

pH of Hair Care Products

Orion 3-Star pH Benchtop Meter

Consumer Products:

The measurement of pH is one of the most common analytical techniques used in chemistry laboratories today. The pH of a substance indicates its overall acid/alkaline level. If a solution is too acidic or too basic it may be considered an irritant or can even cause tissue damage burns. For this reason, pH measurement is extremely important for manufacturers of hair care products.

Thermo Electron Corporation offers a wide range of meters, electrodes and consumables to accurately measure pH levels in a variety of samples.



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



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Sebum, the hair's natural oil, has a pH level of about 5. Most shampoos range between pH 5 and 7, which is fine for most consumers. Medicated shampoos have a more neutral pH of about 7.3. If a shampoo is "pH-balanced," its pH level is close to that of hair, a plus for consumers with chemically treated or damaged hair. Since pH has an effect on the hair's condition, it is an important measurement in all hair care products such as shampoo, conditioner and hair gel.

Many manufacturers use Orion products everyday for purposes of Research & Development, Quality Control and Product Labeling. Our pH meters, electrodes and solutions help to ensure the accuracy of

ingredient content, which is critical in order to comply with the Food, Drug and Cosmetic Act set forth by the FDA.

With the easy to use Orion 3-Star pH meter (Cat. No. 1112000) and Orion ROSS Ultra® electrode (Cat. No. 8115BNUWP), pH measurements are fast and accurate. This rugged meter offers a full complement of GLP-related features and can store up to 10 setup parameters and calibrations; a valuable feature for busy multi-user labs. Orion products offer top quality meter features with proven electrode technology to provide a complete package needed to meet the applicable FDA regulations for safe levels of pH in hair care products.

Orion 3-Star pH

The simple to operate Orion 3-Star pH meter (Cat. No. 1112000) and Orion ROSS Ultra® electrode (Cat. No. 8115BNUWP) offer the optimum solution to meet pH measurement needs.

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	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
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
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

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)	1010160
Star Series Method Note: pH of Hair Care Products	M-1803-E
3-Star benchtop pH meter	1112000
ROSS™ Combo Epoxy Semimicro electrode	8115BNUWP
Star ATC glass body probe	927006MD
Benchtop Stirrer	096019
pH 4.01 buffer, 475 mL	910104
pH 7.00 buffer, 475 mL	910107
pH 10.01 buffer, 475 mL	910110
ROSS pH electrode storage solution	810001
Benchtop Electrode stand	1110001

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