

For more information, please contact us:

[ExpotechUSA](#)  
[10700 Rockley Road](#)  
[Houston, Texas 77099](#)  
[USA](#)

[281-496-0900 \[voice\]](#)

[281-496-0400 \[fax\]](#)

E-mail: [sales@expotechusa.com](mailto:sales@expotechusa.com)

Website: [www.ExpotechUSA.com](http://www.ExpotechUSA.com)

**Food & Beverage**

**Measurement by Ion Selective Electrode (ISE) is one of the most common analytical techniques used in chemistry laboratories today. One common parameter measured using ISE methods is potassium, which is monitored by wineries and breweries.**

# Potassium in Wine/Beer

Orion 4-Star pH/ISE  
Benchtop Meter



**Orion 4-Star pH/ISE benchtop meter**

Potassium helps to prevent and control blood pressure. Many potassium additives are present in wine and beer for the following purposes: potassium carbonate reduces the acidity; potassium metabisulphite is an anti-oxidant and preservative; and potassium sorbate is used to stabilize wine and prevent renewed fermentation.

Because optimizing potassium concentration is so important, many reputable wineries and breweries use Thermo products everyday for purposes of Research & Development and Quality Control. The Orion ISE meters, electrodes and solutions help to ensure product quality and taste.

With the easy to use Orion 4-Star pH/ISE benchtop meter (Cat. No. 1115000) and Orion ionplus® Potassium electrode (Cat. No. 9719BNWP) ISE measurements are fast and accurate. This rugged meter offers a full complement of GLP-related features and can store up to 10 set-up parameters and calibrations as methods; a valuable feature for busy multi-user labs.

Orion electrochemistry products offer top quality meter features with proven electrode technology to provide a complete package needed to measure potassium in wine and beer.

# Orion 4-Star pH/ISE

The  combined with the Orion ionplus® Potassium electrode (Cat. No. 9719BNWP) offers an optimum solution to meet ISE measurement needs.

## Orion 4-Star pH/ISE Specifications:

Specifications		Benefit
<b>pH</b>		
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
<b>ISE</b>		
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	
<b>Special ISE Calibration Features</b>	Linear point to point, selectable auto-blank non-linear, low concentration range	
<b>Temperature</b>		
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	
<b>Display</b>	Custom backlit LCD, for easy viewing	Easy to read
<b>Special GLP Software Features</b>		
# 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
<b>Power</b>	Universal power adapter and battery power 4 x AA batteries	Data is secure
<b>Regulatory and Safety</b>	CE, CSA, UL, TÜV, FCC Class A limits	Meets all necessary regulations
<b>Environmental Operating Conditions</b>		
Ambient Operating Temperature	5 to 45 °C	
Relative Humidity	5 to 85% Non-Condensing	
IP Rating	IP54, splashproof and dustproof	
<b>Warranty</b>	36 months (from date of purchase)	Reduces service cost

Above data generated under optimal/controlled circumstances.

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

Description	Orion Cat. No.
ISE Application Package (includes all items listed below)	1010141
Star Series Method Note: Potassium in wine and beer	M-1410-E
4-Star benchtop pH/ISE meter	1115000
Orion ionplus® Potassium electrode	9719BNWP
Benchtop Stirrer	096019
Potassium Activity Standard, 475 mL	921906
Potassium Ionic Strength Adjuster, 475 mL	931911
Optimum Results E Reference Fill Solution, 5x60 mL	900065
Electrode stand	1110001