



Overview

Potassium in orange and tomato juice is determined by a Thermo technique called KAP Analysis. Aliquots of a potassium standard are added automatically to a diluted sample, containing a potassium electrode. The Orion 960 Autochemistry System calculates the sample concentration and electrode slope, and verifies the results through a spike recovery test.

Market	Food and Beverage	Species Measured	Potassium
Sample	Tomato Juice	Sample Size	3.0g
		Typical Concentration	245 mg/100g
Technique #	2 Multiple Known Addition	Electrode	Potassium 9319BN; DJ Ref 900200
Solutions	(0.4M KCl in 0.1M NaNO ₃); 5M ISA 931911; Deionized water; Ref Electrode Fill		
Sample Prep	Accurately weigh about 3 g of orange juice into a sample beaker and pipet 50 mL of deionized water and 1 mL of ISA solution. Total solution volume is 54 mL. A positive displacement pipet can handle orange juice better than an ordinary pipet and gives more reproducible weights.		
Statistics			
# of Trials	10	Mean	244.6 mg/100g
		%CV	0.52
		Analysis Time	1.0minute(s)
Comments	Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water.		

Method Parameters

Sample Volume/Weight	54.00 mL	Timed or Stability Readings	3.0 mV stability
Constant Increment	18.0 mV	Number of Endpoints	
Max Titrant Volume	5.00 mL	Desired Units	mg / 100 g
Molecular weight	39.10	Predose	none
Prestir	3.0 second(s)	Additional Parameters	
Reaction Ratio	1.00		