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§ 796.1050 Absorption in aqueous solution: Ultraviolet/visible spectra.

(a) Introductory information—(1) Guidance information.

(b) Method—(1)(i) Introduction, purpose, scope, relevance, application and limits of test. (A) The primary environmental purpose in determining the ultraviolet-visible (UV-VIS) absorption spectrum of a chemical compound is to have some indication of the wavelengths at which the compounds may be susceptible to photochemical degradation. Since photochemical degradation is likely to occur in both the atmosphere and the aquatic environment, spectra appropriate to these media will be informative concerning the need for further persistence testing.

(B) Degradation will depend upon the total energy absorbed in specific wavelength regions. Such energy absorption is characterized by both molar absorption coefficient (molar extinction coefficient) and band width. However, the absence of measurable absorption does not preclude the possibility of photodegradation.

(ii) Definitions and units. The UV-VIS absorption spectrum of a solution is a function of the concentration, c, expressed in mol/L, of all absorbing species present; the path length, d, of the spectrophotometer cell, expressed in cm; and the molar absorption (extinction) coefficient, ε, of each species. The