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 mlvolumetric 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 |  |