# **10 STEPS FOR MEASURING PH ACCURATELY AND CONSISTENTLY**



#### **STEP 1:**

#### Select an appropriate measuring system

Select an appropriate system that includes metre, electrode, buffers and controls. The system must be fit for purpose

# STEP 2:



pH Meter Qualification Perform Equipment Qualification in order to obtain pH measurements that are fit for purpose and proven to be correct.

# STEP 3:

### pH Method Validation

The full test method must be <u>validated</u> to ensure it is fit for purpose – accuracy, precision, traceability, sensitivity.

# STEP 4:

# pH Electrode Selection

Variables that need to be considered include the physical configuration, sample, correct choice of electrolyte and correct choice of reference system.

#### STEP 5:

# pH Electrode Care & Maintenance

Adopt a routing <u>care and maintenance</u> programme for the pH electrode system to ensure accurate and reliable pH results.

### STEP 6:

# pH Electrode Fault Diagnosis & Remediation



The pH measuring system, meter or solution can cause errors during measurement but it is the reference electrode that causes up to 80% of errors or problems.



### **STEP 7:**

### Temperature Control of the pH Measurement System

<u>Temperature effects</u> can diminish the accuracy and speed of the electrode response and temperature coefficient of variation effects either the calibration buffers, sample or control materials.

# STEP 8:

pH Buffer Solutions



In order to obtain accurate and fit for purpose pH measurement, the correct selection, use and application of <u>pH buffers</u> is of utmost importance.

### STEP 9:

### pH Sample Management

It is important to consider your <u>sampling strategy</u>, containers, sampling equipment, preservation, storage and treatment prior to testing.

#### **STEP 10:**



#### Role of Accreditation in pH Measurement

The commercial production of high-quality pH buffer solutions involves the acquisition and maintenance of both accreditations and certifications.

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