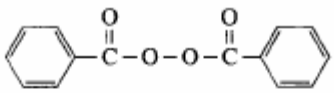
Benzoyl Peroxide



$C_{14}H_{10}O_4$ Formula wt 242.23

INS: 928 CAS [94-36-0]

DESCRIPTION

A colorless, crystalline solid having a faint odor of benzaldehyde. It is insoluble in water, slightly soluble in alcohol, and soluble in chloroform and ether. One g dissolves in 40 mL of carbon disulfide. It melts between 103° and 106° with decomposition.

> **Caution**: Benzoyl Peroxide, especially in the dry form, is a dangerous, highly reactive, oxidizing material and has been known to explode spontaneously. Observe safety precautions printed on the label of the container.

Functional Use in Foods Bleaching agent.

REQUIREMENTS

Identification To 500 mg of the sample add 50 mL of 0.5 *N* alcoholic potassium hydroxide, heat gradually to boiling, and continue boiling for 15 min. Cool, dilute to 200 mL with water, and make the solution strongly acid with 0.5 *N* hydrochloric acid. Extract with ether, dry the extract with anhydrous sodium sulfate, and then evaporate to dryness on a steam bath. The residue of benzoic acid so obtained melts between 121° and 123° (see Appendix IIB).
Assay Not less than 96.0% of $C_{14}H_{10}O_4$.
Heavy Metals (as Pb) Not more than 0.002%.
Lead Not more than 10 mg/kg.

TESTS

Assay Dissolve about 250 mg, accurately weighed, in 15 mL of acetone in a 100-mL glass-stoppered bottle, and add 3 mL of potassium iodide solution (1 in 2). Swirl for 1 min, then immediately titrate with 0.1 *N* sodium thiosulfate (without the addition of starch TS). Each mL of 0.1 *N* sodium thiosulfate is equivalent to 12.11 mg of $C_{14}H_{10}O_4$.
Heavy Metals Mix 1 g with 5 mL of 1 *N* sodium hydroxide, slowly evaporate to dryness on a steam bath, cool, and dissolve the residue in 25 mL of water. This solution meets the requirements of the *Heavy Metals Test*, Appendix IIIB, using 20 μg of lead ion (Pb) and 5 mL of 1 *N* sodium hydroxide in the control (*Solution A*).
Lead Mix 1 g with 10 mL of 1 *N* sodium hydroxide, slowly evaporate to dryness on a steam bath, and cool. A *Sample Solution*, prepared as directed for organic compounds from the residue so obtained, meets the requirements of the *Lead Limit Test*, Appendix IIIB, using 10 μg of lead ion (Pb) in the control.

Packaging and Storage Store in the original container and observe the safety precautions printed on the label.