TNT 820 Chemical Oxygen Demand

DOC312.53.94108

1–60 mg/L COD (Ultra Low Range) TNTplus™ 820

Scope and application: For wastewater, process analysis, surface water and cooling water.

Test preparation

Reagent Storage

Storage temperature: 15–25 °C (59–77 °F)

Protect against light.

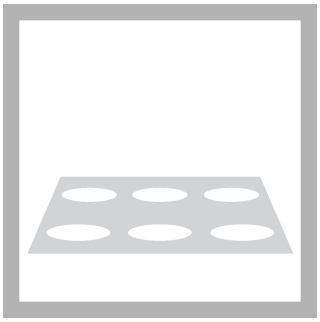
Temperature

The temperature of the water sample and reagents must be between 15–25 °C (59–77 °F).

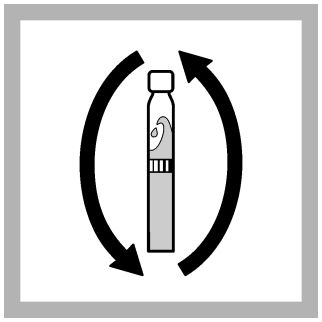
Before starting

Digestion is required.
Please read **Safety Advice** and **Expiration Date** on the package.
Some of the chemicals and apparatus used in this procedure may be **hazardous to the health and safety of the user** if inappropriately handled or accidentally misused.
Wear **appropriate eye protection and clothing** for adequate user protection. If contact occurs, flush the affected area with running water. Follow instructions carefully.
Close the hood or place a **safety shield** in front of the COD reactor to prevent injury if splattering occurs.
The reagent mixture is **light-sensitive**. Keep unused vials inside the original closed box.
Spilled reagent affects **test accuracy** and is hazardous to skin and other materials. Wash spills with running water.
For more detailed information see the HACH Procedure Manual.

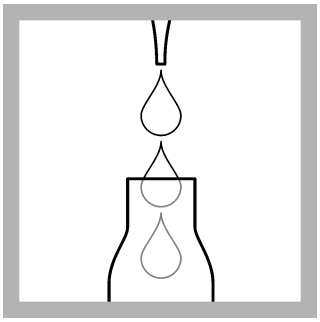
Procedure



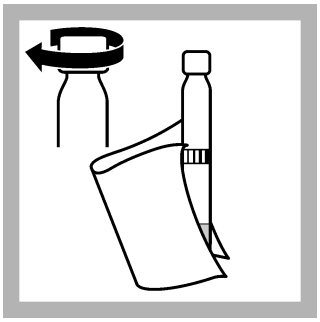
1. Turn on the reactor. Preheat to **150 °C (302 °F)**. Close the hood or place the safety shield in front of the reactor.



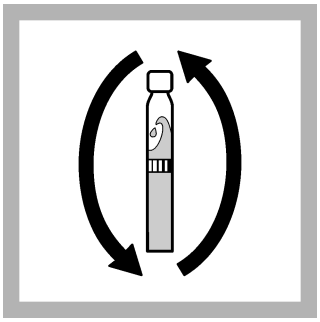
2. Invert a few times to bring the sediment into suspension.



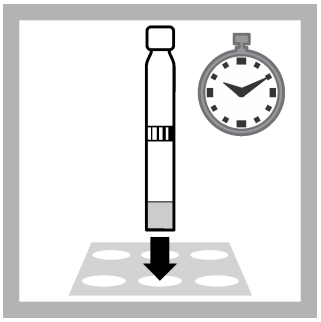
3. Carefully pipette 2.0 mL of sample.



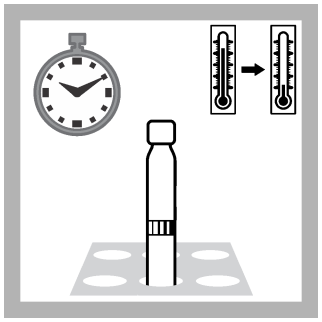
4. Close the vial, thoroughly clean the outside of the vial.



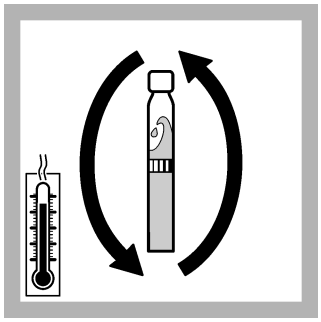
5. Hold the vial by the cap over a sink. Invert **gently** 2–3 times to mix.
The vial will become **very hot** during mixing.



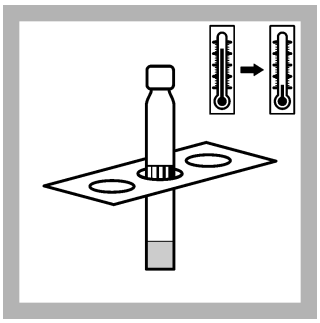
6. Place the vial into the **preheated** reactor. Heat in the reactor for **2 hours**.



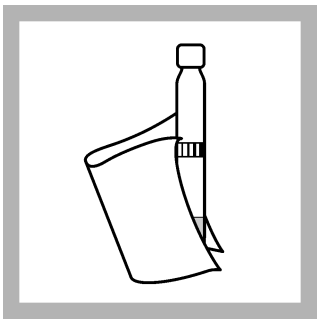
7. Wait about **20 minutes** for the vial to **cool** to **120 °C (248 °F)** or less.



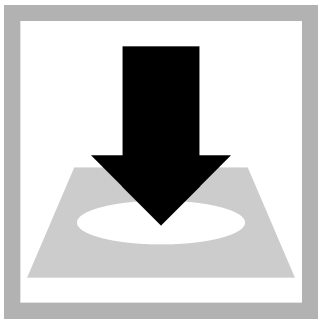
8. Invert the vial carefully several times while still **hot**.



9. Place the vial into a rack and **cool** down to room temperature.



10. Thoroughly clean the outside of the vial.



11. Insert the vial into the cell holder.
DR 1900: Go to LCK/TNTplus methods.
Select the test, push **READ**.

Interferences

The method can be used for samples (or diluted samples) with chloride concentrations of up to 1500 mg/L. In exceptional cases, some waste waters may contain substances for which the oxidizing capacity of this test is not sufficient.

An analyte concentration greatly in excess of the stated range adversely affects the color formation, resulting in a false reading within the method range.

The measurement results must be subjected to plausibility checks (dilute and/or spike the sample).

Summary of method

Oxidizable substances react with sulphuric acid and potassium dichromate solution in the presence of silver sulphate as a catalyst. Chloride is masked by mercury sulphate. The reduction in the yellow coloration of Cr^{6+} is evaluated.

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