Sr. No. in Scope NABL / NON NABL

**Flow chart of Acidity test for Emulsifiable Concentrate (EC) formulation**

|  |  |
| --- | --- |
| **Date of Analysis** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Step** | **Execution** | **Executed By** |
| 1. | Sample No. |  |  |
| 2. | Name of Sample |  |  |
| 3. | **Procedure** | | |
| **3.1** | **Sample Titration** |  |  |
| 3.1.1 | Weigh 10 g of sample in 250 mL conical flask | g |  |
| 3.1.2 | Add 100 mL distilled water |  |  |
| 3.1.3 | Add indicator Methyl red / Bromocresol purple |  |  |
| 3.1.4 | Titrate with 0.05 N NaOH and note the burette reading | mL |  |
| **3.2** | **Blank titration** |  |  |
| 3.2.1 | Take 100 mL distilled water in 250 mL conical flask |  |  |
| 3.2.2 | Add indicator Bromocresol purple / Methyl Red |  |  |
| 3.2.3 | Neutralise with 0.05 N NaOH (if blank is acidic)/ 0.05 N HCl (if blank is alkaline) |  |  |
| 3.2.4 | Note the burette reading | mL |  |
| **3.3** | **Normality of Sodium hydroxide** |  |  |
| 3.3.1 | Weigh 0.3- 0.4 g of GR grade Potassium hydrogen phthalate (KHP) in conical flask. | g |  |
| 3.3.2 | Add 75 mL distilled water and 2-3 drops of phenolphthalein indicator and titrate with 0.05 N NaOH solution taken in burette. |  |  |
| 3.3.3 | Note the burette reading | mL |  |
| **3.4** | **Normality of Hydrochloric acid** |  |  |
| 3.4.1 | Weigh 0.1 g of GR grade Sodium carbonate (Na2CO3) in 250 mL conical flask |  |  |
| 3.4.2 | Add 25-30 mL distilled water and 2-3 drops of methyl orange indicator and titrate with 0.05 N HCl solution taken in burette. |  |  |
| 3.4.3 | Note the burette reading | mL |  |

**4. Calculation:**

Wt. of KHP x 1000

1. **Normality of NaOH** = -----------------------------------

Burette Reading x 204.22

204.22 = Equivalent Weight of KHP

Wt. of Na2CO3 x 1000

1. **Normality of HCl** = -----------------------------------

Burette Reading

53 = Equivalent Weight of Na2CO3

**In case blank is Acidic**

|  |  |
| --- | --- |
| **iii) Acidity (as H2SO4) % by mass** =  4.9 (V – B) x N1  ----------------------  M | Where,  V= Volume of NaOH consumed by the sample  B= Volume of NaOH consumed by blank.  N1= Normality of NaOH solution.  M = Mass in ‘g’ of the sample taken for test |

**In case blank is Alkaline**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **iv) Acidity (as H2SO4) % by mass** =  4.9 (VN1 + vN2)  --------------------------  M | | | | | **Where,**  V = Volume of NaOH required for the test sample  v = Volume of HCl required for blank titration  N1= Normality of standard NaOH solution  N2= Normality of standard HCl solution  M = Mass in ‘g’ of the sample taken for test | | |
| **Sr. No.** | | **Name of test** | | | **Result** | | **Unit** | **Method of Analysis** | |
| 1. | | Acidity | | |  | | % | **IS – 6940 : 1982** | |
| Remark / Reference : | | | | | | | | | |
| Analyzed by | | | Name |  | | | | | |
| Dated signature |  | | | | | |
| Checked by | | | Name |  | | | | | |
| Dated signature |  | | | | | |