



**Parameter**

Temperature in 10x75mm test tube\*

**Sample Type**

Aqueous Sample

**Introduction**

It is often desirable to record the temperature of a small volume sample. The size, speed and accuracy of the micro ATC probe are advantageous for recording temperature of small sample sizes while causing minimal disturbance to the sample itself.

**Result Statistics**

**# Trials**

6

**Analysis Time**

less than 15 seconds per trial

**Recommended Equipment**

Star benchtop pH/ISE meter (Orion 1115000); micro ATC probe (Orion 928007MD), 10x75mm test tubes, NIST thermometer

**Required Solutions**

Deionized water (DI)

**Solutions Preparation**

As required

**Meter Setup**

Set the meter to continuous measure mode. See meter manual for assistance. Connect the probe to the meter. To ensure connection is secure, look to see that the temperature displayed at the top left of the screen reflects the current temperature of the probe.

**Electrode Setup**

None required

**Electrode Performance Check**

Check the probe's reading compared to a NIST thermometer. This can be done at room temperature.

**Electrode Storage**

Store the probe dry

**Sample Preservation**

As required.

**Sample Preparation**

None required.

**Calibration**

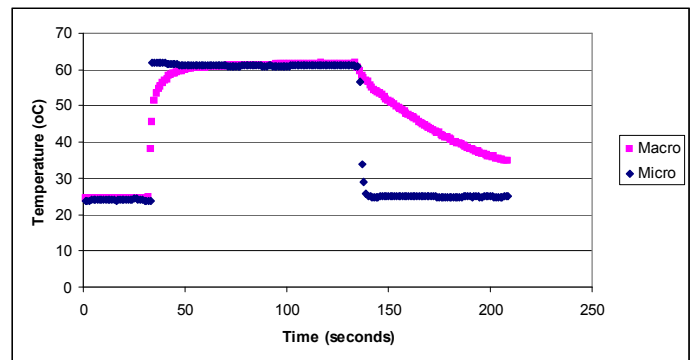
None required

**Analysis**

Rinse the probe with DI water and dry with lint free wipe. Place probe in sample and allow it to stabilize. Probe can be placed all the way into the sample to touch the vessel bottom or placed in an electrode holder so only tip is submerged in sample; there will be no difference in final temperature reading. Record temperature of sample.

**Comments**

The speed of the micro ATC probe makes it advantageous over the full size ATC probe in any sample size. As can be seen in the graph below, the micro ATC probe responds to change in temperature significantly faster (<15 secs) than the full size ATC probe (40-60 secs) while retaining the accuracy of the full size probe.



\*See Orion Application Note 12 on Minimum Sample Volumes for Micro pH and Micro ATC probes for other sample container sizes.