



OBJECTIVE

This method can be used to determine the residual permanganate in water using standard spectrophotometric methods.

NOTE

If the instrument is being used for the first time, a calibration curve needs to be stored in the instrument. The absorbance is measured at 520 nm. A minimum of three standards should be used to generate this curve. (See instructions in the DR 890 instruction manual).

PROCEDURE

1. Obtain a water sample of unknown permanganate concentration and filter through a 0.45 um oxidant-resistant syringe filter (recommended examples are Whatman 0.45 um syringe filters or Millipore Millex GV syringe filters). This is to remove any turbidity and MnO₂ that may be present.
2. The sample may need to be diluted at this time. The acceptable range for reading residual permanganate on the DR 890 is approximately 1-50 mg/L. The sample should be diluted with deionized water to read within this range.
3. Enter program number 102 for the stored program on the instrument.
4. Zero the colorimeter using either deionized water or filtered, untreated groundwater. Fill the vial to the 25 mL mark and face the diamond shape on the sample cell towards the keypad. Note: Be sure to wipe the vial so it is clean, free of streaks, and dry. Place the light shield over the sample cell and press zero on the instrument.
5. Fill a second vial to the 25 mL mark with filtered groundwater containing an unknown concentration of permanganate. Note: Be sure to wipe the vial so it is clean, free of streaks, and dry. Place the light shield over the sample cell and press read on the instrument. The program will give the result in mg/L as either KMnO₄ or NaMnO₄. All Carus rental units read the results as KMnO₄. If a dilution was used, multiply the colorimeter reading by the dilution factor.
6. Rinse the cells with deionized water when finished.

CALCULATION

If analyzing for RemOx[®] L ISCO reagent (sodium permanganate) use the following equation to convert: mg/L KMnO₄ X 0.895 = mg/L NaMnO₄

RETURN INFORMATION

Please be sure all vials are empty and clean before shipping the kit back to Carus. No liquids should be shipped. Please send colorimeter back to the address listed below and insure shipment for \$1,500. Thank you!

Carus
Attention: Technical Service Chemist – Bldg 45
1500 8th Street
LaSalle, IL 61301



OBJECTIVE

This method can be used to determine the residual permanganate in water using standard spectrophotometric methods.

NOTE

The Hach DR 900 has been calibrated at 520 nm with user entered method 1001 (PERM0-50PPM) to determine residual KMnO_4 concentration between 0 and 50 mg/L.

PROCEDURE

1. Obtain a sample of unknown concentration and filter through a 0.45 μm oxidant-resistant syringe filter. This is to remove any turbidity and MnO_2 that may be present.
2. The sample may need to be diluted at this time. The acceptable range for reading residual permanganate on the DR 900 is approximately 1-50 mg/L. The sample should be diluted with deionized water to read within this range (Pink to light purple in color).
3. To turn on the DR 900 press options key on the top left. Select "Favorites/User Programs" from the list. Selected user program "1001 PERM0-50PPM" for permanganate analysis and press "START" key on the top right.
4. Pour the blank water into the glass cell (Cat. # 24019) to about the 20 ml mark and cap. Gently wipe the outside with a clean soft cloth or kimwipe so that it is clean, free of streaks and dry. Place the cell into the cell holder with the diamond facing the front. Place instrument light shield over the cell so that it fits into the grooves. Press the "ZERO" key.
5. Fill the second cell with the filtered groundwater containing an unknown concentration of permanganate to about the 20 ml mark and cap. Gently wipe the outside with a clean soft cloth or kimwipe so that it is clean, free of streaks and dry. Place the cell into the cell holder with the diamond facing the front. Place light shield over the sample cell so that it fits into the grooves. Press the "READ" key. The program will give the result in mg/L as KMnO_4 . If a dilution was used, multiply the colorimeter reading by the dilution factor.
6. Rinse the cells with deionized water when finished.

CALCULATION

If analyzing for RemOx[®] L ISCO reagent (sodium permanganate) use the following equation to convert: $\text{mg/L KMnO}_4 \times 0.895 = \text{mg/L NaMnO}_4$

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