Sr. No. in Scope NABL /NON NABL

**Flow chart for analysis of Allethrin content in formulation sample**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Step** | | | | **Execution** | | **Executed By** |
| 1. | Sample No. | | | |  | |  |
| 2. | Name of Sample | | | | | | |
| 3 | **Procedure** | | | | | | |
| **3.1 Preparation of Internal Standard** | | | | |  |  |
| 3.1.1 | | Weight of the Di-butyl Pthalate taken into a 50 ml  volumetric flask | | | g |  |
| 3.1.2 | | Dissolve and dilute up to the mark with toluene | | |  |  |
| **3.2 Preparation of Standard** | | | | |  |  |
| 3.2.1 | | Weight of the standard taken into 25 ml  volumetric flask (stock solution) | | | g |  |
| 3.2.2 | | Purity of standard | | | % |  |
| 3.2.3 | | Volume of stock solution (3.2.1) taken into another  25 ml volumetric flask | | | ml |  |
| 3.2.4 | | Add internal standard solution (3.1.2) | | | ml |  |
| 3.2.5 | | Dilute up to the mark with toluene | | |  |  |
| **3.3 Preparation of Sample** | | | | |  |  |
| 3.3.1 | | | Weight of the sample taken into 250 ml stopper conical flask | | g |  |
| 3.3.2 | | | Volume of toluene added to the sample | | ml |  |
| 3.3.3 | | | Volume of formic acid added to the sample | | ml |  |
| 3.3.4 | | | Shaking time (first) | | min |  |
| 3.3.5 | | | Amount of anhydrous sodium sulphate added | | g |  |
| 3.3.6 | | | Amount of activated charcoal added | |  |  |
| 3.3.7 | | | Shaking time (second) | | min |  |
| 3.3.8 | | | Extract of the sample solution is collected through filtration using buchner funnel | |  |  |
| 3.3.9 | | | Internal standard solution (3.1.2) taken into a 25 ml volumetric flask | | ml |  |
| 3.3.10 | | | Dilute up to the mark with filtrate sample solution | |  |  |
| 4. | **GC Parameters** | | | | |  |  |
| **4.1 Column** | | | | |  |  |
| 4.1.1 | | Stainless steel column, packed with 5% OV-1 on chromosorb WHP (80 - 100) mesh | | |  |  |
| 4.1.2 | | Length: 180 cm | | |  |  |
| 4.1.3 | | I.D.: 1/8" or 2 mm | | |  |  |
| **4.2 Gas** | | | | |  |  |
| 4.2.1 | Carrier:Nitrogen: 35 ml/min | | | |  |  |
| 4.2.2 | Hydrogen: 45 ml/min | | | |  |  |
| 4.2.3 | Air: 450 ml/min | | | |  |  |
| **4.3 Temperature** | | | | |  |  |
| 4.3.1 | Oven: 1950C | | | |  |  |
| 4.3.2 | Injecter: 2300C | | | |  |  |
| 4.3.3 | Detector: 2600C | | | |  |  |
| **4.4 Injection volume**: 2 µl | | | | |  |  |
| **4.5 Range**: 1 | | | | |  |  |
|  | **4.6 Attenuation**: -5 | | | | |  |  |
| 5. | **Results** | | | | |  | |
| Sample chromatogram no. | | | | |  | |
| Standard chromatogram no. | | | | |  | |

**6. Calculation:**

A1 x A’IS’2 x M1

Allethrin content, % by mass = ------------------------ x P

A’IS’1 x A2 x M2

**Where,**

A1 = Peak area of allethrin in the sample solution

A’IS’1 = Peak area of internal standard in the sample solution

A’IS’2 = Peak area of internal standard in the standard solution

A2 = Peak area of allethrin in the standard solution

M1 = Mass in ‘g’ of standard allethrin in the standard solution

M2 = Mass in ‘g’ of allethrin sample taken for test

P = Percent purity of allethrin standard

**Result:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No.** | **Name of test** | **Result** | **Unit** | **Method of Analysis** |
| 1. | Active ingredient |  | % |  |
| Remark / Reference : | | | | |

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