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Doc No : PDAE303

Date : 01-02-2024

Type : AQUASOL

Product Code: AE303

PRODUCT DATA SHEET**1 INFORMATION**

CODE: AE303

PARAMETER: Dissolved Iron (LOW LEVEL)

RANGE: 0 - 2 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)₂.6H₂O } Slowly add potassium Permanganate (dissolve 0.316 gm of K₂MnO₄ 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 K₂MnO₄ will be required. Dilute to 1000 ml with demineralised water, stir well. Dilute this standard solution with distilled water to 1 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

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 5 ml of water sample to be tested in the test jar.
- 2)Add 15 drops of FE1 and 30 drops of FE2 and mix the contents thoroughly.
- 3)Add one spoonful (provided herewith) of FE3 and mix the contents thoroughly by swirling the test jar and let the mixture stand for 10 minutes.
- 4)Transfer the content in small comparator tube provided here.
- 5)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. 5 above.
- 2.This ppm reading has to be subtracted from the reading of the tested sample.