



AMMONIA NITROGEN & NITRITE NITROGEN SOIL TESTS

MODULE B

MODEL AM-32 • CODE 5938-01

QUANTITY	CONTENTS	CODE
30 mL	*Ammonia Nitrogen Test Solution	*5103WT-G
30 mL	*Nitrite-Nitrogen Reagent #1	*5151WT-G
30 mL	*Nitrite-Nitrogen Reagent #2	*5152WT-G
30 mL	*Nitrite-Nitrogen Reagent #3	*5153WT-G
2	Stirring Rods, plastic	0519
2	Spot Plates, double, plastic	0159
1	Spoon, 0.5 g	0698
1	Test Tube, plastic, filtrate	0749
1	Funnel, plastic	0459
1	Filter Paper, 50/pk	0465-H
1	Color Chart, Ammonia Nitrogen in Soil	1302
1	Color Chart, Nitrite Nitrogen in Soil	1310
2	Test Tubes, 1-8 mL, plastic, w/cap	0755
1	Pipet, transfer, plastic	0364

***WARNING:** Reagents marked with a * are considered to be potential health hazards. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or www.lamotte.com. To obtain a printed copy, contact LaMotte by email, phone or fax.

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

EXTRACTION PROCEDURE

1. Fill a test tube (0755) to line 7 with *Universal Extracting Solution (5173).
2. Use the 0.5 g spoon (0698) to add four level measures of soil to the test tube. Cap and shake for one minute.

NOTE: When adding samples with high concentrations of carbonates to *Universal Extracting Solution (5173), swirl tube to mix for 30 seconds before capping to allow gases to escape.

3. Fold a piece of filter paper (0465) in half, then in half again. Press corners together to form a cone. Place in funnel (0459). Pour extract solution into funnel, collecting extract. This clear extract is used for the test.

AMMONIA NITROGEN TEST

1. Use a transfer pipet (0364) to transfer four drops of the soil extract to a large depression on a spot plate (0159).
2. Add two drops of *Ammonia Nitrogen Test Solution (5103WT). Stir with a stirring rod (0519). Wait one minute.
3. Match color to a color standard on the Ammonia Nitrogen Color Chart (1302). Record as ppm Ammonia Nitrogen.

INTERPRETATION OF AMMONIA NITROGEN TEST

A low test for ammonia in agricultural soils is to be expected in a fertile soil, unless there has been a recent application of nitrogenous fertilizer in forms other than the nitrate. The rapidity of disappearance of ammonia from the soil in such cases is an indication of the desired transformation of ammonia into the more available nitrate compounds.

In forest soils, especially in the humus layers, ammonia is the most abundant available form of nitrogen, and these organic horizons may produce very high ammonia nitrogen concentrations if there is a satisfactory rate of nitrogen transformation.

NITRITE NITROGEN TEST

1. Use a transfer pipet (0364) to transfer five drops of the soil extract to a large depression on a spot plate (0159).
2. Add 2 drops of *Nitrite-Nitrogen Reagent #1 (5151WT).
3. Add 2 drops of *Nitrite-Nitrogen Reagent #2 (5152WT). Stir with a stirring rod (0519).
4. Add 10 drops of *Nitrite-Nitrogen Reagent #3 (5153WT). Stir with a stirring rod (0519). Wait one minute.
5. Match sample color to a color standard on the Nitrite Nitrogen Color Chart (1310). Record as ppm nitrite nitrogen.

NOTE: If the deepest shade of orange represented on the chart is produced, the test should be repeated on a diluted sample. Transfer one drop of the soil extract to the spot plate (0159), and dilute it with four drops of *Universal Extracting Solution (5173) and repeat steps 2-5 of the test. Multiply reading by 5. Record as ppm Nitrite Nitrogen.

INTERPRETATION OF NITRITE NITROGEN TEST

In the production of nitrates in soils, nitrites are formed as an intermediate step. In soils that are well drained and aerated, they are found in very small amounts. An excess of nitrites, which is toxic to plants, may be found in poorly aerated soils and in soils where there is a very large amount of nitrates, part of the nitrate concentration may decompose to give nitrites. A high test for nitrite nitrogen, therefore, indicates a soil condition which may be unfavorable to the formation of nitrates and toxic to plants.

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