



D-phi Series™ Reference Refilling Kit Instructions

The reference solution becomes diluted over time by the process solution, resulting in more drift and more frequent calibration to maintain accuracy. To avoid drops in performance, we recommend replacing the reference solution every 1-2 months. Ideal replacement frequency depends on the application and must be determined empirically through calibration checks. Applications with high flow rate, temperature, pressure, alkalinity, or acidity dilute the reference faster and may require more frequent replacement.

Each Kit comes with the following:

- Reference Refill Bottle (x3)
 - Each bottle contains enough reference electrolyte powder for four (4) refills.
 - The electrolyte is non-toxic in both dry and aqueous form, although may cause irritation if it enters eyes or an open wound. Do not ingest.
- Empty Bottle
 - Fill with water using funnel then squirt into Reference Refill Bottle for more control.
- Funnel
 - Used to easily fill Reference Refill Bottle or Empty Bottle with water.

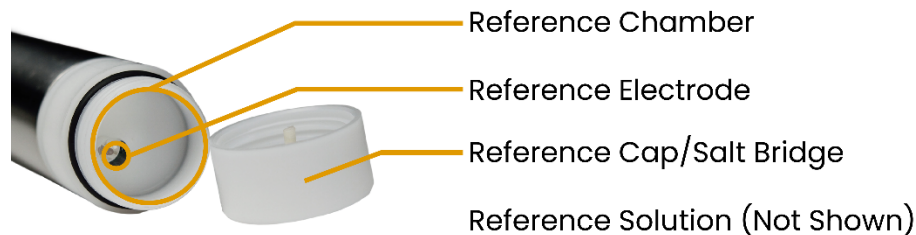
Includes materials to fill the reference of D-phi Series™ sensor twelve (12) times.

Supplies Needed

- D-phi Series Sensor
- Reference Refill Kit
- RO/DI water

In the following instructions, "water" refers to RO/DI/distilled water, although other relatively clean water sources may be used when RO/DI/distilled water is not available.

Please skip to Step 5 if a Reference Refill Bottle has already been filled with water.



Instructions

[Companion Instruction Video](#)

1. Open the Reference Refill Kit (included with sensor and available for purchase) and pull out a Reference Refill Bottle along with the funnel.
2. Unscrew the cap of the Reference Refill Bottle.
3. Place the provided funnel into the top of the Bottle and fill the Bottle to the top of the white label with RO/DI water. (Also look at alternate method below)
 - a. The funnel is narrow so surface tension can block the water from going through. Tilt the funnel to one side and pour slowly to avoid this problem.
 - b. Relatively clean tap water also works but may lead to lower performance.
 - c. Alternately, you may fill the empty unlabeled bottle in the Reference Refill Kit with RO/DI water then squirt that into a Reference Refill Bottle. This may provide more control over how much liquid is added.
4. Screw the cap back on and put the rubber stopper over the needle nose then shake the Reference Refill Bottle 30–60s until there is little or no remaining powder that settles on the bottle of the Bottle.



- a. The bottle will heat up slightly due to an exothermic reaction.
5. Unscrew sensor Reference Cap and pour out Reference Solution.
 - a. The reference solution does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (CFR 1910.1200). Please see [page 6 of the SDS](#) for disposal information.
6. Rinse Reference Chamber out with water. If the interior is extremely dirty, you may use soap, water, and a soft brush to scrub away debris. Do the same with the Reference Cap.
 - a. If the sensor has been in storage for more than a few days, then we recommend scrubbing both Electrodes with soap, water, and a soft brush, then rinse with water. This revitalizes the glass to improve response time and accuracy.
7. Remove the rubber stopper from the Reference Refill Bottle.
8. Hold the sensor upright then fill the Reference Well to the top with the newly-made Reference Solution in the Reference Refill Bottle.
9. Screw the Reference Cap onto the upright Sensor.
 - a. Some of the Reference Solution will be pushed out of the pointed junction in the Reference Cap if the sensor was filled completely.
10. Recalibrate the sensor before use.
11. The Reference Refill Bottle has up to three (3) remaining refills in it. Store the Reference Refill Bottle in a refrigerator to prolong the life of the remaining solution.