

Reference Material^{1,2}

This certificate is designed in accordance with *ISO 17034* and *ISO Guide 31*. This reference material (RM) was designed, produced¹ and verified² in accordance with *ISO/IEC 17025*, *ISO 17034* and a registered quality management system *ISO 9001*.^{1,2}

Product Name 87 Pesticide Mix in Toluene, 2.5 µg/mL, 5 µg/mL, 7.5 µg/mL, 10 µg/mL, 15 µg/mL, 20 µg/mL, 60 µg/mL, 80 µg/mL^{1,2}

Part Number^{1,2} B64127^{1,2}

Lot Number^{1,2} J01HB174444^{1,2}

Expiry Date^{1,2} 2023-May-26^{1,2}

Storage^{1,2} (-18 ± 5) °C, Keep in the shade^{1,2}

CERTIFIED

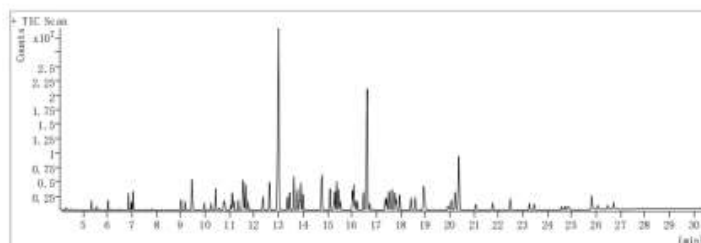
Component No.	Peak Sequence	Component	CAS No.	Concentration (µg/mL)	Uncertainty (%)
1	1	Allidochlor	93-71-0	5	5
2	2	Dichlorimid	37764-25-3	5	5
3	3	Chlormephos	24934-91-6	5	5
4	4	Propham	122-42-9	2.5	5
5	5	Etridiazole	2593-15-9	7.5	5
6	6	Diphenylamine	122-39-4	2.5	5
7	7	Cycloate	1134-23-2	2.5	5
8	8	Ethalfuralin	55283-68-6	10	5
9	9	Atrazine-desethyl	6190-65-4	2.5	5
10	10	Chlordimeform	6164-98-3	2.5	5
11	11	Phorate	298-02-2	2.5	5
12	12	Thiometon	640-15-3	2.5	5
13	13	Dimethoate	60-51-5	10	5
14	14	Clomazone	81777-89-1	2.5	5
15	15	β-HCH	319-85-7	2.5	5
16	16	Propetamphos	31218-83-4	5	5
17	17	Pentachloronitrobenzene	82-68-8	5	5
18	18	Propyzamide	23950-58-5	2.5	5
19	19	Fonofos	944-22-9	2.5	5
20	20	Diazinon	333-41-5	2.5	5
21	21	Secbumeton	26259-45-0	2.5	5
22	22	Dinitramine	29091-05-2	10	5
23	23	α-HCH	319-86-8	5	5
24	24	Zectran	315-18-4	7.5	5
25	25	Etrimfos	38260-54-7	2.5	5
26	26	Cyprazin	22936-86-3	2.5	5
27	27	Dichlofenthion	97-17-6	2.5	5
28	28	Vinclozolin	50471-44-8	2.5	5
29	29	Parathion-methyl	298-00-0	10	5
30	30	Paraoxon-ethyl	311-45-5	80	4
31	31	Prometryn	7287-19-6	2.5	5
32	32	Metalaxyl	57837-19-1	7.5	5
33	33	Fenchlorphos	299-84-3	5	5
34	34	Fenitrothion	122-14-5	5	5
35	35	Linuron	330-55-2	10	5
36	36	Malathion	121-75-5	10	5
37	37	Anthraquinone	84-65-1	2.5	5

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32	32	Metalaxyl	57837-19-1	7.5	5
33	33	Fenchlorphos	299-84-3	5	5
34	34	Fenitrothion	122-14-5	5	5
35	35	Linuron	330-55-2	10	5
36	36	Malathion	121-75-5	10	5
37	37	Anthraquinone	84-65-1	2.5	5
38	38	Aldrin	309-00-2	5	5
39	39	Fenthion	55-38-9	2.5	5
40	40	Chlorpyrifos	2921-88-2	2.5	5
41	41	Cyanazine	21725-46-2	7.5	5
42	42	Triadimefon	43121-43-3	5	5
43	43	Metazachlor	67129-08-2	7.5	5
44	44	Pendimethalin	40487-42-1	10	5
45	45	Quinalphos	13593-03-8	2.5	5
46	46	Phenthoate	2597-03-7	5	5
47	47	Procymidone	32809-16-8	2.5	5
48	48	Chlorbenside	103-17-3	5	5
49	49	Chlorfurenol-methyl	2536-31-4	7.5	5
50	50	Methidathion	950-37-8	5	5
51	51	trans-Chlordane	5103-74-2	2.5	5
52	52	Bromophos-ethyl	4824-78-6	2.5	5
53	53	Fenamiphos	22224-92-6	7.5	5
54	54	Napropamide	15299-99-7	7.5	5
55	55	Flutolanil	66332-96-5	2.5	5
56	56	Prothiofos	34643-46-4	2.5	5
57	57	Dieldrin	60-57-1	5	5
58	58	Oxadiazon	19666-30-9	2.5	5
59	59	Carboxin	5234-68-4	60	4
60	60	Myclobutanil	88671-89-0	2.5	5
61	61	Bupirimate	41483-43-6	2.5	5
62	62	Fensulfothion	115-90-2	5	5
63	63	p,p'-DDD	72-54-8	2.5	5
64	64	Etaconazole	60207-93-4	7.5	5
65	65	Oxadixyl	77732-09-3	2.5	5
66	66	Ethion	563-12-2	5	5
67	67	Benodanil	15310-01-7	7.5	5
68	68	Tetrasul	2227-13-6	2.5	5
69	69	Sulprofos	35400-43-2	5	5
70	70	Propiconazole(Isomers) ¹	60207-90-1	7.5	5
71	71	Norflurazon	27314-13-2	2.5	5
72	72	Tebuconazol	107534-96-3	7.5	5
73	73	Nuarimol	63284-71-9	5	5
74	74	Diclofop-methyl	51338-27-3	2.5	5
75	75	Pyridaphenthion	119-12-0	2.5	5
76	76	Carbosulfan	55285-14-8	7.5	5

77	77	Tetramethrin	7696-12-0	5	5
78	78	Bifenthrin	82657-04-3	2.5	5
79	79	Methoxychlor	72-43-5	20	5
80	80	Tetradifon	116-29-0	2.5	5
81	81	Mirex	2385-85-5	2.5	5
82	82	Pyrazophos	13457-18-6	5	5
83	83	cis-Permethrin	61949-76-6	2.5	5
84	84	trans-Permethrin	61949-77-7	2.5	5
85	85	Cypermethrin(Isomers) ²	52315-07-8	7.5	5
86	86	Fenvalerate(Isomers) ³	51630-58-1	10	5
87	87	Deltamethrin(Isomers) ⁴	52918-63-5	15	5

CERTIFICATE OF ANALYSIS

CHROMATOGRAM



- **Instrument**
GC/MS
- **Column**
HP-5MS(30m×0.25mm×0.25μm)
- **Injection Temp**
250°C
- **Method Details**
60°C, 40°C/min → 130°C(1min),
12°C/min → 180°C(1min), 7°C/min →
240°C, 5°C/min → 250°C(2min), 10°C
/min → 320°C(3min)

- Note:**
1. Propiconazole (CAS No. : 60207-90-1) has two peaks, the retention times are 18.408min and 18.597min.
 2. Cypermethrin (CAS No. : 52315-07-8) has four peaks, the retention times are 24.596min, 24.729min, 24.829min and 24.885min.
 3. Fenvalerate (CAS No. : 51630-58-1) has two peaks, the retention times are 25.818min and 26.074min.
 4. Deltamethrin (CAS No. : 52918-63-5) has two peaks, the retention times are 26.474min and 26.718min.

Intended Use

This RM is intended for use in a laboratory as a calibration and quality control standard or in method development for analytical techniques.

Uncertainty

The certified value(s) and uncertainty(ies) are determined in accordance with **ISO 17034** with an 95% confidence level ($k=2$). Uncertainty is based on the Total Combined Uncertainty, including uncertainties of preparation, purity of neat materials, homogeneity, stability testing.

Traceability

The balances used for gravimetric measurements are calibrated with weights traceable to the national standards. The calibration of the balances is verified annually by an external accredited calibration service. This analysis method has been verified using an approach consistent with **ISO 17034:2016** & **ISO 17025:2017**.

Homogeneity

Random replicate samples of the final packaged RM have been analysed to prove homogeneity consistent with ISO 17034.

Storage

The RM should be stored in the original sealed bottle at the indicated temperature.

CERTIFICATE ON		QC SIGNATURE
2022-May-27		RM Release

