Between 95° and 98°.
Residue on Ignition Not more than 0.05%.

TESTS

Assay Place in a flask about 2 g, accurately weighed, add 40.0 mL of 1 *N* sodium hydroxide, and rinse the sides of the flask with water. Cover with a watch glass, boil gently for 1 h, cool, and titrate the excess sodium hydroxide with 1 *N* sulfuric acid to pH 6.5. Perform a blank determination with the same quantities of the same reagents in the same manner, and make any necessary correction (see *General Provisions*). Each mL of 1 *N* sodium hydroxide is equivalent to 180.2 mg of $C_{10}H_{12}O_3$, calculated on the dried basis.
Acidity Heat 750 mg with 15 mL of water at 80° for 1 min, cool, and filter. The filtrate is acid or neutral to litmus. To 10 mL of the filtrate add 0.2 mL of 0.1 *N* sodium hydroxide and 2 drops of methyl red TS. The solution is yellow, without even a light cast of pink.
Heavy Metals, Appendix IIIB Dissolve 2 g in 23 mL of acetone, and add 2 mL of 1 *N* acetic acid, 2 mL of water, and 10 mL of hydrogen sulfide TS. Any color does not exceed that produced in a control made with 23 mL of acetone, 2 mL of 1 *N* acetic acid, 2 mL of *Standard Lead Solution* (20 µg Pb ion), and 10 mL of hydrogen sulfide TS.
Loss on Drying, Appendix IIC Dry over silica gel for 5 h.
Melting Range Determine as directed for *Melting Range or Temperature*, Appendix IIB.
Residue on Ignition Ignite 4 g as directed in the general method, Appendix IIC.

Packaging and Storage Store in well-closed containers.