

Sodium in Carbonated Beverages

Orion 4-Star pH/ISE
Benchtop Meter

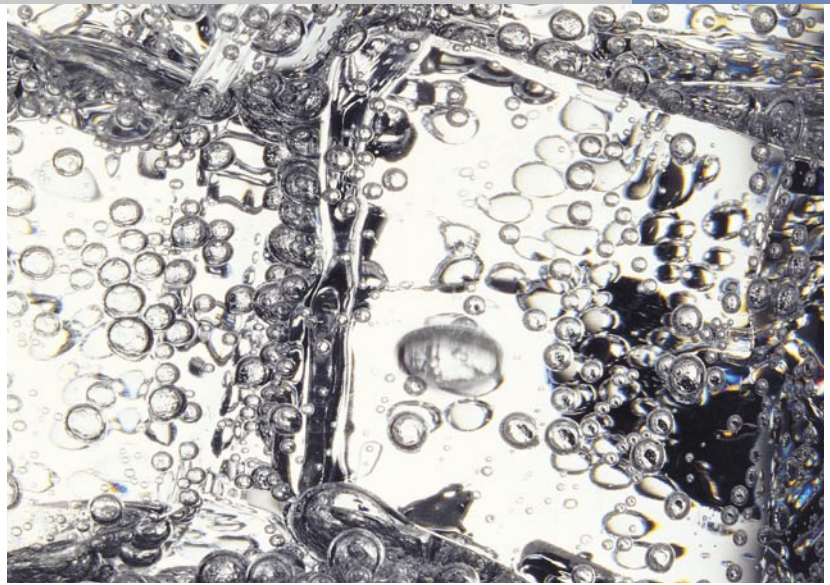
Food and Beverage

Many people are becoming sodium conscious. In the 2000 Dietary Guidelines for Americans, the U.S. Departments of Agriculture (USDA) and Health and Human Services (FDA) recommend drinking beverages with less sodium.

The new Orion 4-Star pH/ISE meter and ROSS™ Sureflow®, Sodium Electrode (Cat. No. 8611BNWP) assures beverage manufacturers the most stable and fast sodium measurements for quality assurance and nutritional labeling purposes.



For instructions sodium measurements in carbonated beverages using Orion products, download our Star Series meter information at www.thermo.com/water.



Orion 4-Star pH/ ISE for Sodium in Carbonated Beverages

Sodium is a mineral needed by the human body for regulation of fluid balance, contraction of muscles and conduction of nerve impulses. To maintain the sodium/water equilibrium, excess sodium is removed via the kidneys. Table salt contains sodium. The human adult needs 500 to 1000 milligrams of sodium per day. A daily sodium intake between 1,100 and 3,300 milligrams is considered safe and adequate. This is equal to the amount of sodium in approximately 1 teaspoon of table salt. In fact, the average American consumes 2,500 to 5,000 milligrams per day.

Identified as a potential health risk, it has been shown that reducing sodium in the diet may reduce high blood pressure in

some people. This in turn can decrease the likelihood of heart or kidney disease and stroke. Under regulations from the Food and Drug Administration of the Department of Health and Human Services and the Food Safety and Inspection Service of the U.S. Department of Agriculture, food and beverage labels offer more complete, useful and accurate nutrition information than ever before. FDA's rules implement the provisions of the Nutrition Labeling and Education Act of 1990 (NLEA), which requires nutrition labeling for most beverages and authorizes the use of nutrient content claims and appropriate FDA-approved health claims.

Orion 4-Star pH/ISE

Thermo Electron's advanced technology offers you superior quality with the Orion 4-Star pH/ISE meter. Ensure analysis integrity with built in GLP features of password protected methods, time date stamp, stored calibration & more. This package is upgradable with 21 CFA Part 11 compliant software that includes system validation, security and audit trails, archiving and retrieval.

Orion 4-Star pH/ISE Specifications:

Specifications		Benefit
pH		
Readout Range / Resolution	-2.000 to 19.999 or 0 to 14 in aqueous solutions / 0.1,0.01,0.001	Calibration point flexibility
Relative Accuracy	± 0.002	For exceptional accuracy
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic	Optimized accuracy, precision & response time
AUTO-CAL™ and/or Manual Calibration	1 to 5 points; US/NIST, DIN, and custom buffers recognized	Protocol compliance
ISE		
Range / Resolution	0 to 19900 / 1,2, or 3 significant digits	Wide operating range/Increased accuracy
Relative Accuracy	± 0.2 mV or 0.05%, whichever is greater	
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic	Optimized accuracy, precision, & response time
Units	M, mg/L, %, ppb, or no units	Choice of reporting units
# ISE Cal points	1 to 5	
Special ISE Calibration Features	Linear point to point, selectable auto-blank non-linear, low concentration range	
Temperature		
Range / Resolution	-5 to 105 °C / 0.1 up to 99.9 °C, 1.0 over 99.9 °C	Allows for temperature variations
Relative Accuracy	± 0.1 °C	
Temperature Compensation	Auto/Manual	
Display	Custom backlit LCD, for easy viewing	Easy to read screen
Special GLP Software Features		
# Of Data Logging Points	200 points by time, stability or manual read with time/date stamp	Expanded data storage available
Calibration Log	Last 10 Calibrations	Establish audit trail
User Method Storage	10 Saved	For easy retrieval of routine tests
Power	Universal power adapter and battery power 4 x AA batteries	Data is secure
Regulatory and Safety	CE, CSA, UL, TÜV, FCC Class A limits	Meets all necessary regulations
Environmental Operating Conditions		
Ambient Operating Temperature	5 to 45 °C	
Relative Humidity	5 to 85% Non-Condensing	
IP Rating	IP54, splashproof and dustproof	
Warranty	36 months (from date of purchase)	Reduces service cost

Equipment needed for pH/ISE measurement using the Orion 4-Star pH/ISE meter:

Above data generated under optimal/controlled circumstances.

Description	Orion Cat. No.
Sodium Application Package (includes items listed below)	1010144
Star Series Method Note: Sodium in Carbonated beverages	M-1413-E
4-Star benchtop pH/ISE meter	1115000
ROSS™ Sure-Flow®, Sodium Electrode	8611BNWP
Sodium Standard (1000 ppm)	841108
Sodium Standard (100 ppm)	941107
Sodium Standard (10 ppm)	941105
Electrode Fill Solution (5 X 60 mL)	900010
Benchtop Stirrer	096019
Benchtop Electrode Stand	1110001
Sodium Ionic Strength Adjuster, 475 mL	841111

ROSS and the COIL tradenames are trademarks of Thermo Electron Corporation. US Patent 6,793,787.

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T-1413-E 02/05 RevB

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