

AMMONIA-NITROGEN - HIGH RANGE

NESSLERIZATION METHOD • CODE 3642-SC

QUANTITY	CONTENTS	CODE
30 mL	Ammonia Nitrogen Reagent #1	V-4797-G
2 x 30 mL	*Ammonia Nitrogen Reagent #2	*V-4798-G
1	Pipet, 1 mL, plastic	0354

*WARNING: Reagents marked with an * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.

Ammonia nitrogen is present in various concentrations in many surface and ground water supplies. Any sudden change in the concentration of ammonia nitrogen in a water supply is cause for suspicion. A product of microbiological activity, ammonia nitrogen is sometimes accepted as chemical evidence of pollution when encountered in natural waters.

Ammonia is rapidly oxidized in natural water systems by special bacterial groups that produce nitrite and nitrate. This oxidation requires that dissolved oxygen be available in the water. Ammonia is an additional source of nitrogen as a nutrient which may contribute to the expanded growth of undesirable algae and other forms of plant growth that overload the natural system and cause pollution.

APPLICATION: Drinking, surface, and saline waters; domestic and industrial wastes.

RANGE: 0.00–4.00 Ammonia Nitrogen

METHOD: Ammonia forms a colored complex with Nessler's Reagent in proportion to the amount of ammonia present in the sample. Rochelle salt is added to prevent precipitation of calcium or magnesium in undistilled samples.

SAMPLE HANDLING & PRESERVATION: Ammonia solutions tend to be unstable and should be analyzed immediately. Sample may be stored for 24 hours at 4°C or 28 days at –20°C.

INTERFERENCES: Sample turbidity and color may interfere. Turbidity may be removed by a filtration procedure. Color interference may be eliminated by blanking the instrument with a sample blank.

PROCEDURE

1. Press and hold **ON** button until colorimeter turns on.
2. Press **ENTER** to start.
3. Press **ENTER** to select TESTING MENU.
4. Scroll to and select ALL TESTS (or another sequence containing 5 Ammonia-N H) from TESTING MENU.
5. Scroll to and select 5 Ammonia-N H from menu.
6. Rinse a clean tube (0290) with sample water. Fill to the 10 mL line with sample.
7. Insert tube into chamber, close lid and select SCAN BLANK. (See Note)
8. Remove tube from colorimeter. Add 8 drops of Ammonia Nitrogen Reagent #1 (V-4797). Cap and mix. Wait 1 minute.
9. Use the 1.0 mL pipet (0354) to add 1.0 mL of *Ammonia Nitrogen Reagent #2 (V-4798). Cap and mix. Allow 5 minutes for maximum color development.
10. At end of the 5 minute waiting period, immediately mix, insert tube into chamber, close lid and select SCAN SAMPLE. Record result.
11. Press **OFF** button to turn the colorimeter off or press the **EXIT** button exit to a previous menu or make another menu selection.

CALCULATIONS:

To express results as Unionized Ammonia (NH₃):

$$\text{ppm Unionized Ammonia (NH}_3\text{)} = \text{ppm Ammonia-Nitrogen (NH}_3\text{-N)} \times 1.2$$

To express results as Ionized Ammonia (NH₄):

$$\text{ppm Ionized Ammonia (NH}_4^+\text{)} = \text{ppm Ammonia-Nitrogen (NH}_3\text{-N)} \times 1.3$$

To determine the percentages of Unionized and Ionized Ammonia-Nitrogen, consult the Appendix.

- NOTE:** For the best possible results, a reagent blank should be determined to account for any contribution to the test result by the reagent system. To determine the reagent blank, follow the above test procedure to scan a distilled or deionized water blank. Then follow the above procedure to perform the test on a distilled or deionized water sample. This test result is the reagent blank. Subtract the reagent blank from all subsequent test results of unknown samples. It is necessary to determine the reagent blank only when a new lot number of reagents are obtained.