Sr. No. in Scope NABL / NON NABL

**Flow Chart for Analysis of Ethion in Formulation**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Step** | **Execution** | **Executed By** |
| 1. | Sample No. |  |  |
| 2. | Name of Sample |  |  |
| 2.1 | Sample Description |  |  |
| **3.** | **Preparation of Standard Solution** | **R1** | **R2** |  |
| 3.1 | Weigh 0.625 g a.i. of Ethion reference standard accurately into a 25 ml volumetric flask, Dissolve and make up the volume to the mark with tetrachloro ethylene. This solution will give 25 mg/mL stock solution. ( Stock A) | mg | mg |  |
| 3.2 | Note the serial number in balance logbook |  |  |  |
| **4.** | **Preparation of Standard Curve :** |  |  |  |
| 4.1 | Pipette out 2.0 ml of stock A (3.1) into a 25 mL volumetric flask. Dissolve and make up the volume to the mark with tetrachloro ethylene. |  |  |  |
| 4.2 | Pipette out 3.0 ml of stock A (3.1) into a 25 mL volumetric flask. Dissolve and make up the volume to the mark with tetrachloro ethylene. |  |  |  |
| 4.3 | Pipette out 4 ml of stock A (3.1) into a 25 mL volumetric flask. Dissolve and make up the volume to the mark with tetrachloro ethylene. |  |  |  |
| 4.4 | Pipette out 6 ml of stock A (3.1) into a 25 mL volumetric flask. Dissolve and make up the volume to the mark with tetrachloro ethylene. |  |  |  |
| 4.5 | Pipette out 8 ml of stock A (3.1) into a 25 mL volumetric flask. Dissolve and make up the volume to the mark with tetrachloro ethylene. |  |  |  |
| 4.6 | Adjust the spectrophotometer to the optimum instrument settings over the wavelength region of 9.5 to 10.5 µ.(1050 to 950 cm-1 ) |  |  |  |
| 4.7 | Fill the absorption cell with Tetrachloro ethylene by means of the hypodermic syringe. Make a scan with tetrachloro- ethylene in the cell over the wavelength region of 9.5 to 10.5 µ. |  |  |  |
| 4.8 | Without changing the instrument settings, fill the cell in turn, with each of the calibration solutions starting with the most dilute. Scan each of these solutions over 9.5 to 10.5 microns. |  |  |  |
| 4.9 | Measure the absorbance maximum at 9.88 µ (1012 cm-1) with the base point at 10.15 µ ( 985 cm-1 ) |  |  |  |
| **5** | **Preparation of Sample solution:** |  |  |  |
| 5.1 | Weigh 100 mg a.i. of sample in a 25 mL beaker dissolve in tetrachloro ethylene. | mg | mg |  |
| 5.2 | *Note the serial number in balance logbook* |  |  |  |
| 5.3 | Transfer the sample quantitatively to a 50 ml volumetric flask and make up to the mark with tetrachloro ethylene. |  |  |  |
| **6.** | **Estimation of sample:**  |  |  |  |
| 6.1 | Fill the cell with sample solution using a hypodermic syringe. |  |  |  |
| 6.2 | Scan the sample solutions over the wavelength region of 9.5 to 10.5 microns.  |  |  |  |
| 6.3 | Measure the absorbance maximum at 9.88 microns with the base point at 10.15 microns. |  |  |  |
| 6.4 | Determine the quantity of the Ethion in the sample from the calibration curve and calculate the percent active ingredient present in the sample. |  |  |  |

**7. CALCULATION:**

|  |  |
| --- | --- |
| Ethion content m X 100% by mass, = ----------------- M  | **Where,**m = Quantity of Ethion mg/ mL obtained from curveM = mass in mg of the sample taken for the test |
| **Replicate – 1** | **Replicate -2** |

**Result:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Name of test** | **Result** | **Unit** | **Method of Analysis**  |
| 1. | Ethion Content |  | % | IS 10369-1982(Reaffirmed 2009) |
| Remark / Reference : |

|  |  |  |
| --- | --- | --- |
| Analyzed by | Name  |  |
| Dated signature |  |
| Checked by | Name  |  |
| Dated signature |  |