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Sodium Pentacyanoammineferrate(II)

[Trisodium Amminepentacyanoferrate (3-)], $C_5H_3FeN_6Na_3$ 271.93 CAS RN®: 14099-05-9.—Yellow to tan powder. Soluble in water.

SOLUBILITY: Dissolve 500 mg in 50 mL of water, and allow to stand for 1 h. The solution is clear and free from foreign matter.

SENSITIVITY

1,1-Dimethylhydrazine standard solution: Place 500 mL of water in a 1-L volumetric flask, and add from a buret 1.27 mL of anhydrous 1,1-dimethylhydrazine. Dilute with water to volume, and mix. Pipet 10 mL of this solution into a 100-mL volumetric flask, and dilute with water to volume. Each milliliter of this solution contains the equivalent of 100 µg of 1,1-dimethylhydrazine.

Buffer solution: Transfer 4.8 g of citric acid monohydrate to a 1-L volumetric flask, dissolve in water, add 14.6 g of sodium phosphate, swirl to dissolve, and dilute with water to volume.

Test preparation: Dissolve 100 mg of sodium pentacyanoammineferrate(II) in 100 mL of water.

Procedure: Into each of five 25-mL volumetric flasks pipet 0, 0.25, 0.50, 1.0, and 1.5 mL, respectively, of 1,1-Dimethylhydrazine standard solution; to each add 15 mL of Buffer solution, and swirl to mix. To each flask, add by pipet 2 mL of Test preparation, mix, dilute with Buffer solution to volume, and allow to stand for 1 h. Using a suitable spectrophotometer, 1-cm cells, and the solution containing no 1,1-Dimethylhydrazine standard solution as the blank, determine the absorbances of the remaining solutions at 500 nm. Plot the observed absorbance as the ordinate versus the concentration of standard as the abscissa on coordinate paper, and draw the curve of best fit. The plot is linear and the absorbance of the 150-µg solution is NLT 0.65.

[NOTE—A suitable grade is available as catalog number 14099-05-9 from www.bocsci.com.]

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
SODIUM PENTACYANOAMMINEFERRATE(II)	Margareth R.C. Marques Principal Scientific Liaison	HDQ Headquarters

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