Excitation Wavelength Dependence of ACRYLODAN Fluorescence Spectra in Some Polar Solvents

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The fluorescence of ACRYLODAN (6-acryloyl-2-dimethylamino-naphtalene) consists of two bands in liquid polar solvents like 1,2-dichloroethane, N,N-dimethylformamide, or acetonitrile. The intensity ratio of long emission (LE) and short emission (SE) bands, LE/SE, depends on the excitation wavelength. For λ_{exc} = 420 nm only LE band appears. The observed two fluorescence bands of ACRYLODAN in polar solvents containing trace amounts of water originate from two different components: LE of ACRYLODAN and SE of the product resulting from hydrolysis back to 2-dimethylaminonaphtalenic acid.

Key words: Solvatochromic Fluorescence Band Shifts; ACRYLODAN-Fluorescent Probe; Dual Fluorescence.