



Overview

The concentration of sodium in fitness water was determined by using the Double Known Addition technique and the Orion 86-11 ROSS Sodium Electrode. The Orion 960 Autochemistry System calculates the sample concentration by analyzing the millivolt change after each addition.

Market	Food and Beverage	Species Measured	Sodium
Sample	Fitness water	Sample Size	50 mL
Technique #	2 Double Known Addition	Typical Concentration	10 - 15 mg/l
Solutions	1000 ppm Sodium Known Addition Std w/ ISA (841109); Sodium ISA (841111); Ref Electrode Filling solution (900010); Sodium Reconditioning Solution (841113); Sodium Electrode Storage Solution (841101); Sodium Electrode rinse solution.		
Solutions preparation:	To prepare 1 L of sodium electrode rinse solution, add 10 mL of the ISA to a 1 liter squeeze bottle and fill it with distilled water.		
Titration standardization	Sodium Orion 841109 standard is already standardized.		
Sample Prep	Accurately pipette 50 mL of sample and 5 mL of ISA into a beaker.		
Statistics			
# of Trials	3	Mean	11.03 mg/L
		%CV	6.6%
		Analysis Time	2.2 min.
Comments	Rinse the electrodes, stirrer, and dispenser probe thoroughly between measurements with sodium electrode rinsing solution.		

Method Parameters

Sample Volume/Weight	50 mL	Timed or Stability Readings	Stability 3.0 mV/min.
Constant Increment	N/A	Number of Endpoints	N/A
Max Titrant Volume	4.0 mL	Desired Units	mg/L
Molecular weight	22.99	Predose	0 mL
Prestir	1 sec.	Additional Parameters	Total solution volume - 55 mL.
Reaction Ratio	1		



Results

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METHOD 3 SUMMARY
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SAMPLE ID NUMBER: 10
TEST: _____
SITE: _____
ANALYST: _____
15:35 12-01-06 ELECTRODE: 1:Na+
TECHNIQUE 2 DOUBLE KNOWN ADDN
TOTAL SOLN VOL 55.000 mL
SAMPLE VOLUME 50.000 mL
STANDARD .04350 M of Sodium std
MAX STANDARD VOL 4.000 mL
STABILITY CRITERION 3.0 mV/min
PRESTIR 1.0 sec
CONTINUOUS STIRRING
REACTION RATIO 1.0000
MOLECULAR WEIGHT 22.99
CAL CONSTANT 1.00000

electrode check:+/- 0.3 mV
ok

0 v= 0.000 mL E= -118.4 mV 23 sec
1.7 mV/min drit +/- 0.0 mV/noise
1 v= 0.650 mL E= -99.4 mV 42 sec
1.4 mV/min drit +/- 0.0 mV/noise
unkn= 11.7

2 v= 4.000 mL E= -67.5 mV 50 sec
1.0 mV/min drit +/- 0.0 mV/noise
S= 58.3 Eo= 76.6 unkn= 11.4

2.2 min
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DOUBLE INCREMENT ANALYSIS
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SAMPLE = 11.4 mg/L (double)
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