

ELECTRODE INSTRUCTION GUIDE

Code: _____

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MEASUREMENT

- Rinse the electrode tip with distilled water.
- Immerse the tip in the sample and stir gently for approx. 30 seconds.
- For a faster response and to avoid cross contamination of the samples, rinse the electrode tip with a few drops of the solution to be tested, before taking measurements.

STORAGE

- To minimize clogging and ensure a quick response time, the glass bulb and the junction should be kept moist and not allowed to dry out.
- Replace solution in the protective cap with a few drops of **HI70300 Storage Solution** or, in its absence, **Filling Solution (HI7071)** for single junction or **HI7082** for double junction electrodes). If none of the above is available, tap water may also be used for a very short period (couple of days). Follow Preparation above before taking measurements.

Note: NEVER STORE THE ELECTRODE IN DISTILLED WATER.

PERIODIC MAINTENANCE

- Inspect the electrode for any scratches or cracks. If any present, replace the electrode.
- Rinse off any salt deposits with water.

For refillable electrodes:

Drain the reference chamber with a syringe and refill it with fresh electrolyte (**HI7071** for single junction or **HI7082** for double junction electrodes). Allow the electrode to stand upright for 1 hour.

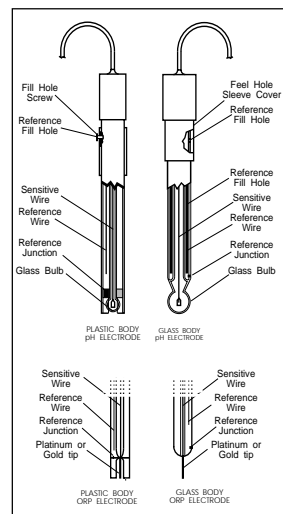
- Follow the Storage Procedure above.

CLEANING PROCEDURE

- General - Soak in Hanna **HI7061 General Cleaning Solution** for approximately 1 hour.
- Removal of films, dirt or deposits on the membrane/junction:
 - Protein Soak in Hanna **HI7073 Protein Cleaning Solution** for 15 minutes.
 - Inorganic Soak in Hanna **HI7074 Inorganic Cleaning Solution** for 15 minutes.
 - Oil and grease Rinse with Hanna **HI7077 Inorganic Cleaning Solution**.

PREPARATION

- Remove the protective cap. DO NOT BE ALARMED IF ANY SALT DEPOSITS ARE PRESENT. This is normal with electrodes and they will disappear when rinsed with water.
- Shake the electrode down as you would do with a clinical thermometer to eliminate any air bubbles inside the glass bulb.
- If the bulb and/or junction are dry, soak the electrode in **HI70300 Storage Solution** for at least one hour.



For refillable electrodes:

- If the fill solution (electrolyte) is less than 1 cm (1/2") below the fill hole, add **HI7082 3,5M KCl Electrolyte Solution** for double junction or **HI7071 3,5M KCl+AgCl Electrolyte Solution** for single junction electrodes.
- For a faster response lower the rubber sleeve (or unscrew the fill hole screw).

For AmpHcl electrodes

- If the wires are extended, they should not touch (short circuited). Maximum recommended length is 15 m (50'), however cables can be extended.
- If the electrode does not respond to pH changes, the battery is run down and the electrode should be replaced.
- With Process Instrumentation connect the blue wire to the glass terminal and the white wire to the reference terminal of the meter.
- With electrodes terminating in spade lugs, make sure the lugs do not touch each other otherwise the battery life will be drastically reduced.

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IMPORTANT: After performing any of the cleaning procedures rinse the electrode thoroughly with distilled water, drain and refill the reference chamber with fresh electrolyte, (not necessary for GEL filled electrodes) and soak the electrode in **HI70300 Storage Solution** for at least 1 hour before taking measurements.

TROUBLE SHOOTING

pH Meter: Follow attentively the meter's operating and calibration procedures from the instruction manual.

Electrode: Evaluate your electrode performance based on the following possibilities.

- **Noise** (Readings fluctuate up and down) could be due to:
 - **Clogged/Dirty Junction:** Refer to Cleaning Procedure above.
 - **Loss of shielding** due to low electrolyte level (in refillable electrodes only): Empty electrolyte with a syringe and refill with fresh **HI7071** for single junction or **HI7082** for double junction electrodes.
- **Dry Membrane/Junction:** Soak in **Storage Solution HI70300** for at least 1 hour.
- **Drifting:** Soak the electrode tip in warm Hanna Solution **HI7082** for one hour then flush tip with distilled water. Refill with fresh **HI7071** for single junction electrodes and **HI7082** for double junction electrodes.
- **Low Slope:** Refer to Cleaning Procedure above.
- **No Slope:** Check electrode for cracks in glass stem or bulb and replace the electrode.
- **Slow Response/Excessive Drift:** Soak the tip in Hanna Solution **HI7061** for 30 minutes, rinse thoroughly in distilled water and then follow Cleaning Procedure above.

Each solution is available in M or L size (230 or 460 mL). Electrolyte Solutions are supplied in kits 4X50 mL.

Check with your nearest Hanna Dealer for more information.

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Stay in touch with the manufacturer...

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PREPARATION

- Remove the protective cap. **DO NOT BE ALARMED IF ANY SALT DEPOSITS ARE PRESENT.** This is normal with electrodes and they will disappear when rinsed with water.
- Shake the electrode down as you would do with a clinical thermometer to eliminate any air bubbles inside the glass bulb.
- If the bulb and/or junction are dry, soak the electrode in **HI70300** Storage Solution for at least one hour.

For refillable electrodes:

- If the fill solution (electrolyte) is less than 1 cm (1/2") below the fill hole, add **HI7082** for double junction or **HI7071** for single junction electrodes.
- For a faster response lower the rubber sleeve (or unscrew the fill hole screw).

For AmpH electrodes

- If the wires are extended, they should not touch (short circuited). Maximum recommended length is 15 m (50'), however cables can be extended.
- If the electrode does not respond to pH changes, the battery is run down and the electrode should be replaced.
- With Process Instrumentation connect the blue wire to the glass terminal and the white wire to the reference terminal of the meter.
- With electrodes terminating in spade lugs, make sure the lugs do not touch each other otherwise the battery life will be drastically reduced.

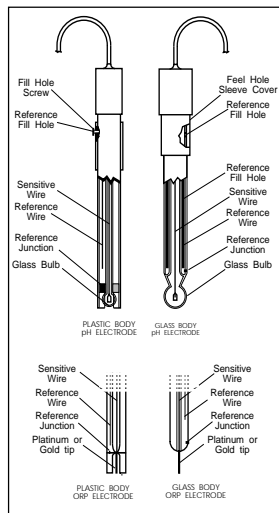
MEASUREMENT

- Rinse the electrode tip with distilled water.
- Immerse the tip in the sample and stir gently for approx. 30 seconds.
- For a faster response and to avoid cross contamination of the samples, rinse the electrode tip with a few drops of the solution to be tested, before taking measurements.

STORAGE

- To minimize clogging and ensure a quick response time, the glass bulb and the junction should be kept moist and not allowed to dry out.
- Replace solution in the protective cap with a few drops of **HI70300** Storage Solution or, in its absence, Filling Solution (**HI7071** for single junction or **HI7082** for double junction electrodes). If none of the above is available, tap water may also be used for a very short period (couple of days). Follow Preparation above before taking measurements.

Note: NEVER STORE THE ELECTRODE IN DISTILLED WATER.



PERIODIC MAINTENANCE

- Inspect the electrode for any scratches or cracks. If any present, replace the electrode.
- Rinse off any salt deposits with water.

For refillable electrodes:

Drain the reference chamber with a syringe and refill it with fresh electrolyte (**HI7071** for single junction or **HI7082** for double junction electrodes). Allow the electrode to stand upright for 1 hour.

- Follow the Storage Procedure above.

CLEANING PROCEDURE

- General - Soak in Hanna Solution **HI7061** for approximately 1 hour.
- Removal of films, dirt or deposits on the membrane/junction:
 - Protein** - Soak in Hanna Solution **HI7073** for 15 minutes.
 - Inorganic** - Soak in Hanna Solution **HI7074** for 15 minutes.
 - Oil and grease** - Rinse with Hanna Solution **HI7077**.

IMPORTANT: After performing any of the cleaning procedures rinse the electrode thoroughly with distilled water, drain and refill the reference chamber with fresh electrolyte, (not necessary for GEL filled electrodes) and soak the electrode in **HI70300** Storage Solution for at least 1 hour before taking measurements.

TROUBLE SHOOTING

pH Meter: Follow attentively the meter's operating and calibration procedures from the instruction manual.

Electrode: Evaluate your electrode performance based on the following possibilities.

- Noise** (Readings fluctuate up and down) could be due to:
 - Clogged/Dirty Junction:** Refer to Cleaning Procedure above.
 - Loss of shielding** due to low electrolyte level (in refillable electrodes only): Empty electrolyte with a syringe and refill with fresh **HI7071** for single junction or **HI7082** for double junction electrodes.
- Dry Membrane/Junction:** Soak in Storage Solution **HI70300** for at least 1 hour.
- Drifting:** Soak the electrode tip in warm Hanna Solution **HI7082** for one hour then flush tip with distilled water. Refill with fresh **HI7071** for single junction electrodes and **HI7082** for double junction electrodes.
- Low Slope:** Refer to Cleaning Procedure above.
- No Slope:** Check electrode for cracks in glass stem or bulb and replace the electrode.
- Slow Response/Excessive Drift:** Soak the tip in Hanna Solution **HI7061** for 30 minutes, rinse thoroughly in distilled water and then follow Cleaning Procedure above.

OPTIONAL ACCESSORIES

HI70300 / HI80300	Storage Solution (230 or 460 mL)
HI7061 / HI8061	General Cleaning Solution (230 or 460 mL)
HI7073 / HI8073	Protein Cleaning Solution (230 or 460 mL)
HI7074 / HI8074	Inorganic Cleaning Solution (230 or 460 mL)
HI7077 / HI8077	Oil and Fat Cleaning Solution (230 or 460 mL)
HI7071 / HI8071	3,5M KCl + AgCl Electrolyte Solution, 4X50 mL
HI7072 / HI8072	1M KNO ₃ Electrolyte Solution, 4X50 mL
HI7082 / HI8082	3,5M KCl Electrolyte Solution, 4X50 mL
HI8093	1M KCl + AgCl Electrolyte Solution, 4X50 mL

Check with your nearest Hanna Dealer for more information.