

Environmental

The pH level in salt water can affect the aquatic life and plant life indicative of declining quality of the water. For saltwater, a healthy pH level is approximately 8.3.

Thermo Electron Corporation offers a pH test method to support the increasing regulations mandated by the U.S. EPA.

pH of Salt Water

Orion 3-Star pH
Portable Meter



For instructions on pH measurements using Orion products, download our Star Series meter information at www.thermo.com/water.



pH of Salt Water

The pH level is very important in saltwater since it is a guideline as to when the water quality is declining. As natural acids build up, the pH level will start to drop. Some primary causes for a pH decrease level are excess carbon dioxide (CO₂) from respiration caused by lack of sufficient gas exchange and organic acids from metabolic wastes. Respiration and metabolic waste are a natural part of the ocean ecology and do not impact sea water pH since it contains a number of buffer chemicals, (ie: bicarbonate, calcium, carbonate and borate and hydroxide). The pH level drops when the buffering capacity is depleted.

The best method for monitoring the pH level is performing regular pH tests with a quality product, such as the Orion 3-Star pH portable meter (Cat. No. 1212000) and the Orion pH Triode™ (Cat. No. 9157BNWP). The Orion 3-Star pH is ideal for field applications with a waterproof locking probe connector, easy three-button operation and a clear intuitive user interface. With up to 200 point datalogging capability and up to 10 setup parameters and calibration that can be stored and password-protected, this meter is ideal for multiple users.

Orion 3-Star pH

Thermo Electron's advanced technology offers you superior quality with the Orion 3-Star pH meter (Cat. No. 1212000) and simpler, faster measurements with the Orion pH Triode™ (Cat. No. 9157BNWP) than with any other analytical techniques.

Orion 3-Star pH 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	Bracket your sample pH
Relative Accuracy	± 0.002	Better for calibration points
SMART STABILITY™ and SMART AVERAGING™	Resolution dependent / automatic	More precise measurement
AUTO-CAL™ and/or Manual Calibration	1 to 5 points; US/NIST, DIN, and custom buffers recognized	Reduces set up time
Temperature		
Range / Resolution	-5 to 105 °C / 0.1 up to 99.9 °C, 1.0 over 99.9 °C	Allows for temperature variation
Relative Accuracy	± 0.1 °C	
Temperature Compensation	Auto/Manual	
Display	Custom backlit LCD, for easy viewing	Simple to read
Special GLP Software Features		
# Of Data Logging Points	200 points by time, stability or manual read with time/date stamp	Flexibility to meet your needs
Calibration Log	Last 10 Calibrations	
User Method Storage	10 Saved	Expanded data storage available
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		Meets normal sample 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 costs

Above data generated under optimal/controlled circumstances.

Equipment needed for pH measurement using the Orion 3-Star pH meter:

Description	Orion Cat. No.
pH Application Package (includes all items listed below)	1010115
Star Series Method Note: pH of Saltwater	M-1014-E
3-Star Portable pH meter	1212000
Low Maintenance pH Triode w/ATC	9107BNMD
Portable Meter, Rubber Armor & Storage Sleeve Insert	1210002
Electrode rinse solution	911125
Soft Pack Field case	1210005
pH 4.01 buffer, 10 pack	910410
pH 7.00 buffer, 10 pack	910710
pH 10.01 buffer, 10 pack	911010

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