

Gross Alpha by Liquid Scintillation

Carolyn T. Wong, Violeta M. Soliman, and S. Kusum Perera
California Department of Health Services
Sanitation & Radiation Laboratories Branch
2151 Berkeley Way, Room 119
Berkeley, CA 94704-1011

A procedure for gross alpha and gross beta analysis in water by liquid scintillation counting is being proposed as a new ASTM standard test method. The proposed method has the advantages of high counting efficiencies, low backgrounds for gross alpha counting and the ability to handle sample aliquots containing up to 500 mg of dissolved solids. It is expected that this method might be used as an alternative to proportional counting for drinking water samples. Data used to determine the optimum scintillation cocktail and acid mixture as well as the optimum counting conditions will be presented. The effect of various standard water matrices on the efficiencies and spillovers for both liquid scintillation counting and proportional counting will be discussed. Estimates of the Minimum Detectable Activity (MDA) for both techniques will be compared.