 FC-PF-227

PESTICIDE FORMULATION & RESIDUE ANALYTICAL CENTRE, PMD, NIPHM, HYDERABAD

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		

Name of the Laboratory :	**Pesticide Formulation & Residue Analytical Centre, PMD, NIPHM, Hyderabad**				
Document No.	:	FC-PF-227	Document Name	:	Flow chart for analysis of Allethrin content, % by mass
Revision No.	:	00	Issue Date	:	1.04.2012
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Prepared By	Checked By	Approved & Issued By
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	4.2.3	Air: 450 ml/min		
	4.3 Temperature			
	4.3.1	Oven: 195^{0}C		
	4.3.2	Injecter: 230^{0}C		
	4.3.3	Detector: 260^{0}C		
	4.4 Injection volume:	2 µl		
	4.5 Range:	1		
	4.6 Attenuation:	-5		
5.	**Results**			
	Sample chromatogram no.			
	Standard chromatogram no.			

6. Calculation:

$$\text{Allethrin content, \% by mass} = \frac{A_1 \times A'IS'_2 \times M_1}{A'IS'_1 \times A_2 \times M_2} \times P$$

Where,

A_1 = 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
A_2 = Peak area of allethrin in the standard solution
M_1 = Mass in 'g' of standard allethrin in the standard solution
M_2 = 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	

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