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| Standard Operating Procedure for:  **Measuring pH** | PPE required: |
| If you only need an approximate pH universal indicator paper may be more suitable and simpler. If you decide to use a probe always check the condition of the probe looking for damage and/or poor condition of fill. **Never bang or scratch the end of the probe as it is very delicate and has a VITAL and delicate gel layer on the outside surface**.  All solutions should be maintained at a constant temperature, if this is not possible a temperature probe should also be used. If your probe will not calibrate or is very slow to settle (more than 2 minutes) it may need to be reconditioned - please see a technician for more information on this. **Please see the N drive for more information**. |
| **Calibrating your pH probe and meter**  Normally a two or three point calibration is possible. If doing a two point calibration always calibrate in the pH range of the solutions you are testing.   1. Clean end of probe with deionized (DI) water and dry with a lab tissue taking care not to scratch the end of the probe. 2. Place probe in first calibration solution (normally pH 7.01) and press appropriate button on pH meter (normally labelled “CAL”). 3. You may now have to manually change the pH reading to that of the buffer using the arrow keys. 4. Keep the sample stirring during calibration but making sure that the end of the probe stays wet. 5. When pH meter has settled (this may take a minute or longer) press the appropriate button and remove probe from first solution and repeat cleaning step. 6. Repeat steps 2 to 4 with new calibration solutions.   **Using a pH probe and meter**   1. Clean end of probe with deionized water and dry with a lab tissue. 2. Keep stirring the sample whilst taking a measurement and make sure that the end of the probe stays wet. 3. Wait until the meter settles on a value and record that value then repeat cleaning step before starting new sample. 4. In between each sample it is advisable to check the calibration of your pH probe by testing the pH of a solution of known pH.   **After use**   1. Always make sure probe and probe casing are clean after finishing. 2. Check the glass pH sensitive membrane for cracks, chips, or discolouration. 3. When not in use the probe should be stored upright in storage solution ie 3-4M KCl or pH4 buffer. NOT LEFT DRY OR IN DI WATER. | **Hazard symbols:**  http://www.hse.gov.uk/chemical-classification/images/pictogram-gallery/irritant.gif |
| **Significant hazards:**  pH 4.0 calibration buffer solution is an irritant.  OTHER HAZARDS MAY ARRISE FROM INDIVIDUAL EXPERIMENTS. |
| **Hazard phrases (H):**  H315, H319 |
| **Can it be done out of hours?**  Calibration and measurement can be performed out of hours **unless individual experimental risks do not allow.** |
| **This SOP is not relevant in the following circumstances:**   1. SOP does not cover specific experimental risk these must be covered by user’s assessments 2. Any other situation where the procedure may result in harm to yourself or others. | |