

## Method

References: APHA Standard Methods, 20<sup>th</sup> ed., pp. 4-82, Method 4500 F<sup>-</sup> (1998). USEPA Methods for Chemical Analysis of Water and Wastes, Method 340.1 (1974, 1978). Thomas and Chamberlain, 1974, Colorimetric Chemical Analytical Methods, 8<sup>th</sup> ed., pp. 186-193.

Fluoride can occur naturally in water, and may also be added in controlled amounts. Accurate determination of fluoride concentrations has become increasingly important as the practice of fluoridation of drinking water supplies as a public health measure has increased. Monitoring and maintaining optimum fluoride levels is essential to maintain effectiveness and safety of the fluoridation process. Fluoride compounds are also involved in the production of aluminum, steel, uranium, cement, enamel, and plastics.

The Fluoride Vacu-vials<sup>®</sup> test method is based on the reaction between fluoride and a red zirconium-dye lake that has been formed with SPADNS. The loss of color resulting from the reaction of the fluoride with the dye lake is a function of the fluoride concentration. Results are expressed in ppm (mg/L) F<sup>-</sup>.

This method is approved by the USEPA for NPDES and NPDWR reporting purposes when the samples have been distilled from an acid solution. Seawater and wastewater samples must be pre-distilled. Distillation removes most contaminating interferences except chlorine. Sodium Arsenite has been added to remove up to 5 mg/L chlorine.

## Instrumental Kit

### V-2000 Multi-Analyte Photometer

(See page 8 for instrumental features)

Range: 0.30-2.00 ppm  
Method: SPADNS

	Cat
Vacu-vials Kit	K-4003 <sup>1</sup>

Kit comes in a cardboard box and contains everything needed to perform up to 29 tests (except distilled water): thirty ampoules, 25 mL sample cup, instructions, calibration tables, and MSDS.

*Vacu-vials Kits require the use of the V-2000 Photometer or a spectrophotometer capable of accepting a 13 mm diameter round cell. Instrument sold separately.*

#### Kit Components common to Fluoride

Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013

<sup>1</sup>Although the test kit contains 30 ampoules, a fresh reagent ampoule blank must be prepared for each series of tests; therefore, the number of samples that can be tested with each refill will vary from a maximum of 29 to a minimum of 15.

*If no shelf-life is listed for a product, then the shelf-life is at least 2 years.*

