

MANGANESE METHOD 6

Using Lovibond Manganese LR Tablets

INTRODUCTION

Manganese-containing minerals occur widely and manganese salts are commonly found in many natural waters. Manganese is an objectionable constituent in water used for domestic purposes or industrial applications. In domestic situations, manganese will cause brown or black staining to laundry or plumbing fittings even at very low concentrations. In process applications such as paper manufacturing or textile finishing, similar staining can occur. Manganese salts may impart an astringent taste to drinking water supplies, and in swimming pool applications can give an aesthetically displeasing brown coloration to the water.

In most cases where manganese salts occur naturally in the water, it will be necessary to apply special methods of removal before the water can be used for domestic or industrial purposes.

The following procedure provides an extremely sensitive method of measuring low concentrations of manganese for the assessment of natural waters and the control of manganese removal plant.

PRINCIPLE OF THE METHOD

Manganese (II) reacts with formaldoxime at a pH between 9.0 and 10.5 to form an orange-red complex. The inclusion of a reducing agent ensures that higher oxidation states of manganese, which may be present, also react with the formaldoxime.

The intensity of the colour produced, which is proportional to the total manganese concentration, is measured by comparison against Lovibond permanent colour glass standards.

For maximum stability and convenience in use, the reagents are combined together in the form of two tablets, using one of each per test.

REAGENTS REQUIRED

1. Lovibond Manganese LR No.1 Tablets
2. Lovibond Manganese LR No.2 Tablets

STANDARD LOVIBOND COMPARATOR DISC 3/169

Disc 3/169 covers the range 0 to 4.0mg./l. of Manganese in steps of 0.5mg./l.

The disc is used with 13.5mm /10ml. moulded cells.

METHOD

1. Fill two clean 10ml. cells to the 10ml. lines with sample.
2. Place one cell in the left-hand compartment of the Comparator.
3. To the other cell add one Manganese LR No.1 tablet, crush and mix to dissolve using a clean stirring rod.
4. Add one Manganese LR No.2 tablet, crush and mix to dissolve. Ensure that the tablets dissolve completely.
5. Allow to stand for 5 minutes for full colour development, and then place the cell in the right-hand compartment of the Comparator.

6. Match the colour against the disc by holding the Comparator facing North Daylight and rotating the disc until the nearest colour match is obtained.
7. The figure displayed in the bottom right-hand corner of the Comparator is the concentration of Manganese in mg./l.

REVISION HISTORY

Date	Change Note	Issue
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