



Parameter

USP 645 Water Conductivity, Star Navigator hints

Sample Type

Ultrapure water, water for injection

Introduction

This application log describes the use of Star Navigator software for USP 645 Water Conductivity testing and is a supplement to the application logs for USP 645 Water Conductivity Stages 1, 2, and 3.

Reference

USP <645> Water Conductivity, USP29-NF24, Page 2653, United States Pharmacopeial Convention, 12601 Twinbrook Parkway, Rockville, MD 20852-1790, USA. www.usp.org

Recommended Equipment

5Star benchtop pH/ISE/DO/conductivity meter (Orion 1010152); conductivity electrode (Orion 013016MD); Ross Ultra pH electrode (Orion 8102BNUWP); Star Navigator Software (Orion 1010007)

Required Solutions

100 uS/cm conductivity standard (Orion 011008); pH 4.01 buffer (Orion 910104); pH 7.00 buffer (Orion 910107); Ross fill solution (Orion 810007); deionized water (DI)

Electrode Setup for Conductivity Testing

The cell constant is printed on the conductivity electrode cable. On the meter (when not connected to the computer), press the “calibrate” key and when the cell constant is displayed, press the “digits” key within 5 seconds, before the meter goes into AutoCal mode. Note: do not perform an AutoCal at this time. Using the “scroll” and “digits” keys, adjust the display to match the cell constant from the cable.

Meter Setup for Conductivity Testing (Stages 1 & 2)

Connect the conductivity electrode to the Star meter. Turn on the meter and enter the cell constant (see Electrode Setup below) before connecting to the computer. In Setup mode of Star Navigator, set temperature compensation to off, conductivity cell type to standard, read type to auto, cell constant to 0.100 (nominal), and reference temperature (tREF) to 25. Choose conductivity measurement mode.

Meter Setup for pH Testing (Stage 3)

Connect the Ross Ultra pH electrode to the meter, turn meter on, and connect it to the computer. In Setup mode of Star Navigator, set pH resolution to 0.1 and Buffer Set to USA. Choose pH measurement mode. Change in meter display will not occur until first measurement is made.

Analysis – Conductivity (Stages 1 & 2)

Place conductivity electrode (which has been rinsed and shaken dry) into the sample bottle. Gently and briefly (e.g., 3 seconds) stir with the probe. Tap electrode, if necessary, to dislodge any bubbles. Click on “measure” and wait for the reading to stabilize. When stable, the conductivity and temperature values will be displayed on the computer screen and saved to file.

Analysis – pH (Stage 3)

Place pH electrode (which has been rinsed and blotted dry) into the stirring sample. Click on “measure” and wait for the reading to stabilize. When stable, the pH value will be displayed on computer screen and saved to file.