

CERTIFICATE OF ANALYSIS

Product : Permethrin	COA No. : 1361/14
Batch No. : 144003188	Report No. : FP-513/14
Mfg. Date : Oct. 2014	Mfg. Lic. No. : KD-324
Exp. Date : Sep. 2019	Dispatch Qty : 100 Kg

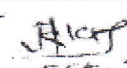
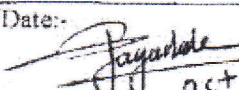
TEST	OBSERVATION	LIMIT
Characters (Description & Solubility)	Yellow brownish colour liquid which may solidify on standing or at lower temperature. Soluble in Alcohol, Acetone, ether & hydrocarbons (Toluene)	Yellow brownish colour liquid which may solidify on standing or at lower temperature. Soluble in Alcohol, Acetone, ether & hydrocarbons (Toluene)
Identification	A) By IR The IR spectrum of the sample is concordant with the spectrum obtained with Permethrin standard.	A) By IR The IR spectrum of the sample is concordant with the spectrum obtained with Permethrin standard
	B) By HPLC Retention time of Permethrin test sample matches with retention time of permethrin standard in the assay test.	B) By HPLC Retention time of Permethrin test sample matches with retention time of permethrin standard in the assay test.
Loss On Drying	0.24 %	Not more than 2.0 %
Sulphated Ash	0.05 %	Not more than 0.2 %
Assay by HPLC (on dried basis)	99.48 %	98.0 % to 101 %
Cis Isomer	24.95 %	23.0 % to 27.0 %
Related Substance by HPLC	M P B Alcohol : 0.11 % M P B Aldehyde : 0.02 % D. V. Acid Ester (Cis+Trans): 0.10 % Unknown Impurity : 0.19 % Total impurity : 0.28 %	Not more than 0.15 % Not more than 0.15 % Not more than 0.15 % Not more than 0.30 % Not more than 2.0 %
Residual Solvents	Toluene - 227 ppm *Benzene - BDL	NMT 890 ppm NMT 2 ppm

BDL: Below Detection Level NMT- Not more than

*Benzene is not used in process, but tested due to the use of Toluene.

Note:- Before sampling stir well & warm up to 40 °C Permethrin solidifies below 35 °C. In case of solidification please warm up to 40 to 45 °C to get liquid (Before use). This does not affect the quality.

Permethrin is semi solid material melting point test is not applicable.

Remarks : Passes As Per Specification	
Prepared By/Date:-  Oct 28, 2014	Approved By/Date:-  Oct 28, 2014
Mr. V. K. Mhatre (QA Manager)	Mr. S. B. Jagadale (QA Head)