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Fluorobenzene possesses some remarkable properties. For example, the solubility of O_2 in FC_6H_5 is greater than for other alkylbenzene or monohalobenzene derivatives. The relative solubility of O_2 in toluene is 8.77 as compared to 15.08 for FC_6H_5 (Naumenko, N. V.; Mukhin, N. N.; Aleskovikii, V. B. *Zh. Prikl. Khim. (Leningrad)* **1969**, *42*, 2522). Furthermore, fluorobenzene possesses unusual solvent property parameters and is more polar than toluene. The following data were measured at Zeneca Ltd.

parameters[a]	toluene	fluorobenzene
Gutmann donor no.	0.1	3.00
dipole moment	1.0	4.90
dielectric constant	2.38	5.42
$E_{T(30)}$	33.9	37
solvatochromic π^*	0.54	0.62

Like most aromatic solvents, fluorobenzene is highly flammable ($F_p = -12$ °C). It is irritant to the skin and can cause serious damage to the eyes. It is only weakly toxic by inhalation (rat; LC_{50} = 27 mg/L) and even less by ingestion (rat; LC_{50} = 4000 mg/L). On large-scale experiments, it can be easily recycled by drying and distillation.

Typical Experimental Procedure. Oxidation of (±)-Borneol. Fluorobenzene (100 mL), CuCl (160 mg, 1.62 mmol, 5 mol %) and phenanthroline (292 mg, 1.62 mmol, 5 mol %) were added to a 200 mL two-necked flask fitted with a reflux condenser and an air inlet tube. After the mixture was stirred for 15 min at rt, K_2CO_3 (1.1 g, 8.1 mmol, 25 mol %) and DBAD (373 mg, 1.62 mmol, 5 mol %) were added, and the stirring was continued for another 5 min. Borneol (5 g, 32.4 mmol), dissolved in 60 mL of fluorobenzene, was then added over 5 min. A gentle flow of oxygen was passed through the reaction mixture, which was heated at reflux for 5.5 h. After being cooled to rt, the black suspension was filtered through a pad of celigel (15 g of Celite mixed with 5 g of silica gel). The celigel was washed four times with 100 mL of CH_2Cl_2. The solution was decolorized with charcoal, and the solvent was removed under vacuum. The crude product (5.9 g) was dissolved in 15 mL of pentane and recrystallized at −78 °C to yield 3.67 g of camphor. A second crystallization from the concentrated mother liquor yielded another 0.57 g of camphor (total amount: 4.24 g, 86%, mp 173−175 °C (authentic sample mp 175 °C)).