

Chemical Stability of Pharmaceuticals

A Handbook for Pharmacists

Second Edition

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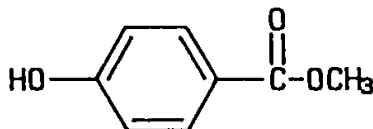
Methyl Paraben

GENERAL

Names

Methyl paraben; methyl *p*-hydroxybenzoate.

Structure



$C_8H_8O_3$

mol. wt. 152.15

Forms Available

Methyl paraben.

Physical Properties

Melting point 126 to 128°C. Solubility: 1 g dissolves in 400 mL of water, 3 mL of alcohol, 10 mL of ether; 1 g in 50 mL of water at 80°C. Soluble in acetone and glycerin (1).

Stability Summary

Methyl paraben undergoes acid-catalyzed and base-catalyzed ester hydrolysis, the pH of maximum stability being near pH 4. The base-catalyzed kinetics are complicated by ionization of the phenolic group, so that hydrolysis at very high pH occurs more slowly than would be anticipated for a simple uncharged ester. Hydrolysis is followed by decarboxylation of *p*-hydroxybenzoic acid to give phenol.

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