

PRINCIPLE

The total acidity of the oil is expressed as neutralisation number which is defined as the number of milligrams of potassium hydroxide required to neutralise completely the acids present in one gram of oil. The acids produced by Oxidation of mineral oils are soluble in alcohol and if a fixed quantity of oil is mixed with a fixed quantity of alcohol in mixture may be acidic, neutral or alkaline depending upon the acid present. If a fixed quantity of universal indicator is added to this mixture the colour will indicate the PH from which the acidity may be calibrated.

PROCEDURE

A. 1.1 ml portion of the insulating oil (approximately 1 gm) to be tested is accurately pipetted into a clean dry test tube. To this is added 1 ml of rectified spirit (ethyl alcohol) and the mixture is gently shaken.

One ml of solution of 0.0085N sodium carbonate is then added. After shaking the test tube again five drops of universal indicator are added.

The resulting mixture develops a colour depending upon the PH value of the mixture.

Oil having total acidity of 0 to 0.5 shall show transition colours from prussian blue to yellow.

Whereas those having an add number of 0.5 and above shall show a change from yellow to vermilion.

The chart supplied with the Kit gives the colours obtained by using this test on oils having neutralisation (total acidity) from 0 to 1.0.

CONTENTS OF KIT

The Kit consists of a box containing the following :

- Polythene bottles containing 100 ml each of ethyl alcohol and Sodium carbonate solution (Na_2CO_3) of 0.0085N concentration
- An indicator bottle containing universal indicator
- Four clear glass test tubes
- Three graduated droppers, which serve as pipettes
- Colour chart calibrated with neutralisation number values, and
- Instructions Booklet

PRECAUTIONS

- The test tubes and pipette used for the test should be absolutely clean and dry
- Rectified spirit used shall be of good quality conforming to IS-323-1959 methylated spirit should not be used
- While testing the test tube should be gently shaken to mix the solution and not closed with thumb and vigorously agitated
- The same pipette can be used for a number of oils provided it is thoroughly rinsed the oil to be tested before pipetting it



*Technical Specifications & Appearance are subject to change without prior notice