Peroxides and Chromium Compounds – The Ether Test for Identity

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Chromium compounds and hydrogen peroxide are usually identified by their reaction to form blue chromium oxide peroxide hydrate, which is extracted with diethyl ether as a co-ligand. Findings suggest that diethyl ether can be replaced without loss in analytical performance using solvents from the alcohol, arene, ester, ether, halogenated hydrocarbon, and ketone series. DFT calculations have been performed for several solvates. Results indicate that some of the solvates studied may exist as two rotamers.

Key words: Chromium, Electronic Spectra, Peroxides, Solvates of Chromium Oxide Peroxide, DFT Calculations