

Ammonia in Wastewater

Orion 4-Star pH/ISE
Benchtop Meter

Environmental

Ammonia can be harmful to aquatic life and should be reduced to relatively harmless nitrate and nitrite before it is released to the environment. Thermo Electron Corporation offers a range of quality instruments, electrodes and consumables to correctly measure ammonia levels in a variety of samples.



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



Orion 4-Star pH/ ISE for Ammonia in Wastewater

Ammonia can have many negative effects on the environment and it is becoming an increasingly more important aspect of wastewater management. The overall efficiency of a wastewater plant is based upon the reduction of ammonia to 10-12 mg/L of nitrogen by converting the ammonia via oxidation to relatively harmless nitrate and nitrite.

High levels of ammonia result in visible contamination in wastewater ponds and reservoirs. The potential ecological impacts include excessive algae growth, and excessive sludge generation causing poor water quality for the support of aquatic life and can harbor organisms that contribute

to disease. The Orion 4-Star pH/ISE meter (Cat. No. 1115000) and Orion Gas-Sensing Ammonia electrode (Cat. No. 9512BNWP) can detect the lowest levels of nitrogen (as ammonia) in wastewater. The new 4-Star meter is superior to the competition with its wider measurement range, more stable calibration and wide temperature variation. The new Orion 4-Star meters and electrodes offer superior performance and are backed by revolutionary electrode technology. The Orion 4-Star pH/ ISE meter and Ammonia electrode will provide quality measurements and accurate results.

Orion 4-Star pH/ISE

Thermo Electron's advanced technology offers you superior quality with the Orion 4-Star pH/ISE meter (Cat. No. 1115000) and simpler, faster measurements with the Orion Ammonia electrode (Cat. No. 9515BNWP) than with any other analytical techniques.

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%, of mV reading 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
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.
Ammonia Application Package (includes all items listed below)	1010109
Star Series Method Note: Ammonia in Wastewater	M-1008-E
4-Star benchtop pH/ISE meter	1115000
Orion Gas-sensing Ammonia electrode	9512BNWP
Ammonia Standard, 100ppm as N	951207
Ammonia pH Adjuster ISA	951211
Ammonia electrode fill solution	951202
Benchtop electrode stand	1110001
Benchtop stirrer	096019
pH 4.01 buffer, 475 mL	910104
Replacement membranes	951204

Thermo
ELECTRON CORPORATION

www.thermo.com

Environmental Instruments Water Analysis Instruments

166 Cummings Center
Beverly, MA 01915 USA

Toll Free: 1-800-225-1480
Tel: 1-978-232-6000
Dom. Fax: 1-978-232-6015
Int'l Fax: 978-232-6031
www.thermo.com/water

