1200 COLORIMETER

NITRATE NITROGEN

MODEL 1200-NA CODE 3677-01

QUANTITY	CONTENTS	CODE
2 x 120 mL	*Mixed Acid Reagent	*V-6278-J
10 g	*Nitrate Reducing Reagent	*V-6279-D
1	Spoon, 0.1 g, plastic	0699
1	Graduated Cylinder	0416
1	Colorimeter Tubes, w/caps	0290-6
1	Water Sample Collecting Bottle	0688
1	1200 Colorimeter for Nitrate Nitrogen	26734

***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 components, use the specified code number.

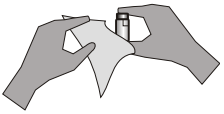
NITRATE - NITROGEN INTRODUCTION

Nitrogen is essential for plant growth, but the presence of excessive amounts in water supplies presents a major pollution problem. Nitrogen compounds may enter water as nitrates or be converted to nitrates from agricultural fertilizers, sewage, industrial and packing house wastes, drainage from livestock feeding areas, farm manures and legumes. Nitrates in large amounts can cause “blue babies” (methemoglobinemia) in infants less than six months of age. Nitrate concentration is an important factor to be considered in livestock products, where, in addition to causing methemoglobinemia, it is responsible for many other problems. Nitrates in conjunction with phosphate stimulate the growth of algae with all of the related difficulties associated with excessive algae growth.

U.S. Public Health Service Drinking Water Standards state that 10 ppm nitrate nitrogen should not be exceeded. To the sanitary and industrial engineer, concentrations of less than 1 ppm are acceptable.

NITRATE-NITROGEN TEST PROCEDURE - CADMIUM REDUCTION METHOD

Read the 1200 Colorimeter Manual before proceeding. Carefully wipe tubes dry before inserting into the colorimeter chamber.

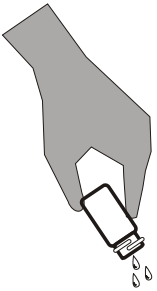


NITRATE - NITROGEN

1.

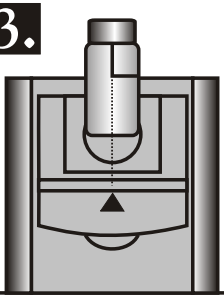
Fill the Water Sample Collecting Bottle (0688) with sample water. This will be used to dispense sample water for the tests.

2.



Rinse and fill a colorimeter tube (0290) to the 10 mL line with sample water. Cap and wipe dry.

3.

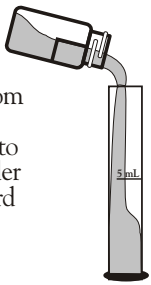


Insert the tube into the chamber, being sure to align the index line with the arrow on the meter. Close the lid. This tube is the blank or zero.

4.

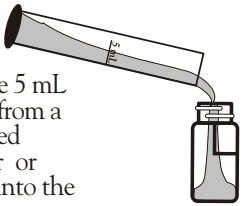
Push the **READ** button to turn the meter on. Press the **ZERO** button and hold it for 2 seconds until bLA is displayed. Release the button to take a zero reading (0.00 ppm).

5.



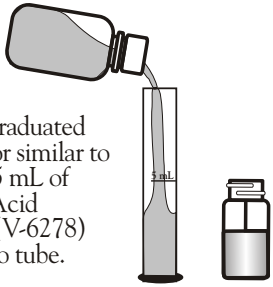
Remove tube from colorimeter and pour off 5 mL into graduated cylinder or similar. Discard the remaining sample.

6.



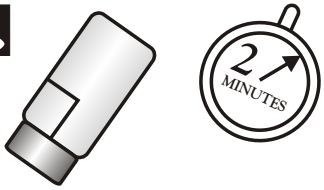
Pour the 5 mL sample from a graduated cylinder or similar into the colorimeter tube.

7.



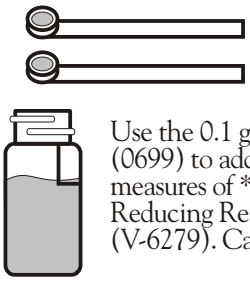
Use the graduated cylinder or similar to measure 5 mL of *Mixed Acid Reagent (V-6278) and add to tube.

8.



Cap and mix. Wait approximately 2 minutes before proceeding to Step 9.

9.



Use the 0.1 g spoon (0699) to add two measures of *Nitrate Reducing Reagent (V-6279). Cap.

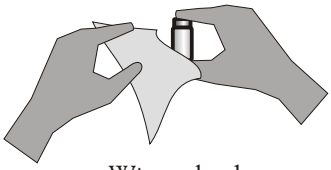
10.

Hold tube by index finger and thumb and mix by inverting approximately **50-60** times a minute for **4 minutes**. Wait **10 minutes** for maximum color development.

NOTE:

At the end of waiting period, an undissolved portion of *Nitrate Reducing Reagent may remain in bottom of the tube without affecting results.

11.



Wipe tube dry.

12.

Align the index line with the arrow on the meter, insert tube into chamber. Close the lid. Push the **READ** button. Record results as ppm Nitrate Nitrogen.

NOTE:

To convert Nitrate Nitrogen (NO_3-N) results to ppm Nitrate (NO_3), multiply by 4.4.

NITRATE-NITROGEN
TEST METHOD SPECIFICATIONS

APPLICATION

This method determines nitrate levels in drinking, surface, saline waters, domestic, and industrial waters.

RANGE

0 - 3.0 ppm Nitrate Nitrogen (Range can be extended by dilution.)

METHOD

Powdered cadmium is used to reduce nitrate to nitrite. The nitrite that is originally present plus reduced nitrate is determined by diazotization of sulfanilamide and nitrite followed by coupling with N-(1 naphthyl) -ethylenediamine dihydrochloride to form a highly colored azo dye which is measured colorimetrically.

HANDLING & PRESERVATION

Analysis should be made as soon as possible. If analysis cannot be made within 24 hours, the sample should be preserved by refrigeration at 4°C. When samples must be stored for more than 24 hours, they can be preserved by adding 2 mL of concentrated sulfuric acid per liter of sample. For best results, the analysis for nitrate should be determined at temperatures between 20°C and 25°C.

INTERFERENCES

Nitrite interferences at all levels. Strong oxidizing and reducing substances interfere. Low results might be obtained for samples that contain high concentrations of iron and copper.

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