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

**Flow chart for analysis of Cypermethrin in formulation sample**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **S.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 2.0 g of Di-cyclohexyl Phthalate (DCP) in 100 ml volumetric flask | g |  |
| 3.1.2 | *Note down the S.No. of balance log book* |  |  |
| 3.1.3 | Dissolve and dilute up to the mark with toluene |  |  |
| **3.2** | **Preparation of Standard Solution** | | |
| 3.2.1 | Purity of standard | % |  |
| 3.2.2 | Weigh 0.375 g a.i. of the standard in a 25 ml volumetric flask | g |  |
| 3.2.3 | *Note down the S.No. of balance log book* |  |  |
| 3.2.4 | Add 10 ml of internal standard solution (3.1.3) | ml |  |
| 3.2.5 | Dilute up to the mark with toluene |  |  |
| **3.3** | **Preparation of Sample Solution** | | |
| 3.3.1 | Note down the percent active ingredient content declared on the sample | % |  |
| 3.3.2 | Weigh sample so as to contain 0.375 g a.i. in a 25 ml volumetric flask | g |  |
| 3.3.3 | *Note down the S.No. of balance log book* |  |  |
| 3.3.4 | Add 10 ml of internal standard solution (3.1.3) | ml |  |
| 3.3.5 | Dilute up to the mark with toluene |  |  |
| **4.** | **GC Parameters** | | |
| **4.1** | **Column:** Packed with 3 % Dexil 300 on Chromosorb WHP  (100 - 120) mesh |  |  |
| 4.1.1 | **Length x I.D:** 90 cm x 3 mm |  |  |
| **4.2** | **Gas** |  |  |
| 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**: 1 µl |  |  |
| **5.** | **Result** | | |
| Sample chromatogram no. |  |  |
| Standard chromatogram no. |  |  |

**6. CALCULATION:**

A1 x A’IS’2 x M1

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

A’IS’1 x A2 x M2

**Where,**

A1 = Peak area of cypermethrin 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 cypermethrin in the standard solution

M1 = Mass in ’g’ of standard cypermethrin in the standard solution

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

P = Percent purity of cypermethrin standard

**Result:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SI.No.** | **Name of test** | **Result** | **Unit** | **Method of Analysis** |
| 1. | Active ingredient |  | % | 12015 - 1987  (Reaffirmed 2002) |
| Remark / Reference : | | | | |

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