Oakton WD-35805-04

Oakton WD-35805-04 Laboratory pH Electrode Instruction Manual

Model: WD-35805-04

Introduction

This manual provides comprehensive instructions for the proper setup, operation, and maintenance of your Oakton WD-35805-04 Laboratory pH Electrode. Adhering to these guidelines will ensure optimal performance and longevity of the device.

Product Overview

The Oakton WD-35805-04 is a double-junction, glass body, refillable pH electrode designed for laboratory applications. Its robust construction and double-junction design make it suitable for a wide range of chemical measurements, offering enhanced durability and resistance to aggressive chemicals. This electrode features an Ag/AgCl reference cell for stable and accurate readings.

Image 1: Oakton WD-35805-04 Laboratory pH Electrode. This image shows the full electrode, featuring a black top housing with an "OPEN" indicator, a clear glass body revealing internal components, and a blue spherical tip. A black cable extends from the top.

Key Features:

- **Double-Junction Design:** Minimizes contamination of the reference electrolyte by sample ions, extending electrode life and improving accuracy in complex samples.
- **Glass Body:** Provides excellent chemical resistance, making it suitable for use with aggressive chemicals and organic solvents.
- **Refillable:** Allows for replenishment of the reference electrolyte, prolonging the electrode's lifespan and maintaining performance.
- **Ag/AgCl Reference Cell:** Ensures stable and reliable potential readings.
- **Made in United States:** Manufactured to high quality standards.
- **Compact Dimensions:** Package dimensions are 10.9 x 4.1 x 2.2 inches, with an item weight of 6.38 ounces.

Setup

1. **Unpacking:** Carefully remove the electrode from its packaging. Inspect for any visible damage.
2. **Electrolyte Filling (if necessary):** This electrode is refillable. If the electrolyte level is low, open the fill hole (usually indicated by an "OPEN" arrow or cap) and carefully add the appropriate reference electrolyte solution (e.g., 3M KCl) until the level is just below the fill hole. Close the fill hole securely.
3. **Rinsing:** Rinse the electrode tip with distilled or deionized water to remove any storage solution. Do not wipe the glass bulb, as this can create static charges.
4. **Conditioning:** For optimal performance, soak the electrode in a pH 7 buffer solution for at least 30 minutes (or longer, up to several hours) before first use or after prolonged dry storage. This rehydrates the glass membrane.
5. **Connecting to Meter:** Connect the electrode's BNC connector (or other specified connector type) to the corresponding input on your pH meter. Ensure a secure connection.

6. **Calibration:** Calibrate your pH meter with the electrode using at least two, preferably three, fresh pH buffer solutions (e.g., pH 4.01, 7.00, and 10.00). Follow your pH meter's specific calibration procedure.

Operating Instructions

1. **Preparation:** Ensure the electrode is properly conditioned and calibrated.
2. **Sample Measurement:**
    - Rinse the electrode with distilled or deionized water between samples.
    - Immerse the electrode tip into the sample solution, ensuring the glass bulb and junction are fully submerged.
    - Stir the solution gently to ensure homogeneity and faster response.
    - Allow the reading to stabilize before recording the pH value. Stability is typically indicated by a stable reading on the pH meter for a few seconds.
3. **Temperature Compensation:** If your pH meter has automatic temperature compensation (ATC), ensure the temperature probe is also immersed in the sample. If not, manually input the sample temperature into the meter.
4. **Post-Measurement:** After each measurement, rinse the electrode thoroughly with distilled or deionized water.

Maintenance

- **Rinsing:** Always rinse the electrode with distilled or deionized water after each use to prevent sample residue buildup.
- **Storage:** Store the electrode in a dedicated electrode storage solution or pH 4 buffer solution**Never store the electrode dry or in distilled water**, as this will dehydrate the glass membrane and deplete the reference electrolyte. Ensure the storage cap is filled with solution and securely placed over the electrode tip.
- **Electrolyte Refill:** Regularly check the level of the reference electrolyte. If it is low, refill with the recommended solution (e.g., 3M KCl) as described in the Setup section.
- **Cleaning:**
    - **General Cleaning:** For routine cleaning, soak the electrode in a mild detergent solution for 15-30 minutes, then rinse thoroughly with distilled water.
    - **Protein Deposits:** Soak in a 1% pepsin solution in 0.1M HCl for 1 hour.
    - **Inorganic Deposits:** Soak in a 0.1M HCl or 0.1M HNO3 solution for 15-30 minutes.
    - **Grease/Oil Films:** Rinse with a mild solvent (e.g., ethanol or isopropanol), then immediately rinse with distilled water.

  After any cleaning procedure, recondition the electrode in pH 7 buffer for at least 30 minutes before use.
- **Calibration Frequency:** Calibrate your electrode regularly, ideally before each measurement session or at least daily, especially when high accuracy is required or when measuring samples with extreme pH values.

Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Slow Response / Unstable Readings	Dehydrated glass membrane Clogged junction Low electrolyte level Contaminated buffer solutions Temperature not stable	Recondition electrode in pH 7 buffer. Clean electrode as per Maintenance section. Refill electrolyte. Use fresh buffer solutions. Allow sample/electrode to reach thermal equilibrium.
Inaccurate Readings	Improper calibration Dirty electrode Expired or contaminated buffers Electrode nearing end of life	Recalibrate with fresh buffers. Clean electrode. Replace buffers. Consider replacing electrode if issues persist after cleaning/reconditioning.
No Reading / "Error" on Meter	Loose connection Broken electrode Meter malfunction	Check electrode connection to meter. Inspect electrode for visible damage (cracks in glass). Test meter with a known good electrode or consult meter manual.

Specifications

Attribute	Detail
Model Number	WD-35805-04
Electrode Type	Laboratory pH Electrode, Double-Junction
Body Material	Glass
Reference Type	Refillable Ag/AgCl
Package Dimensions	10.9 x 4.1 x 2.2 inches
Item Weight	6.38 ounces
Manufacturer	OAKTON Instruments
Date First Available	June 2, 2016
ASIN	B01GIRDK64
Best Sellers Rank	See Top 100 in Industrial & Scientific

Warranty and Support

For specific warranty information regarding your Oakton WD-35805-04 Laboratory pH Electrode, please refer to the documentation included with your purchase or visit the official Oakton Instruments website. For technical support, troubleshooting assistance beyond this manual, or to inquire about replacement parts and accessories, please

contact Oakton Instruments customer service directly.

Oakton Instruments Contact Information: (Please refer to product packaging or official website for current contact details.)