COPPER METHOD 6

Using Copper/Zinc Tablets

INTRODUCTION

The following procedure may be applied to waters, wastewaters and industrial waters. Simple supplementary procedures are provided to overcome any interference caused by the presence of significant amounts of zinc or residual chlorine.

PRINCIPLE OF THE METHOD

Copper reacts with zincon in solution buffered to pH 9.0 to give an intense blue colour. The solution of the reagent itself is red. Thus over the range covered the colours show a distinct difference in shade and may be measured by comparison with a series of Lovibond permanent colour glass standards. To provide maximum simplicity for control testing the buffers and zincon reagent are combined together in the form of tablets using one per test.

REAGENTS REQUIRED

1. **Lovibond Copper/Zinc High Range Test Tablets (For Disc 3/110)**

2. **Lovibond Copper/Zinc Low Range Test Tablets (For Disc 3/106)**

SUPPLEMENTARY REAGENTS

1. **Lovibond EDTA Tablets (For Zinc Interference) See notes.**

2. **Lovibond Dechlor Tablets (For Chlorine Interference) See notes.**

See notes for supplementary reagents for correction of zinc and chlorine interference if required.

THE STANDARD LOVIBOND COMPARATOR DISC 3/110 AND 3/106

Disc 3/110 covers the range 0 to 4mg./l. Copper (Cu) in steps of 0.5mg./l., (using Copper/Zinc High Range Tablets).

Disc 3/106 covers the range 0 to 1mg./l. Copper (Cu) in steps of 0.1mg./l. omitting 0.7 and 0.9, (using Copper/Zinc Low Range Tablets.

Both discs are used with 13.5mm./10ml. moulded cells.

METHOD

1. Place in the left-hand side of the Comparator a 13.5mm./10ml. moulded cell containing sample only.

2. Rinse a similar cell with the water sample then fill to the 10ml. mark. Add one Copper/Zinc High Range test tablet or one Copper/Zinc Low Range test tablet as appropriate, crush and mix to dissolve. Allow to stand about five minutes then mix again to ensure complete dissolution of the indicator.

3. Place in the right hand side of the Comparator and hold against a source of white light, such as the Lovibond Daylight 2000 Unit, or against North Daylight (not fluorescent lighting). Rotate the disc until the nearest colour match is obtained.

4. The figure displayed in the bottom right-hand corner of the Comparator is the concentration of Copper (as Cu) in mg./l.

NOTES

1. For concentrations higher than the top step on the disc, the sample may be suitably diluted with deionised water and retested, afterwards multiplying the result by the appropriate factor.

2. Any interference due to the presence of zinc will give high readings since zinc reacts in the same manner as copper. To correct for this add to the above cell, after the reading has been taken, one EDTA tablet, crush and mix to dissolve. This destroys the zinc colour complex leaving the copper so that by taking a second reading a corrected copper result is obtained.

3. If the sample contains significant amounts of chlorine, some bleaching of the colours of the Copper complex may be noted. This interference may be removed by the addition of a Dechlor Tablet to the water sample prior to the addition of the Copper Tablet. The Dechlor Tablet must be crushed and mixed to dissolve before the Copper Tablet is added. The test is then carried out as per the method.

REVISION HISTORY

Date	Change Note	Issue
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