

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

Sr. No. in Scope

NABL / NON NABL

Flow chart for analysis of Mancozeb in formulation

		Date of Analysis	
Sl. No.	Step	Execution	Executed By
1.	Sample No.		
2.	Name of Sample		
3.	KOH in methanol (2N):		
	Weigh 11.2 g of Potassium Hydroxide pellets and dissolve in about 10 mL water and 90 mL of methanol to prepare 2 N solution.		
4.	1.1N Sulphuric acid:		
3.1	Pipette out 25 mL of Lead Acetate solution into the first absorber bottle and 50 mL and 25 mL of 2N Potassium hydroxide solution into the second and third absorption bottles respectively.	g	
3.2	Take 100 mL of 1.1 N Sulphuric acid in the reaction kettle. (Sufficient quantity to that the 'T' joint tube dips in H ₂ SO ₄).		
	Assemble the apparatus and connect the assembly to the vacuum line. Connect the opening of the reaction flask to the N ₂ gas cylinder and pass the N ₂ gas slowly and adjust the rate of bubbling in the absorbers to 2-6 bubbles/sec.		
	Boil the contents of the reaction kettle. Weigh accurately 0.2-0.3 g of a.i. (0.266- 0.4 g, 75 % WP sample) and transfer it to reaction flask at once.		
	Keep the first absorber with lead acetate solution immersed in a beaker filled with water kept on a hot plate and maintain the temperature of the lead acetate solution at 60°C.		
	Keep the temperature of KOH solution in the second and third absorber bottles at 25±2°C throughout the experiment by keeping the absorber bottles in a beaker filled with ice cubes.		
	Continue the heating and bubbling for exactly 1 hr and 45 minutes.		
	After digestion is completed, disconnect the apparatus and quantitatively transfer the potassium hydroxide solution in the two absorption bottles to a 500 mL conical flask. Rinse the absorption bottles and connecting tubes with 250 ml of distilled water.		
	Add phenolphthalein indicator to the absorber bottles and observe for the appearance of pink color and ensure that KOH has been quantitatively transferred to the conical flask.		
	Add 30 per cent acetic acid to the conical flask until the solution is just neutral (pink color just disappears)		

Name of the Laboratory : Pesticide Formulation & Residue Analytical Centre, PMD, NIPHM, Hyderabad			
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Revision No.	: 00	Issue Date	: 01/06/2013
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Prepared By		Checked By	
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	Cool, add freshly prepared starch solution (1%) and titrate immediately with 0.1 N Iodine solution till the color changes from colorless to blue		
	Titre value		

6. Calculation:

$$\text{Mancozeb content \% by mass} = \frac{13.551 \times N \times V}{M}$$

Result:

	Dated signature	
Checked by	Name	
	Dated signature	

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Analyzed by	Name	
	Dated signature	
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