METTLER TOLEDO iNORGANIC VENTURES

Colorimetric Method for Measuring Chloride

FERRICYANIDE COLORIMETRY METHOD (EPA 325.2)

Method Description

The thiocyanate ion (SCN-) is liberated from mercuric thiocyanate through sequestration of mercury by chloride ion to form un-ionized mercuric chloride. In the presence of ferric ion, the liberated SCN- forms highly colored ferric thiocyanate in concentration proportional to the original chloride concentration.

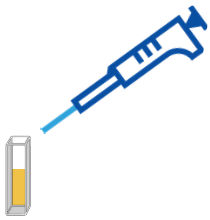
Test Procedure

1. Pipette 410 µL* of the sample into the cuvette.

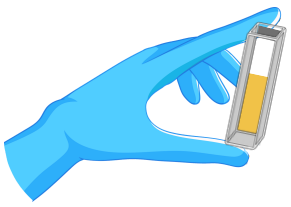
** µL = microliter*

2. Pipette 1800 µL of **DI H2O** into the cuvette.

3. Pipette 1800 µL of **RGT-CHLORIDE-CL-BTL-1-OF-1** into the cuvette.



4. Cap cuvette, and shake 10-15 times to mix reagent & sample within.



5. Wait duration of reaction time: 7 minutes. **Note:** Solution should turn orange during reaction time.

6. Insert cuvette into the UV-Vis and record absorbance of sample.

Be sure to use a new pipette tip for every addition. Replace the pipette tip between every step. Always dispose of all waste properly.

Expected Limits of Detection

Path Length (mm)	Method Detection Limit (mg Cl/L)
10	2.5
50	4.1

Detection limits were calculated to be equal to three times the standard deviation of a series of 10 replicate measurements of the calibration blank.
Note: 10 mm path length detection limit lower than 50 mm path length due to decreased effect of background from **RGT-CHLORIDE-CL-BTL-1-OF-1** color.

Preparation of Calibration Standards

Use the following volumes to prepare a Calibration Curve using a stock standard containing 1000 mg/L of Chloride. Select at least 3-4 calibration standards that bracket your expected concentration range. Dilute all standards in DI H2O or a matrix most suited to your sample type.

Concentration (mg Cl/L)	Volume of Standard Aliquot (mL)	Final Volume (mL)
0.00	0.00	50
2.0	0.20	**100***
5.0	0.25	50
10.0	0.50	50
25.0	1.25	50
50.0	2.50	50
75.0	3.75	50
100.0	5.00	50

** Larger final volume needed for 2.0 mg Cl/L standard due to small standard aliquot volume.*

Calibration Tip:

If using different calibration standards to construct your calibration curve, ensure that the concentrations of neighboring standards do not exceed a ten fold difference.