Phenylacetone

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Monograph Number: 7353
Title: Phenylacetone
CAS Registry Number: 103-79-7
CAS Name: 1-Phenyl-2-propanone
Additional Names: benzyl methyl ketone
Molecular Formula: $C_9H_{10}O$
Molecular Weight: 134.17.
Percent Composition: C 80.57%, H 7.51%, O 11.92%
Line Formula: $C_6H_5CH_2COCH_3$
Literature References: Prepn from phenylacetic and acetic acids: R. H. Pickard, J. Kenyon, *J. Chem. Soc.* **105,** 1124 (1914); R. M. Herbst, R. H. Manske, *Org. Syn.* **coll. vol. II,** 389 (1943); from α-phenylacetoacetonitrile: P. L. Julian, J. J. Oliver, *ibid.* 391; from α-methyl-α-phenylethylene oxide: S. Danilow, E. Venus-Danilowa, *Ber.* **60,** 1050 (1927); from diethyl malonate: H. G. Walker, C. R. Hauser, *J. Am. Chem. Soc.* **68,** 1386 (1946). Conformational calculations: M. Hirota *et al., Tetrahedron* **39,** 3091 (1983). Use as prochiral ketone in enantioselective hydrosilylation: H. Brenner *et al., Ber.* **117,** 1330 (1984).
Properties: Oil, mp -16 to -15°. bp_{760} 214°; bp_{14} 100-101°. d_4^{20} 1.0157. n_D 1.5174. uv max (ethanol): 258, 283 nm (ε 255, 150).
Melting point: mp -16 to -15°
Boiling point: bp_{760} 214°; bp_{14} 100-101°
Index of refraction: n_D 1.5174
Absorption maximum: uv max (ethanol): 258, 283 nm (ε 255, 150)
Density: d_4^{20} 1.0157
NOTE: This is a controlled substance: **21 CFR,** 1308.12.
Use: In organic synthesis; production of benzyl radicals by photolysis.