

CERTIFICATE OF ANALYSIS

Sigma-Aldrich Laborchemikalien GmbH D-30918 Seelze
Telefon: +49 5137 8238-150

Seelze, 16.08.2011/226027/11/17454

Order-No.:

Customer-No.:

Order-Code:

Quantity:

Production Date: 25.Jul.2011

Expiry Date: 25.Jul.2016

Article/Product: 45614

Batch : SZBB206XV

Permethrin (mixt.of cis and trans isomers) PESTANAL®

Reference Material (RM)**1. General Information**

Formula: C₂₁H₂₀Cl₂O₃

CAS-No.: [52645-53-1]

Usage : Insecticide

Molar mass: 391.29 g/Mole

Recomm. storage temp.: roomtemp.

The estimated uncertainty of a single measurement of the assay can be expected to be 1 % relative (confidence level = 95%, n= 6) whereby the assay measurements are calculated by 100% minus found impurities.

2. Batch Analysis

Identity (NMR)

ass.of cis/trans-isom. (HPLC)

Assay of cis-isomer (HPLC)

Assay of trans-isom. (HPLC)

Water (Karl Fischer)

Date of Analysis

complying

98.3 %

26.7 area %

71.6 area %

0.12 %

15.Aug.2011

3. Advice and Remarks

- The minimum shelf life is based on the current knowledge and holds only for proper storage conditions in the originally closed flasks/ packages.
- Whenever the container is opened for removal of aliquot portions of the substance, the person handling the substance must assure, that the integrity of the substance is maintained and proper records of all its handlings are kept. Special care has to be taken to avoid any contamination or adulteration of the substance.
- We herewith confirm that the delivery is effected according to the technical delivery conditions agreed.
- Particular properties of the products or the suitability for a particular area of application are not assured.
- We guarantee a proper quality within our General Conditions of Sales.

Sigma-Aldrich Laborchemikalien GmbH
Quality Management SA-LC

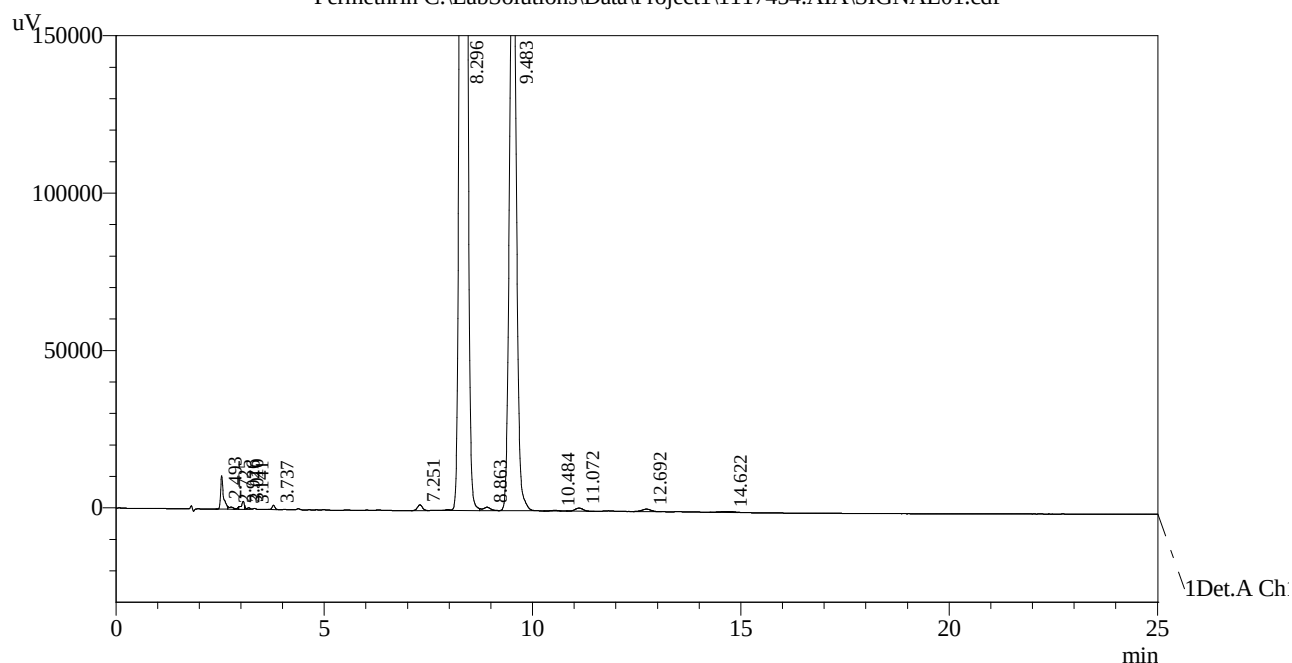
HPLC-Method

Article : Permethrin
Article-No : 45614
Batch : SZBB206XV

Column : L=250mm, ID=4,6mm; Supelcosil LC-18 5µm
Eluent : 80 % Acetonitrile
20 % Water
Flow : 1,4ml/min
Detector : UV-225nm
Injection-Volume : 10µl
Sample-Preparation : 0,3mg/ml
Linearity : checked
Evaluation : Normalisation (uncorrected)
Operator : Schowe

Chromatogram

Permethrin C:\LabSolutions\Data\Project1\1117454.AIA\SIGNAL01.cdf



1 Det.A Ch1 /

PeakTable

Ch1

Peak#	Ret. Time	Area	Area %
1	2.493	52	0.608
2	2.725	4	0.050
3	2.926	4	0.045
4	3.010	11	0.131
5	3.141	3	0.029
6	3.737	6	0.074
7	7.251	15	0.176
8	8.296	6130	71.635
9	8.863	13	0.150
10	9.483	2285	26.705
11	10.484	2	0.025
12	11.072	13	0.151
13	12.692	12	0.138
14	14.622	7	0.082
Total		8557	100.000