

# Thermo Scientific Orion

## High Performance Ammonia ISE

### Tips For Optimizing Ammonia Measurements

There are essential practices that need to be applied when using the high performance ammonia electrode, Cat. No. 9512HPBNWP or 9512HP01. This electrode is different than the previous ammonia electrodes, including Cat. No. 9512BNWP, 9512BN and 951201, in some key aspects. Please read and perform the following tips to eliminate many potential problems with the high performance ammonia electrode.

1. There is a new filling solution – only use the high performance ammonia electrode filling solution, Cat. No. 951209.
2. There are new membranes – only use the high performance ammonia electrode loose membranes, Cat. No. 951214, or pre-assembled body and membrane, Cat. No. 951215.
3. There is a new ISA for low level ammonia testing – use the alkaline reagent, Cat. No. 951011, for samples that have ammonia concentrations of 10 to 20 ppm or lower. Use the alkaline reagent to standard or sample in ratio of 1:100.
4. Soak the inner body of a new or dry electrode in the high performance ammonia electrode filling solution, Cat. No. 951209. The inner body must be immersed at least 5 cm in the solution with the solution covering the reference wire. See the figure on the right.
5. Do not stretch the loose membranes, only place the membrane firmly and smoothly over the body and make sure that there are no wrinkles. Detailed electrode assembly instructions are in the high performance ammonia electrode user guide.
6. Look through the outer body of the electrode to check for air bubbles inside the electrode. Gently tap the electrode if air bubbles are on the wire in the inner body of the electrode.



7. If calibrating or measuring ammonia concentrations of 10 to 20 ppm or lower, soak the assembled electrode for 15 minutes in a 1 ppm ammonia standard with alkaline reagent before using the electrode. To prepare the solution, add 1 mL of the alkaline reagent, Cat. No. 951011, to 100 mL of a 1 ppm ammonia standard. After soaking the electrode for 15 minutes, the drift should be less than 0.5 mV per minute.
8. Between samples, store the assembled electrodes in the 1 ppm ammonia standard with alkaline reagent. See step 7 for details on preparing the solution.
9. If the electrode readings are drifting, soak the electrode in the 1 ppm ammonia standard with alkaline reagent for 15 minutes. If the soaking does not work, gently pull up on the cable to refresh the filling solution around the inner body. The electrode must be recalibrated if the cable is pulled.
10. Do not rinse the electrode with a squirt bottle. Between measurements, rinse the electrode by dipping it in deionized water. For the best accuracy and precision, rinse the electrode a second time by dipping it in another beaker of deionized water.
11. For overnight storage, soak the fully assembled electrode in the high performance ammonia electrode filling solution, Cat. No. 951209.
12. If the slope is low after calibrating, perform the **Checking Electrode Operation (Slope)** procedure in the high performance ammonia electrode user guide. If the electrode passes this procedure, there is most likely is something wrong with the calibration standards. Prepare new standards and recalibrate.
13. If the slope is still low after preparing new standards, perform the **Checking Inner Body** procedure in **Troubleshooting** section of the electrode user guide. If the electrode passes this procedure, there is most likely is something wrong with the assembly of the electrode. Refer to the **Electrode Setup** section in the electrode user guide.

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257312-001 Rev. A 07-08