



NECi: The Nitrate Elimination Company, Inc.

334 Hecla Street, Lake Linden, MI 49945 USA

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NECi Cat. AW-NTK-100 Series

Water Nitrate Test Kit Instructions

Tips & Notes

Store in a cool place (below 72°F/22°C), away from direct sunlight. Refrigerate if possible. The kit can withstand hot summer temperatures for 5 days. *Do not open the sealed packets or mix tube contents until ready to use.*

Water samples are best tested soon after collection. They may be refrigerated for up to one month if necessary. For best results, rinse your sample tubes with your sample water and avoid sediment and solids. Turbid samples are okay.

Don't forget to record where you got your samples. Label your samples & tubes!

Kit Contents (per 4 samples):

- 4 clear tubes with white screw caps
- 4 clear *twist off* squeeze bulbs (buffer)
- 1 clear *snip off* squeeze bulb containing nitrate standard
- 5 snap cap tubes in sealed foil pouch (this is the enzyme)
- 4 plastic droppers
- 5 foil-sealed square tubes of color reagent powder, plus caps
- 1 cardboard test tube holder

You'll need:

- Marker for labeling tubes
- Scissors to *snip off* end of squeeze bulb with standard
- Pen for recording on data sheet!

Introduction: This kit contains everything you need to test water samples. We also provide *snip off* squeeze bulbs with nitrate standard at 5 ppm nitrate-N to help evaluate your results, and so you know the kit is working. This format can be used to run multiples of 4 samples and 1 standard at a time. Collect your water samples, and then run the tests and at least one standard all at once. Repeat each step for each set of samples you test.

What to Expect: The nitrate value you get will tell you the nitrate content of your water sample. We can't guarantee the accuracy you would expect from a water testing lab. But you *will* get a number you can use for making decisions about use and further testing.

Note: The US EPA sets the maximum contaminate limit for drinking water at 10 ppm nitrate-N.

Step 1: Get your samples. Collect approximately 5 ml of water in the sample tubes (white cap). Recap the tube. Be sure to **label the tube** and record the sample location on the data sheet. Repeat for each sample.

Step 2: Prepare your Snap cap tubes.

Remove the 5 snap cap tubes from the foil pouch. Place them in the cardboard test tube holder. Tap tubes to settle contents and keep **upright** when open so as not to lose contents.



Set the tube with the **blue dot** apart from the others. *Snip off* the end of the standard squeeze bulb (above, left) and empty entire contents into the tube with the **blue dot**: this is the **nitrate standard**.

Empty entire contents of one *twist off* squeeze bulb (above, right) into each of the other 4 snap cap tubes. These will be your water sample results. Label the tubes now! Cap all the tubes and shake gently.

Step 3: Add samples from Step 1 to the snap cap tubes in the holder.

Use a dropper to add **one drop** (50 µl) of your sample to one of the **snap cap tubes**. Make sure not to touch the sides or surface of the liquid with the dropper. **Repeat** for all 4 samples, using a different dropper for each sample. Recap the snap cap tubes and shake gently. Let all the **snap cap tubes** set for **at least 10 minutes**, shaking gently every few minutes





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Notes:

Be sure you have labeled the snap cap tubes in Step 2 to match the water sample you are adding in Step 3.

Add only one drop!

You can let Step 3 go as long as you want to, but be sure to **wait at least 10 minutes** before going on to Step 4. Don't forget to gently shake tubes several times.

Be sure to label the square tubes in Step 4 to match the label from the tubes in Step 3.

The Color is stable for a few days. You can keep the tubes to look at later.

This kit has been designed with nonhazardous reagents. It is safe to dispose of the liquids down the drain or on the ground. Spills can be wiped up with water and will not harm the skin. As with any household product, we do recommend you keep our Nitrate Test Kits out of the reach of children.

Step 4: Color development After at least **10 minutes**, pour the contents of the snap cap tube with the **blue dot** into the **square foil covered tube** with a **blue dot** (the nitrate **standard**). Label one of the other square foil covered tubes for each of your water samples. Pour the contents of each of the other **4** tubes into the appropriately labeled square tube. Try to get most of the liquid transferred. Firmly seal with a square cap and shake rapidly. Let these tubes develop for about 5 minutes, shaking them several times to try to dissolve most of the powder.

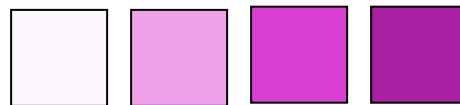


Evaluating your results:

The **nitrate standard** should have a clear pink color. Your sample results may be slightly cloudy, but you will still be able to see pink color if enough nitrate is present. The nitrate standard is set at 5 parts per million nitrate-N (5 ppm nitrate-N).

Compare your results to the standard by holding your samples and the standard against a white background. Determine whether your samples are less than, nearly the same, or greater than the nitrate standard color.

Here is a color chart for comparison.



0 ppm	2 ppm	5 ppm	10 ppm	Nitrate-N (NO ₃ -N, nitrate-nitrogen)
0 ppm	9 ppm	22 ppm	45 ppm	Nitrate
0 μM	145μM	350μM	725μM	molar concentration of Nitrate (NO ₃)

Nitrate is reported in different units depending on where you live and your profession. The US EPA uses nitrate-N. Most environmental regulations use this unit. California and Europe use Nitrate values. Chemists use molar concentrations. The US EPA has set 10 ppm as the maximum value allowed for clean, safe drinking water and groundwater.







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DATA SHEET FOR AG WATER, SOIL & PLANT NTK'S

When you are finished with the test, the nitrate standard should have clear pink color. Your sample results may be slightly cloudy, but you will still be able to see pink color if enough nitrate is present.

Compare your results to the standard by holding your samples and standard against a white background for best results. You can use the back of these instructions. Determine whether your samples are less than, nearly the same, or greater than the nitrate standard color.

Use this Color Chart here to help with your comparisons.
 Note that the colors are the same for all the kits, but the nitrate concentrations are different!

				
Scale for Water Test Kits:				
0 ppm	2.0 ppm	5.0 ppm	10.0 ppm	Nitrate-N (NO ₃ N, nitrate-nitrogen)
0 ppm	9.0 ppm	22 ppm	44 ppm	Nitrate (NO ₃)
0 μM	145 μM	350 μM	725 μM	Molar concentration of nitrate
Scale for Soil Test Kits:				
0	10	25	50	Nitrate-N (ppm)
0	60	150	300	Nitrate (ppm)
0	90	225	450	N (pounds per acre)
Scale for Plant Test Kits:				
0 ppm	200 ppm	500 ppm	1000 ppm	Nitrate content as ppm nitrate-N

<u>Sample Number</u>	<u>Sample Description</u>	<u>ppm Nitrate</u>
	Example: northwest corner, collected 8/25/03	Close to, but less than 40ppm
1		
2		
3		
4		

Problems or Questions??? Call NECi – 1-888-NITRATE

Thank You for using NECi Ag-NTK!