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Doc No :	PDAE313
Date :	01-02-2024
Type :	AQUASOL
Product Code:	AE313

PRODUCT DATA SHEET

1 INFORMATION

CODE: AE313 PARAMETER: Dissolved Iron (LOW LEVEL) RANGE: 0 - 10 mg/l as Fe

2 METHOD

Iron is reduced to the ferrous state by react with acid and hydroxylamine, and treated with 1,10- phenanthroline at pH 3.2 to 3.3. Three molecules of phenanthroline chelate each atom of ferrous iron to form an orange red complex. The intensity of colour is directly proportional to concentration of dissolved ferrous ion.

3 APPLICATION

Drinking Water, Mineral Water, Well Water, Swimming Pool Water, Surface and Ground Water, Aquaculture, Boiler Water, Process Water, Industrial Wastewater, Effluent Water, Cooling System Water, Chiller Water etc

4 INTERFERENCE

Strong oxidizing agents may interfere. To minimize these interferences, excess hydroxylamine hydrochloride has been added to the dissolved iron reagents. Cyanide, Nitrite and Phosphates, chromium, zinc in concentration more than 10 times that of iron have potential to interfere. Also interfering substances like cobalt and copper excess of 5 mg/l, nickel in excess of 2 mg/l. Mercury, molybdate, Bismuth, Cadmium, and Silver may precipitate phenanthroline. excess phenanthroline has been added to the reagent to minimize interference from these metals.

5 METHOD CONTROL

To Check test reagents,

To prepare 200 ppm Ironas Fe standard Add 20ml Conc H2SO4 to 50 ml demineralised water and dissolve 1.404 gm Ferrous
Ammonium Sulphate { Fe (NH4)2 (SO4)2.6H20 } Slowly add potassium Permanganate (dissolve 0.316 gm of Kmno4 in demineralised water and dilute to 100 ml) until a faint pink color Persist. Add last few ml of solution drop wise. Approximately 50ml of Kmno4 will be required. Dilute to 1000 ml with demineralised water, stir well. Dilute this standard solution with distilled water to 4 mg/l Fe, and analyse as described in procedure card.

6 REAGENTS AND ACCESSORIES

Reagents: FE1(1Nos),FE2(2Nos), FE3(1Nos)
Accessories: 25 ml Test Jar(1Nos), Procedure Label(1Nos), Spoon, comparator tube(2 Nos.)Colour chart, syringe

7 STORAGE

The test reagents are stable up to the date stated on the pack when stored closed at ambient temperature.

8 REFERENCE

APHA Standard Methods, 22nd ed., Method 3500-Fe B – Standard Methods for Chemical Analysis of Water and Waste water.

9 DIRECTION FOR USE

1.Take 1ml water sample in the test jar using syringe provided here.
2.Dilute up to 5 ml with demineralized or distilled (Iron free water)
3.Add 15 drops of FE 1 and 30 drops of FE 2.
4.Add one spoonful of (provided here with) FE 3 and mix the contents thoroughly by swirling the test jar. Let mixture stand for 10 minutes.
5.Transfer the contents in small comparator tube provided here.
6.Read the ppm Iron as follows:
a)Place the comparator tube on the inner white circle, of the colour comparison chart.
b)View from the top of the comparator tube to compare the sample colour and the colour around.
c)Read the ppm IRON as Fe after arriving at the correct match.

Note:Sample pH should be preferably neutral. Neutralize the sample to phenolphthalein end point before testing by using dilute acid or alkali .
In case of water sample having colour tint do the following.
1)Take the original water sample in the comparator tube and read the ppm Iron as per the procedure in No. 6 above.
2)This ppm reading has to be subtracted from the reading of the tested sample.