|  |  |
| --- | --- |
| Sr. No. in Scope | NABL / NON NABL |

**Flow chart for analysis of Butachlor 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 solution** | |  |  |
| 3.1.1 | Weigh 0.5 g of Di Octyl Adipate (DOA) in a 50 mL volumetric flask | | g |  |
| 3.1.2 | *Note down the S.No. in balane log book* | |  |  |
| 3.1.3 | Dissolve and dilute up to the mark with Acetone. | |  |  |
| **3.2** | **Preparation of Standard solution** | |  |  |
| 3.2.1 | Purity of the standard | | % |  |
| 3.2.2 | Weigh 0.5 g a.i. of the standard in 50 mL volumetric flask | | g |  |
| 3.2.3 | *Note down the S.No. in balance log book* | |  |  |
| 3.2.4 | Dissolve the standard and make up to the mark with acetone (Stock A). | |  |  |
| 3.2.5 | Pipette out 1 mL of Stock A (3.2.4) . | |  |  |
| 3.2.6 | Add 1mL of internal standard solution (3.1.3) and shake well. | |  |  |
| 3.2.7 | Inject 2ul of solution prepared by mixing 1 mL of stock A (3.2.4) and  1 mL internal standard solution (3.1.3) | |  |  |
| **3.3** | **Preparation of Sample solution** | |  |  |
| 3.3.1. | Note down the percent active ingredient declared on the sample. | | % |  |
| 3.3.2 | Weigh 0.5 g a.i. of the sample in a 50 mL volumetric flask. | | g |  |
| 3.3.3 | *Note down the S.No. of balance log book* | |  |  |
| 3.3.4 | Dissolve the sample and make up to the mark with acetone (Stock B) | |  |  |
| 3.3.5. | Pipette out 1 mL of Stock B (3.3.4) . | |  |  |
| 3.3.6. | Add 1mL of internal standard solution (3.1.3) and shake well. | |  |  |
| 3.3.7. | Inject 2ul of solution prepared by mixing 1 mL of stock B (3.3.4) and 1 mL internal standard solution (3.1.3) | |  |  |
| 4. | **GC Parameters** | |  |  |
| 4.1 | **Column :**  10 % DC-200 on Chromosorb WHP (80-100) mesh | |  |  |
| 4.1.1 | Length: 2 m | |  |  |
| 4.1.2 | I.D: 3 mm | |  |  |
| **4.2** | **Gas Flow:** | |  |  |
| 4.2.1 | Carrier:Nitrogen: 40 mL/min | |  |  |
| 4.2.2 | Hydrogen: 45 mL/min | |  |  |
| 4.2.3 | Air: 450 mL/min | |  |  |
| **4.3** | **Temperature** | |  |  |
| 4.3.1 | Oven: 240°C | |  |  |
| 4.3.2 | Injector: 270°C | |  |  |
| 4.3.3 | Detector: 270°C | |  |  |
| **4.4** | **Injection Volume**: 2 µl | |  |  |
| 5. | **Result** | |  |  |
|  | Sample chromatogram no. | |  |  |
|  | Standard chromatogram no. | |  |  |

**6. CALCULATION:**

|  |  |
| --- | --- |
| Butachlor content, % by mass =  A1 x A’IS’2 x M2  ---------------------- x P  A2 X A’IS’1 X M1 | **Where,**  A1 = Peak area of Butachlor 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 Butachlor in the standard solution  M1 = Mass in ’g’ of sample taken for test  M2 = Mass in ’g’ of Butachlor standard  P = Percent purity of Butachlor standard |

**Result:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S1.No.** | **Name of test** | | **Result** | | **Unit** | **Method of Analysis** |
| 1. | Active ingredient | |  | | % | IS: 9355: 1980 ( Reaffirmed 2007 ) |
| Remark / Reference : | | | | | | |
| Analyzed by | | Name | |  | | |
| Dated signature | |  | | |
| Checked by | | Name | |  | | |
| Dated signature | |  | | |