

# CADMIUM

## PAN METHOD • CODE 4017

QUANTITY	CONTENTS	CODE
60 mL	*Buffered Ammonia Reagent	*4020-H
15 mL	Sodium Citrate, 10%	6253-E
30 mL	PAN Indicator	4021-G
30 mL	Stabilizing Reagent	4022-G
1	Pipet, 1.0 mL, plastic	0354
2	Pipet, 0.5 mL, plastic	0353

\*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.

Cadmium is used in batteries, paint pigments, electroplating processes, and with other metals in the preparation of alloys. The solubility of cadmium in natural water is proportional to the hardness or alkalinity of the water. Cadmium is not an essential nutrient for plants and animals. It is extremely toxic and can accumulate in the kidneys and liver.

**APPLICATION:** Drinking and surface waters; domestic and industrial wastewater.

**RANGE:** 0.00–1.00 Cadmium

**METHOD:** PAN (1-[2-Pyridylazo]-2-Naphthol) forms a red complex with Cadmium ( $\text{Cd}^{+2}$ ) at a pH of 10.

**SAMPLE HANDLING & PRESERVATION:** Analyze sample as soon as possible. If sample must be stored, acidify with nitric acid to a pH below 2.

**INTERFERENCES:**  $\text{Ag}^{+2}$ ,  $\text{Co}^{+2}$ ,  $\text{Cu}^{+2}$ ,  $\text{Mn}^{+2}$ ,  $\text{Ni}^{+2}$ ,  $\text{Zn}^{+2}$ ,  $\text{Y}^{+3}$ ,  $\text{In}^{+3}$

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## PROCEDURE

1. Press and hold **ON** button until colorimeter turns on.
2. Press **ENTER** to start.
3. Press **ENTER** to select TESTING MENU.
4. Select ALL TESTS (or another sequence containing 12 Cadmium) from TESTING MENU.
5. Scroll to and select 12 Cadmium from menu.
6. Rinse a tube (0290) with sample water. Fill to the 10 mL line with sample.
7. Insert the tube into chamber, close lid and select SCAN BLANK.
8. Remove tube from colorimeter. Use the 1.0 mL pipet (0354) to add 1.0 mL of \*Buffered Ammonia Reagent (4020). Swirl to mix.
9. Add two drops of Sodium Citrate, 10% (6253). Swirl to mix.
10. Use a 0.5 mL pipet (0353) to add 0.5 mL of PAN Indicator (4021). Swirl to mix.
11. Use a 0.5 mL pipet (0353) to add 0.5 mL Stabilizing Reagent (4022). Cap and mix.
12. Immediately insert tube into chamber, close lid and select SCAN SAMPLE. Record result.
13. Press **OFF** button to turn the colorimeter off or press **EXIT** button to exit to a previous menu or make another menu selection.

NOTE: For 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.