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Potentiometric Titration Application Notes Applications Log # **671**

Overview The potassium content in potatoes is determined by a multiple known addition technique using 0.098 M potassium standard on the Orion 930 Ionalyzer. A half-cell potassium electrode is used along with a double junction reference electrode, and the 930 Calculates the result and reports it as ppm (w/w).

Market	Food and Beverage	***Species Measured***	Potassium
Sample	Potato Products	***Sample Size***	Approximately 10g
		Typical Concentration	~17000 ppm
Technique #	2 Multiple Known Addition	***Electrode***	Potassium 9319BN; DJ Ref 900200

Solutions Potassium Known Addition Standard (Cat. 921906); Potassium Ionic Strength Adjustor (Cat. 931911); Reference Electrode Fill Solution (inner) (Cat. 900002); Reference Electrode Fill Solution (outer) (see electrode manual).
Thermo Orion 930 (Cat. 093000)

Sample Prep For sample D (cooked potatoes) crush and mix several potatoes with a mortar and pastle. Weigh and record approximately 10g of crushed potato, and quantitatively transfer to a blender filled with deionized water to just above the level of the blades. Allow

blender to run at maximum speed for 1 minute, or until is no visible solid left. Transfer solution to a 500 ml volumetric flask using a funnel to insure that no sample is lost. Rinse the cover and inside the blender repeatedly with small aliquots of deion

Statistics

# of Trials	10	***Mean***	17873 ppm	***%CV***	1.62	***Analysis Time***	

Comments Rinse the electrodes, stirrer, and dispenser probe thoroughly between measurements with deionized water.
Potato solution is kept on the magnetic stirrer to make sure samples are homogeneous.

between samples. Sample weight entered is one tenth of the weighed sample.

Method Parameters

Sample Volume/Weight	1.019 g	***Timed or Stability Readings***	2.0 mv/min
Constant Increment	18.0 mv	***Number of Endpoints***	
Max Titrant Volume	15.00 ml	***Desired Units***	ppm-w
Molecular weight	150.2	***Predose***	0
Prestir		***Additional Parameters***	Std 0.0980 M; Precision = 2.0 %; TotVol = 51.00 ml
Reaction Ratio	1.0		