

Summary: Iron(III) (ferric iron) reacts with an ascorbic acid-hydrochloric acid solution at 90°C and is reduced to iron(II) (ferrous iron). Iron(II) reacts with FerroZine® to form a pink-colored complex, and the absorbance is measured at 560 nm.

Interferences: Add neocuproine to prevent interference from copper. Up to 100 mg/L alkali metals and alkaline earth metals do not interfere with the assay. Filter turbid samples prior to analysis.

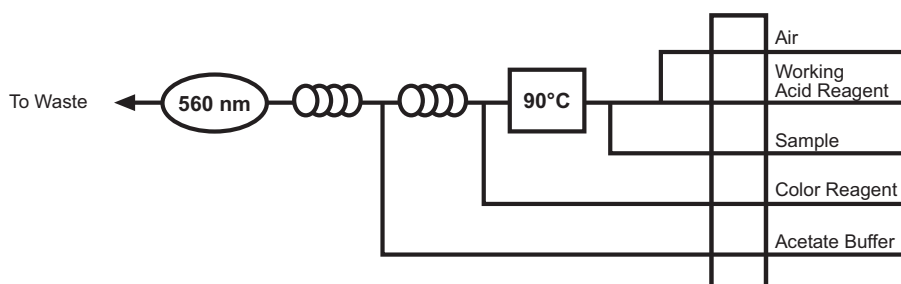
Performance Specifications:

Range:	0.10–5.0 mg/L
Throughput:	40 samples/hour
Precision:	
1.0 mg/L	<1% RSD
4.0 mg/L	<1% RSD
Method Detection Limit (MDL):	0.01 mg/L

Chemicals:

Ascorbic Acid, C ₈ H ₈ O ₆	Neocuproine Hydrochloride Hydrate, C ₁₄ H ₁₂ N ₂ •HCl•H ₂ O
Brij®-35, 30% w/v (OI Analytical Part #A21-0110-33)	3-(2-Pyridyl)-5,6-diphenyl-1,2,4-triazine- <i>p,p'</i> -disulfonic Acid Monosodium Salt (FerroZine or PDT Disulfonate Monosodium Salt), C ₂₀ H ₁₃ N ₄ O ₆ S ₂ Na
Ethylmercurithiosalicylic Acid Sodium Salt (Thimerosal), C ₉ H ₉ HgO ₂ SNa	Sodium Acetate Anhydrous, NaC ₂ H ₃ O ₂
Ferrous Ammonium Sulfate Hexahydrate, (NH ₄)Fe(SO ₄) ₂ •6H ₂ O	Sodium Chloride, NaCl
Hydrochloric Acid, concentrated, HCl	Sodium Hydroxide, NaOH
Iron, wire, Fe	Sulfuric Acid, concentrated, H ₂ SO ₄

Basic Flow Diagram:



Selected References: Stooky, L. *Analytical Chemistry* **1970**, 42 (7).

References: Serum Iron. *Technicon Methods*; Technicon Corporation, Tarrytown, NY, 1973; No.SF4-0025FFS.

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