

pH METERS

PURDUE UNIVERSITY INSTRUMENT VAN PROJECT

FISHER pH METER INSTRUCTIONS AND REMINDERS

(Revised: 1-4-96)

Buffers (pH = 4, 7 and 10) **MUST** be available at the school site. Virtually all buffers must be diluted. **READ ALL LABEL INSTRUCTIONS!**

These instructions are for the use of ACCUMET GEL-FILLED ELECTRODES **only!**

Carefully remove the plastic cot from the tip of the electrode. Save the cot for future storage. Always exercise care when handling the electrode, since a slight scratch on the glass bulb can render the electrode useless. Rinse the electrode to remove any crystal residue that may have formed during storage. Remove the excess water on the electrode by shaking the probe or blotting dry with a Kimwipe[®]. Mount the electrode on the arm attached to the base of the FISHER pH METER, and connect the BNC to the meter.

In order for the meter to operate properly the BNC connector must fit snugly. To connect the probe to the meter:

1. Remove the protective cover from the input post.
2. Place the BNC connector over the input post and push down.
3. Turn clockwise to complete the connection.

Electrodes should never be left "high and dry". They should always be immersed except when they are being transferred from one solution to another. You have been supplied with a storage case in which to store the electrodes between uses. Never store the electrode in distilled or deionized water. This may lead to slow sluggish response caused by junction clogging. Between measurements immerse the electrode in a buffer solution (4 or 7 recommended). When the electrode is not in use, it is highly recommended that the plastic cot be replaced over the probe tip. Wet the cotton inside the cot with pH 4 or 7 buffer. Then while squeezing the cot place it over the tip of the probe and slide it on.

ALWAYS rinse the electrodes with distilled water and blot with a Kimwipe[®] upon removal from one solution before placing in another solution.

Glass electrodes are made up of very thin glass and are **VERY FRAGILE**. Care should be taken not to bump them on the bottom or sides of a container or with a stir bar.

For Use of the Fisher pH Meter in the Acid Range

You will need to calibrate two points: pH = 7 and pH = 4.

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To standardize (acid range), follow these steps:

1. Set the function at "**standby**".
2. Set the temperature at the solution's temperature.
3. Set the slope at 100%.
4. Place the electrode in the pH = 7 buffer.
5. Turn the function to "**pH**".
6. Wait for any fluctuations to subside, then turn the standardize knob until the meter reads 7.
7. Return the function to "**standby**".
8. Remove the electrode. Rinse it with distilled water, and blot **GENTLY** with a Kimwipe[®].
9. Place the electrode in the pH = 4 buffer.
10. Turn the function to "**pH**".
11. Wait for any fluctuations to subside. BE PATIENT!
12. Adjust the slope knob until the meter reads 4.
13. Turn the function to "**standby**".
14. Remove electrode from buffer; rinse; blot.

For Use of the Fisher pH Meter in the Base Range

You will need to calibrate two points: pH = 10 and pH = 7.

To standardize (base range), follow these steps:

1. Set the function at "**standby**".
2. Set the temperature at the solution's temperature.
3. Set the slope at 100%.
4. Place the electrode in the pH = 10 buffer.
5. Turn the function to "**pH**".
6. Wait for any fluctuations to subside, then turn the standardize knob until the meter reads 10.
7. Return the function to "**standby**".
8. Remove the electrode. Rinse it with distilled water, and blot **GENTLY** with a Kimwipe[®].
9. Place the electrode in the pH = 7 buffer.
10. Turn the function to "**pH**".
11. Wait for any fluctuations to subside. BE PATIENT!
12. Adjust the slope knob until the meter reads 7.
13. Turn the function to "**standby**".
14. Remove electrode from buffer; rinse; blot.