

THE DETERMINATION OF THE STRENGTH OF SODIUM HYPOCHLORITE SOLUTIONS

INTRODUCTION

This procedure for the determination of the strength of commercial Sodium Hypochlorite solutions has been introduced to provide a quick and simple test, which can be carried out 'on site'. It must be emphasised, however, that the subsequent results of any test must be taken as an indication of the Hypochlorite level, rather than a precise measurement. For the determination of the latter, more precise laboratory techniques should be used.

PRINCIPLE OF THE METHOD

Sodium Hypochlorite in acid solution liberates iodine from potassium iodide. The intensity of the colour produced, which is proportional to the amount of Hypochlorite originally present, is measured by comparison against Lovibond permanent coloured glass standards.

REAGENTS REQUIRED

1. **Lovibond Acidifying GP Tablets.**
2. **Lovibond Potassium Iodide Tablets.**

THE STANDARD LOVIBOND COMPARATOR DISC 3/2 HYPO

Disc 3/2 HYPO covers the range 2 - 16% ^w/_w available chlorine in steps of 2% and is used with 13.5mm./10ml. moulded cells.

METHOD (Range 2-16%)

1. Fill a 5ml. plastic syringe to the 2.5ml. mark with the solution under test, ensuring that all air bubbles are expelled. This is achieved by working the plunger rapidly up and down whilst keeping the tip of the syringe under the surface of the liquid.
2. Slowly expel the 2.5ml. of the solution into a 100ml. shaker tube and dilute to the 50ml. mark with chlorine-free water. Mix thoroughly.
3. Fill a 1ml. plastic syringe to the 0.5ml. mark with this diluted solution, expelling any air bubbles in the same way as above. Slowly expel the measured 0.5ml. into another 100ml. shaker tube and dilute to the 50ml. mark with chlorine-free water. Mix thoroughly.
4. Rinse a 10ml. Comparator cell with this solution and then fill to the 10ml. mark. Add a Potassium Iodide tablet followed by an Acidifying GP tablet, crush with a stirring rod and mix to dissolve.
5. Place the cell in the right-hand compartment of a Lovibond Comparator, and another cell containing just water in the left-hand compartment.
6. Match the colour by holding the Comparator against a standard source of white light, such as the Lovibond Daylight 2000 Unit, or against North daylight (not fluorescent lighting) and rotating the disc until the nearest colour match is obtained.
7. The figure displayed in the bottom right-hand corner is the percentage ^w/_w of available chlorine present in the original sample of Sodium Hypochlorite.

Lower Range – 0.2 to 1.6 % w/w

To cover the range 0.2 to 1.6% the method is modified as follows:

Take a 2.5ml. volume of sample in to the container and dilute to 50ml. with chlorine-free water. Mix well and then take 5.0ml. of this solution and dilute to 50ml. in another container (if using the same syringe, remember to rinse it out well before making the second dilution). Mix well. Rinse a Comparator cell with this solution and then fill to the 10ml. mark. Add the reagents as per the above method.

The resultant disc reading should be divided by 10.

NOTE

A complete test kit AF139 is available for this test. Full details may be obtained from The Tintometer Limited and its distributors.

REVISION HISTORY

Date	Change Note	Issue
20/06/02	36/460	2
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