

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

Sr. No. in Scope

NABL / NON NABL

Flow Chart for Analysis of Thiamethoxam Content in Formulation Sample

Date of Analysis

S. No.	Step	Execution		Executed by
1.	Sample No.			
2.	Name of Sample			
3.	Sample Description			
4.	Procedure	R1	R2	
4.1.	Preparation of Mobile Phase			
4.1.1	First prepare 1% Ortho phosphoric acid in water and pass through the membrane filter under vacuum.			
4.1.2	Mix Methanol and 1% Ortho phosphoric acid in water (4.1.1) in the proportion of 25:75 (v/v).			
4.1.3	Homogenize the mixture and keep for sonication under ultrasonic bath.			
4.1.4	Allow to attain room temperature.			
4.2	Preparation of Standard solution			
4.2.1	Note the purity of the standard	%	%	
4.2.2	Weigh 50 mg a.i. of Standard into a 100 ml volumetric flask	mg	mg	
4.2.3	<i>Note the serial No. of the balance log book</i>			
4.2.4	Dissolve and dilute up to the mark with Mobile phase (4.1.4) [Stock A]			
4.2.5	Pipette out 5 mL of Stock A (4.2.4) into a 10 mL volumetric flask	ml	ml	
4.2.6	Dilute up to the mark with Mobile phase (4.1.4).			
4.3	Preparation of Sample solution			
4.3.1	Note the percent active ingredient content declared on sample	%	%	
4.3.2	Weigh accurately a quantity of Sample to contain 50 mg a. i. into a 100 ml volumetric flask	mg	mg	
4.3.3	<i>Note the serial No. of the balance log book</i>			
4.3.4	Dissolve and dilute up to the mark with Mobile phase (4.1.4) [Stock B]			
4.3.5	Pipette out 5 mL of Stock B (4.3.4) into a 10 mL volumetric flask	ml		
4.3.6	Dilute up to the mark with Mobile phase (4.1.4).			
4.3.7	Filter the sample solution through 0.45µ membrane filter			
5.	HPLC Parameters			
5.1	Column			
5.1.1	C ₁₈ , Particle Size: 5µ			
5.1.2	Length: 250 mm			
5.1.3	I.D.: 4.6 mm			
5.2	Mobile Phase			
5.2.1	Methanol and 1% Ortho phosphoric acid in water (25:75)			
5.2.2	Flow Rate : 1 ml/min			
5.3	Detector : UV			
5.4	Wave Length : 254 nm			

Name of the Laboratory : Pesticide Formulation & Residue Analytical Centre, PMD, NIPHM, Hyderabad			
Document No.	:	FC-PF-225	Document Name : Flow chart for analysis of Thiamethoxam content, % by mass
Revision No.	:	01	Issue Date : 03/02/2014
Revision Date	:	10/07/2014	Next Revision Date : 10/07/2016
Prepared By		Checked By	Approved
Mrs. T. Sridevi (Assistant Scientific Officer)		Dr. Nirmali Saikia (Technical Manager)	Dr. Abhay Ekbote (Director PM)
			Issued By
			Mr. C. V. Rao (Quality Manager)

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5.5	Injection Volume : 20 µl		
6.	Result		
	Sample chromatogram no.		
	Standard chromatogram no.		

7. Calculation:

$\text{Thiamethoxam content, \% by mass} = \frac{A_2 \times M_1}{A_1 \times M_2} \times P$	<p>Where,</p> <p>M₁ = Mass in 'mg' of Thiamethoxam standard M₂ = Mass in 'mg' of sample taken for test A₁ = Peak area of Thiamethoxam in the standard solution A₂ = Peak area of Thiamethoxam in the sample solution P = Percent purity of Thiamethoxam standard</p>
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Result:

Sl. No.	Name of test	Result	Unit	Method of Analysis
1.	Active ingredient		%	In house method

Remark / Reference :

Analyzed by	Name	
	Dated signature	
Checked by	Name	
	Dated signature	

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