



How to use...

Pocket TDS Meter

INSTRUCTION SHEET For Waterproof Oakton TDSTestr Low or
Oakton TDSTestr 1

Testing Location - Field

This test using the TDS instrument should be performed in the field.

Materials

Oakton TDSTestr Low (cylindrical, light brown w/ yellow trim) or TDSTestr1 (light brown w/ gray trim)
Three or four 1.4 volt (or 1.5 volt) batteries (probably already in the meter)
Wide mouthed sample bottle
TDS 210 calibration solution (clear)
Calibration screw driver (for TDSTestr1)

Testing Background

If properly taken care of, the TDS meters we have provided can quickly give accurate numerical results. Some schools are using the new Oakton TDSTestr Low, while others have the older TDSTestr 1 from Oakton (light brown in color with gray trim).

Calibration Instructions

The meters should be calibrated before each use.

Oakton TDSTestr Low (light brown, yellow trim)



1. Remove the protective cap from the bottom of the meter. Rinse the metal electrodes at the bottom of the meter with distilled water. Immerse the bottom of the meter .5 to 1 inches (not any deeper!) in the TDS 210 calibration, buffer solution (clear).
2. Press the "on" button. Stir gently and wait for the displayed value to stabilize on one reading. If the stabilized reading is 210, go to step 4. If the reading is not 210, proceed to the next step.
3. Unscrew the top of the meter (battery compartment lid). *While still in the TDS 210 solution*, there are two small white buttons that you *gently* press to adjust the reading to 210. One button increases the value, the other decreases. After 3 seconds of not pressing a button the display will flash 3 times, and then show "ENT". When this occurs, the meter accepts the displayed value as the calibration value (it should be 210). You DO NOT and should not hit the "hold" button at all.

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Oakton TDSTestr 1 (light brown, gray trim)



1. Remove the protective cap from the bottom of the meter. Rinse the metal electrodes at the bottom of the meter with distilled water. Immerse the bottom of the meter .5 to 1 inches (not any deeper!) in the TDS 210 calibration, buffer solution (clear).
2. Press the "on" button. Stir gently and wait for the displayed value to stabilize on one reading. If the stabilized reading is 210, go to step 4. If the reading is not 210, proceed to the next step.
3. *While still in the TDS 210 solution*, take the calibration screwdriver (provided with kit) and turn the smallest screw on the back of the meter, *next* to the clip, not on the clip. Turn the screw until the digital reading shows 210 (*Be careful it is fragile*).
4. Before removing the TDS meter from the calibration solution, turn it off. Rinse off with distilled water and proceed to the testing instructions.

5. Turn the meter off before removing it from the solution. Rinse it with distilled water and proceed to testing instructions.

Test Instructions

Oakton TDSTestr Low (light brown, yellow trim)

1. Pour water sample into a small, wide mouth container that the meter can fit into. You only need 1 inch of sample water.
2. While the meter is OFF, remove the protective cap from the bottom. Immerse the bottom of the meter .5 to 1 inches in water sample, just enough that the metal electrodes at the bottom are submerged.
3. Turn the meter ON. Let the display number stabilize. The stabilized display is the TDS value for the water sample. Record this value.
4. Turn the meter OFF and rinse the electrodes. Repeat steps 1 through 3 for Sample B.
5. When finished, make sure the meter is turned OFF. Rinse the metal electrodes on the bottom with distilled water and replace the cap.

Oakton TDSTestr 1 (light brown, gray trim)

1. Pour sample water into a small, wide mouth container that the meter can fit into. You only need 1 inch of sample water.
2. While the meter is OFF, remove the protective cap from the bottom. Immerse the bottom of the meter .5 to 1 inches in water sample, just enough that the metal electrodes at the bottom are submerged. Do not let water go above the rubber brown/gray band that wraps around the bottom of the meter.
3. Turn the meter ON. Let the display number stabilize. The stabilized reading is the TDS value for the water sample. Record this value.
4. Turn the meter OFF and rinse the electrodes. Repeat steps 1 through 3 for Sample B.
5. When finished, make sure the meter is turned off. Rinse the metal electrodes on the bottom with distilled water and replace the cap.

Disposal and Clean Up

Calibration solution should be replaced after 4 sampling events/dates. Calibration solution can be flushed down the sink with plenty of water. Properly dispose of expired batteries; you can give them to Creek Connections.

Safety Precautions

Normal safety precautions should be taken when handling the water sample, buffer solution and the equipment to avoid breakage.

Trouble Shooting Tips

METER DOES NOT TURN ON

1. Check batteries. Make sure they are installed properly (see Changing Batteries instructions below).
2. If still not working, install new batteries (see Changing Batteries instructions below).
3. If the meter does not work after replacing batteries, recheck the direction of the batteries in the meter. Reversed batteries in meter will result in failure of the meter to work. If the new batteries are in the correct position, check to see if the red or black wires connecting to the battery compartment are broken. If they are broken, *you need to replace your meter.*
4. If the batteries are new and the meter is still not working, the battery contacts may be corroded or dirty. Check the metal contacts that the batteries fit between and look for rust or other oxidation. Clean them with isopropyl alcohol. You may need to carefully scrap away rust or dirt with a flathead screwdriver or pair of scissors. Replace batteries and try again.
5. If the batteries are new and the battery contacts are clean and the meter is still not working, there may be moisture inside the meter (applies to TDS Testr1 meter only). This occurs when students immerse the meter above the rubber color band line or if water has entered the battery compartment. A teacher should carefully unscrew the back of the meter (the Phillips head screws) and see if there is any condensation inside and to leave

it open to dry out. Flip open the battery compartment, remove the batteries, and dry this compartment out as well.

6. If the meter still does not turn on, *you need to replace your meter.*

THE NUMBERS ARE FAINT OR DISAPPEAR

1. If the readout numbers are faint or disappear while meter is on and while it is IN a solution or if the TDS Testr LOW meter's low battery indicator symbol appears, then the batteries need to be replaced (see Changing Batteries Section below).

METER WILL NOT CALIBRATE

1. Did you take the cap off the meter?
2. If you have a TDS Testr 1 meter, are you turning the correct calibration screw on the back of the meter? It is a small screw (also called the trimpot) through a small opening in the meter's plastic back cover. It is NOT one of the Phillips head screws.
3. For both types of meters, if the digital reading does not stabilize when calibrating... rinse the metal electrodes with distilled water before calibrating. Make sure the meter is in new TDS 210 calibration solution (this should be replaced after a 3 or 4 creek trips). Make sure the meter is actually IN the calibration solution when turning the correct calibration screw on the back; numbers will go crazy if the meter is on while in the air and not in a solution. Before removing from any solution or sample, shut the meter off. After addressing these, if the reading still does not stabilize at all, the batteries may need to be replaced (see Battery Changing Section below).
4. If you have a TDS Testr1 meter and the numbers do not change when turning the correct calibration screw on the back of the meter, then the screw may be stripped. This occurs if students are not gentle inserting and turning the calibration screw. If the screw is stripped, *you need to replace the meter.*
5. If you have a TDS Testr1 meter and the calibration screw is not visible through the little hole on the back of the meter, it may have been rammed/shifted to the side. A teacher should carefully unscrew the back of the meter (the Phillips head screws) and lightly nudge the calibration screw back into alignment with the hole opening.

NUMBERS ON METER WILL NOT STABILIZE IN A SAMPLE

1. Did you take the cap off the meter?
2. Just wait. It takes some time for the meter to stabilize. After a few minutes, if the readout number does not stabilize (it is "jumping around" still), shut off the meter, remove from the sample, and then rinse the meter's metal electrodes thoroughly with distilled water and try again.
3. If readout still does not stabilize, the batteries may need to be replaced (see Changing Batteries Section below).
6. If the batteries are new, installed correctly, the contacts and wiring are in good condition, and the readout still does not stabilize, then the electrodes may need cleaned more thoroughly. Long term care of the meter states that you should soak the stainless steel electrodes periodically in isopropyl alcohol for 10-15 minutes. This will help remove any buildup on the electrodes. Do this then try your sample again later.
7. If the batteries are new, and the meter's readout still does not stabilize, and the electrodes are clean, then there may be moisture inside the meter. This occurs when students immerse the meter above the rubber color band line. A teacher should carefully unscrew the back of the meter (the Phillips head screws) and see if there is any condensation inside and to leave it open to dry out. You may also flip open the battery compartment, remove the batteries, and dry this compartment out as well.

METER STILL NOT WORKING

If you have done all of the above and the meter is still malfunctioning, contact Creek Connections for a replacement meter.

CHANGING BATTERIES

1. For the TDS meters, open the top battery compartment lid carefully on top of the meter. Remove old batteries (give them to your teacher for proper disposal).
2. Replace the batteries with new ones noting polarity (+ and -) inside the meter and on the batteries. The red wire is the positive (+) side; black wire, negative (-). Make sure the small black cloth wraps along the bottom

of the batteries before inserting them. It is a tug cloth to help pop out the batteries. Make sure the tug cloth is not placed in between batteries or covers up the metal contacts.

What batteries to use: They are hearing aid batteries often found in pharmacies. Shop for 1.4volt Eveready EP675E or EP675HP, Duracell DA675, or most any other 1.4 volt (or 1.5 volt) brand with the number 675 in its name. In the TDSTestr LOW, Eveready A76BP are supplied in meter, but the above mentioned batteries should also work.

LONG TERM CARE TIPS

1. Make sure the meter is turned off after each use. DO NOT have meter turned on unless it is in a solution, having it on when the electrodes are in the air is bad.
2. Rinse the electrodes thoroughly with distilled water after each use. It is okay to store the meter with some moisture in the electrode cap.
3. To improve meter performance and accuracy, periodically rinse/soak the metal electrodes in isopropyl alcohol for 10-15 minutes to help clean them.
4. Do not expose meters to excess moisture. Store in a dry place. Do not drop meter in the creek or leave out in rain.
5. Make sure students CAREFULLY calibrate the meter. For the TDSTestr1 meter, if the calibration screw is not turned gently, it will either get stripped or break. Do not jam the calibration screwdriver into the back of the meter – be gentle.

This instructions sheet was adapted from the instructions for the Oakton TDS Testr1 and the Oakton TDS Testr Low Waterproof and from Creek Connections staff observations.