



Parameter

Temperature in 384 well plate

Sample Type

Aqueous samples

Introduction

When measuring sample pH, it is often desirable to know the temperature of the sample as well. When used with the LogR feature of an Orion PerpHecT® Meter, the Orion 8220BNWP Ross™ Micro pH Electrode can measure both pH and temperature without the need for a separate temperature probe.

Result Statistics

# Trials	Average	Analysis Time
10	35.3°C	1 minute/sample
	%CV	
+/-0.02 pH units (as temp compensated)		

Recommended Equipment

PerpHecT® Benchtop pH Meter (Orion 035000),
Ross™ Micro pH Electrode (Orion 8220BNWP);
Thermometer, 384-well plates

Required Solutions

pH 7.00 and 10.01 Buffers (Orion 910107 and 910110);
Filling Solution (Orion 810007); deionized water (DI).

Solutions Preparation

None required

Meter Setup

Connect the electrode to the meter. Change Mode until °C, pH and mV are displayed. LogR feature must be turned on in Setup. When activated, “LogR” will be lit at the top of the meter display screen.

Electrode Setup

See the electrode manual for assembly and preparation of the electrode.

Electrode Performance Check

See calibration section below.

Electrode Storage, Soaking, and Rinsing

See electrode manual for storage 1) between measurements, 2) overnight, and 3) for long periods of time. Between measurements of different samples, rinse the electrode with DI water and blot dry before measuring the next sample.

Sample Preservation

As required

Sample Preparation

See App Note 10A

Calibration

Calibrate the electrode for temperature. See the PerpHecT® manual for detailed instructions of a two-point LogR calibration. Check the temperature calibration of the electrode each day by comparing the LogR result to a thermometer reading of the same sample. See troubleshooting section of meter manual if readings are not acceptable.

Analysis

Rinse electrode with DI water, blot dry, rinse in the first well (don't blot), and place in the second well containing sample. The pH value and temperature will be displayed, and a ready light will appear when a stable reading is achieved.

Comments

The testing done for the development of this application used pH 10.01 buffer as the aqueous sample.

Quality Control (QC)

Recommended QC procedures include: temperature calibration, calibration verification, and duplicates