

HYDROPONICS KIT
Code 3561-01



QUANTITY	CONTENTS	CODE
120 mL	*Mixed Acid Reagent	*V-6278-J
5 g	*Nitrate Reducing Reagent	*V-6279-C
60 mL	*VM Phosphate Reagent	*4410-H
30 mL	*Wide Range Indicator	*2218-G
30 mL	*Sodium Hydroxide, 1.0N	*4004WT-G
60 mL	*Hydrochloric Acid, 1.0N	*6130WT-H
15 mL	*Sodium Hydroxide Reagent w/Metal Inhibitors	*4259-E
5 g	*Tetraphenylboron Powder	*6364-C
6	Test Tubes, plastic, w/caps	0106
1	Double Tube, potassium, w/cap	0780
1	Spoon, 0.1 g, plastic	0699
1	Spoon, 0.05 g, plastic	0696
1	Pipet, 1.0 mL	0354
1	Test Tube Brush	0514
1	Demineralizer Bottle	1152
1	Octa-Slide 2 Viewer	1101
1	pH Wide Range Octa-Slide 2 Bar, 4.5-8.0	3424-01
1	Phosphorus Octa-Slide 2 Bar, 3.0-30 ppm	5305-01
1	Nitrate Octa-Slide 2 Bar, 0.25-10.0 ppm	3109-01
1	Plant Nutrition Studies	1596
1	Graduated Cylinder, 25 mL	0417
1	Dispenser Cap	0692



*Reagent is a potential health hazard. **READ SDS:** lamotte.com
Emergency information:
Chem-Tel USA 1-800-255-3924
Int'l, call collect, 813-248-0585



To order individual reagents or test kit components, use the specified code number.

Warning! This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully.
Not to be used by children except under adult supervision.



USE OF THE
OCTA-SLIDE 2 VIEWER

Read Demineralizer Bottle instruction manual before proceeding.
The Demineralizer Bottle [1152] will be the source of all deionized water used in these tests.

pH

A pH value of 7.0 indicates a neutral solution. Values above 7.0 indicate alkaline solutions, while values below pH 7.0 indicate acid solutions.

1. Insert pH Wide Range Octa-Slide 2 Bar [3424-01] into Octa-Slide 2 Viewer [1101].
2. Fill a test tube [0106] to 5.0 mL line with sample solution.
3. Add 4 drops of *Wide Range Indicator [2218]. Cap and mix.
4. Insert test tube into the Octa-Slide 2 Viewer. Hold the Viewer so that non-direct light enters through the back. Match sample color to a color standard.

NOTE: If the pH of the sample is not between 6.2 and 6.8, it must be adjusted to 6.5 before proceeding with the Nitrate, Phosphorus, and Potassium tests. If the pH is below 6.2 add *Sodium Hydroxide, 1.0N [4004], one drop at a time, periodically checking the pH until it is brought into the range of 6.2 to 6.8. If the pH is above 6.8, add *Hydrochloric Acid, 1.0N [6130] in the same manner.

NITRATE NITROGEN

The range of the color standards in the Nitrate Nitrogen Color Bar is from 0.25 to 10 ppm Nitrate Nitrogen. If the nutrient solution is above this range, it should be diluted to bring the readings within the range. The dilution will depend upon the amount of nitrate in the solution. A 1 to 20 dilution is suggested.

NOTE: Place dispenser cap [0692] on *Mixed Acid Reagent [V-6278]. Save this cap for refill reagents.

1. Insert Nitrate Octa-Slide 2 Bar [3109-01] into Octa-Slide 2 Viewer [1101].
2. Fill a test tube [0106] to the 2.5 mL line with nutrient solution.
3. Add *Mixed Acid Reagent [V-6278] to the test tube to fill to the 5.0 mL line. Cap and mix. Wait two minutes.
4. Use the 0.1 g spoon [0699] to add one level measure [avoid any excess] of *Nitrate Reducing Reagent [V-6279]. Cap and invert the tube 50-60 times in one minute. Wait 10 minutes.
5. Insert the tube into the Octa-Slide 2 Viewer. Hold the Viewer so that non-direct light enters through the back. Match sample color to a color standard.
If the original sample was diluted, multiply the reading by 20 to obtain the final result in ppm Nitrate Nitrogen.

PHOSPHORUS

The range of the color standards in the phosphorus comparator is from 3 to 30 ppm Phosphorus. Most nutrient solutions will have to be diluted to bring the reading within this range. A 1 to 2 dilution is suggested and involves diluting 5 mL of solution to 10 mL with deionized water.

1. Insert Phosphorous Octa-Slide 2 Bar [5305-01] into Octa-Slide 2 Viewer [1101].
2. Fill a test tube [0106] to the 5.0 mL line with nutrient sample.
3. Use the 1.0 mL pipet [0354] to add 1.0 mL of *VM Phosphate Reagent [4410]. Cap and mix. Wait 5 minutes.
4. Insert test tube into the Octa-Slide 2 Viewer. Hold the Viewer so that non-direct light enters through the back. Match sample color to a color standard.
If the original sample was diluted, multiply the reading by 2 to obtain the final result in ppm Phosphorus.

POTASSIUM

A turbidimetric method is used for the determination of potassium in the nutrient solution. It is suggested that the nutrient solution be diluted to a 1 to 5 ratio with deionized water to bring the sample concentration within the range of the test. A 1 to 5 dilution involves diluting 2 mL of the sample to 10 mL with deionized water.

1. Fill the round tube to the first line [8 mL] with nutrient sample.
2. Fill to the second line [16 mL total] with deionized water.
3. Add 2 drops of *Sodium Hydroxide Reagent [4259]. Cap and mix.
4. Use the 0.5 g spoon [0696] to add one level measure of Tetraphenylboron Powder [6364]. Cap and shake vigorously until all the powder has dissolved. A white precipitate will form immediately. Wait 5 minutes.
5. Shake the tube again and remove solid cap. Insert the calibrated square tube into the outer tube with reacted sample. Hold the tube assembly and view the black dot in the square tube from above.
6. While holding assembly, slowly lower the square tube into solution until the black dot just barely disappears. The square tube will fill. Secure the tube assembly in place and raise to eye level to read result on square tube at the water level in the outer tube. Calibrations represent parts per million potassium. If the original sample has been diluted 1 to 5, the reading should be multiplied by 5 to obtain the potassium content of the original sample.

NOTE: Brush tubes thoroughly after each use.

DILUTION PROCEDURE

If the test result in the nitrate, phosphate or potassium test is greater than the highest value on the Octa-Slide 2 Bar it is necessary to perform a dilution. Use the 1.0 mL pipet [0354] and the 25 mL graduated cylinder [0417] as follows:

AMOUNT OF SAMPLE	DILUTE TO	MULTIPLY RESULT BY
1.0 mL	5.0 mL	5
1.0 mL	10.0 mL	10
1.0 mL	20.0 mL	20
1.0 mL	25.0 mL	25

Use deionized water from the Demineralizer Bottle for all dilutions.

