

DISCRETE ANALYZER CHEMISTRY

Chloride (Cl⁻) Method

Methods Referenced

- Standard Methods 4500-Cl⁻ E – *Automated Ferricyanide Method*
- EPA Method 325.2 – *Chloride by Automated Colorimetry AKA Colorimetric, Automated Ferricyanide AAll*

Reagent Composition

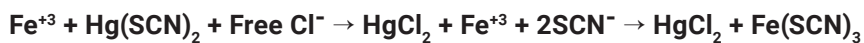
Final reagent is made from the following sub-solutions:

1. Ferric nitrate, Fe(NO₃)₃
2. Mercuric thiocyanate, Hg(SCN)₂

Sub-solutions are combined to create the only reagent used for the Cl⁻ method. Final concentrations are as follows:

- 0.6255 g/L Mercury (II) thiocyanate
 - 30.3 g/L Iron (III) nitrate nonahydrate
- Or
- 1.974 mmol Hg⁺²
 - 3.943 mmol (SCN)⁻
 - 75 mmol Fe+3

Chemical Reactions



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.

Balanced Reaction



Note: Calculations using the limiting factor of Hg⁺² (by moles) show that this reagent can react with a maximum of ~140 mg/L free chloride.

For more information, contact info@inorganicventures.com



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