

# CHROMIUM-HEXAVALENT

## DIPHENYLCARBOHYDRAZIDE METHOD • CODE 3645-SC

QUANTITY	CONTENTS	CODE
10 g	*Chromium Reagent Powder	*V-6276-D
1	Spoon, 0.1 g, plastic	0699
50	Filter Paper	0465-H
1	Funnel, Plastic	0459

\*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.

Chromium may be present in water containing waste from industries such as metal plating. It is considered to be a toxic chemical and, if present in an amount of over 0.5 ppm, is evidence of contamination from untreated or incompletely treated industrial waste.

Chromium is one of a class of heavy metals found in the bottom mud of polluted bodies of water. Certain shellfish are capable of concentrating this element, endangering the health of its ultimate consumer, human or animal.

**APPLICATION:** Drinking, surface, & saline waters; domestic and industrial wastewaters.

**RANGE:** 0.00–1.00 Chromium

**METHOD:** Hexavalent chromium reacts with 1,5 diphenylcarbohydrazide under acidic conditions to form a red-purple color in proportion to the amount of chromium present.

**SAMPLE HANDLING & PRESERVATION:** Analysis for chromium should be made as quickly as possible after sample collection since storage in glass or plastic containers may result in low chromate values.

**INTERFERENCES:** High concentrations of mercurous and mercuric ions may impart a blue color to the chromium determination. Iron and vanadium in concentrations above 1 mg/L may result in a yellow color. However, the vanadium color becomes negligible 10 minutes after the addition of diphenylcarbohydrazide.

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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 22 Chromium) from TESTING MENU.
5. Scroll to and select 22 Chromium 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.
8. Remove tube from colorimeter. Use the 0.1g spoon (0699) to add one measure of \*Chromium Reagent Powder (V-6276). Cap and shake until powder dissolves. Wait 3 minutes for full color development.
9. During waiting period, fold a piece of filter paper (0465) in half then half again to form a cone. Push corners together to open end, and insert into funnel (0459).
10. At the end of 3 minute waiting period, filter sample into a clean tube. Mix. Insert tube into chamber, close lid and select SCAN SAMPLE. Record result.
11. Press **OFF** button to turn colorimeter off or press **EXIT** button to exit to a previous menu or make another menu selection.

- NOTES: To convert result to ppm chromate ( $\text{CrO}_4^{2-}$ ) multiply by 2.23. To convert result to ppm sodium chromate ( $\text{Na}_2\text{CrO}_4$ ) multiply by 3.12.

Highly buffered waters may give poor results and require a more careful pH adjustment. Before adding \*Chromium Reagent Powder, adjust pH of sample to pH 3–4.