# Method 9 - Fluoride (F)

**Sample Weight: 0.5 g**

## Summary

Fluoride is determined by Ion-Selective Electrode (ISE) following a sodium hydroxide fusion. The sample is fused with a mixture of sodium hydroxide, potassium nitrate and silica to release fluoride ions from the sample matrix followed by dissolution of the fusion cake in dilute nitric acid. Prior to measuring the fluoride activity of the sample solution using an ion-selective electrode, an ammonium citrate solution is added to buffer the pH, maintain a constant ionic strength, and dissociate any metal ion-fluoride complexes. The fluoride concentration in the sample is then determined by interpolation from standard calibration curves.

## Method 9 Reporting Limits

The reporting limit range for Fluoride is 0.01% to 10%.

## Analytical Performance

Data will be deemed acceptable if recovery of Fluoride is ±20% at five times the Lower Limit of Determination (LOD) and the calculated Relative Standard Deviation (RSD) of duplicate samples is no greater than 20%.