

**NOTE BY THE DIRECTOR-GENERAL****LISTS OF NEW VALIDATED DATA OF SCHEDULED CHEMICALS
FOR APPROVAL BY THE EXECUTIVE COUNCIL
FOR INCLUSION IN THE OPCW CENTRAL ANALYTICAL DATABASE**

1. In accordance with a decision by the Executive Council (hereinafter “the Council”) at its Fourth Session (EC-IV/DEC.2, dated 5 September 1997), “Proposed Mechanism for Updating the OPCW Central Analytical Database”, which was subsequently adopted by the Conference of the States Parties at its Second Session (subparagraph 11.2(c) of C-II/8, dated 5 December 1997), the Director-General established a Validation Group (hereinafter “the Group”) to evaluate new data to be proposed for inclusion in that database. The Group met for the thirty-eighth time on 24 and 25 September 2013 and for the thirty-ninth time on 1 and 2 April 2014, and submitted lists of validated analytical data to the Director-General for appropriate action.
2. In accordance with the aforementioned mechanism, lists of new validated data proposed for inclusion will be submitted to the members of the Council and distributed to all States Parties no later than 30 days before the opening of the Seventy-Sixth Session, during which the Council will be requested to consider the data. The Technical Secretariat (hereinafter “the Secretariat”) hereby submits to the members of the Council and distributes to all States Parties, in the annex to this Note, lists of new validated analytical data proposed for inclusion in the OPCW Central Analytical Database (OCAD).
3. The Verification Division will, upon request, make available to States Parties copies of the new validated mass spectrometry (MS), gas chromatography (retention index) (GC(RI)), and infrared (IR) spectroscopy data listed in the annex. In accordance with the mechanism referred to in paragraph 1 above, any State Party that has concerns about the proposed inclusion in the OCAD of any of this data should make them known to the Secretariat before the Seventy-Sixth Session of the Council.

Annex (English only): Lists of New Validated Data of Scheduled Chemicals



Annex

LISTS OF NEW VALIDATED DATA OF SCHEDULED CHEMICALS

TABLE 1: LIST OF APPROVED MS DATA OF SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule
04-2-0513r	2,2-Dimethylpropyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0514r	Hexyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0517r	Heptyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0519r	1-Isopropyl-2-methylpropyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0520r	Octyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
16-2-0174r	Ethyl 2-methoxy-1-methylethyl methylphosphonate	2.B.04
16-2-0176r	Ethyl 2-methoxy-1-methylethyl ethylphosphonate	2.B.04
16-2-0177r	Ethyl 2-methoxy-1-methylethyl propylphosphonate	2.B.04
16-2-0178br	Isopropyl 2-methoxy-1-methylethyl methylphosphonate	2.B.04
16-2-0179ar	Isopropyl 2-methoxy-1-methylethyl ethylphosphonate	2.B.04
16-2-0179br	Isopropyl 2-methoxy-1-methylethyl ethylphosphonate	2.B.04
16-2-0187ar	1,2-Dimethylpropyl 2-methoxyethyl propylphosphonate	2.B.04
16-2-0189ar	Cyclopentyl 2-methoxy-1-methylethyl propylphosphonate	2.B.04
16-2-0189br	Cyclopentyl 2-methoxy-1-methylethyl propylphosphonate	2.B.04
16-2-0192r	2-Isopropoxyethyl methyl ethylphosphonate	2.B.04
16-2-0194r	2-Isopropoxyethyl methyl propylphosphonate	2.B.04
16-2-0196r	Ethyl 2-isopropoxyethyl methylphosphonate	2.B.04
16-2-0197r	Ethyl 2-isopropoxyethyl ethylphosphonate	2.B.04
16-2-0198r	Ethyl 2-isopropoxyethyl propylphosphonate	2.B.04
16-2-0199r	2-Isopropoxyethyl isopropyl methylphosphonate	2.B.04
16-2-0202r	2-Isopropoxyethyl propyl methylphosphonate	2.B.04
16-2-0203r	2-Isopropoxyethyl propyl ethylphosphonate	2.B.04
16-2-0204r	2-Isopropoxyethyl propyl propylphosphonate	2.B.04
28-2-0100	N,N-Dimethyl-P-methylphosphonamidothionochloridate	2.B.04
28-2-0101	Methyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0102	Methyl-d3 N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0103	Ethyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0105	Propyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0106	Isopropyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0107	Butyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0108	Pentyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0109	Hexyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0110b	1-Methylbutyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0112	Cyclohexyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0113	Phenyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0114	4-Methylphenyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04
28-2-0115	S-Ethyl N,N-dimethyl-P-methylphosphonamidothiolothonate	2.B.04
28-2-0116	S-Propyl N,N-dimethyl-P-methylphosphonamidothiolothonate	2.B.04

OPCW Code	Chemical Name	Schedule
28-2-0117	S-Isopropyl N,N-dimethyl-P-methylphosphonamidothiolothionate	2.B.04
28-2-0118	S-Butyl N,N-dimethyl-P-methylphosphonamidothiolothionate	2.B.04
28-2-0119	S-Pentyl N,N-dimethyl-P-methylphosphonamidothiolothionate	2.B.04
28-2-0121a	N,N-Dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate-P'-chloridate	2.B.04
28-2-0121b	N,N-Dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate-P'-chloridate	2.B.04
28-2-0122a	N,N,N',N'-Tetramethyl-P,P'-dimethylpyrophosphonodiamidodithionate	2.B.04
28-2-0122b	N,N,N',N'-Tetramethyl-P,P'-dimethylpyrophosphonodiamidodithionate	2.B.04
28-2-0123	S-Butyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate-P'-thiolate	2.B.04
28-2-0124	S-Pentyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate-P'-thiolate	2.B.04
28-2-0125	Hexyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04
28-2-0126a	Phenyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04
28-2-0126b	Phenyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04
28-2-0127a	4-Methylphenyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04
28-2-0127b	4-Methylphenyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04
28-2-0128a	Diphenyl dimethylpyrophosphonodithionate	2.B.04
28-2-0128b	Diphenyl dimethylpyrophosphonodithionate	2.B.04
28-2-0129a	Bis(4-methylphenyl) dimethylpyrophosphonodithionate	2.B.04
28-2-0129b	Bis(4-methylphenyl) dimethylpyrophosphonodithionate	2.B.04
28-2-0130	Dicyclohexyl dimethylpyrophosphonodithionate	2.B.04
28-2-0131	Dipentyl dimethylpyrophosphonodithionate	2.B.04
28-2-0132	S-Propyl methylphosphonothiolothionochloridate	2.B.04
28-2-0133	O-Butyl S-ethyl methylphosphonothiolothionate	2.B.04
28-2-0134	S-Ethyl O-pentyl methylphosphonothiolothionate	2.B.04
28-2-0135	O-sec-Butyl S-propyl methylphosphonothiolothionate	2.B.04
28-2-0136	O-Pentyl S-propyl methylphosphonothiolothionate	2.B.04
28-2-0137	Dipentyl methylphosphonodithiolothionate	2.B.04
28-2-0138	S-Ethyl O-pentyl P,P'-dimethyldiphosphonodithiono-P-thiolate	2.B.04
28-2-0139	Bis(S-propyl) dimethylpyrophosphonothiolodithionate	2.B.04
28-2-0140	Bis(S-butyl) dimethylpyrophosphonothiolodithionate	2.B.04
28-2-0141	Bis(S-pentyl) dimethylpyrophosphonothiolodithionate	2.B.04
28-2-0142a	O-sec-Butyl S-propyl P,P'-dimethyldiphosphonodithiono-P'-thiolate	2.B.04
28-2-0144	O-Butyl S-ethyl methylphosphonothiolate	2.B.04
28-2-0145	S-Ethyl O-pentyl methylphosphonothiolate	2.B.04

OPCW Code	Chemical Name	Schedule
28-2-0146a	O-sec-Butyl S-ethyl methylphosphonothiolate	2.B.04
28-2-0146b	O-sec-Butyl S-ethyl methylphosphonothiolate	2.B.04
28-2-0147a	S-Ethyl O-1,2-dimethylpropyl methylphosphonothiolate	2.B.04
28-2-0147b	S-Ethyl O-1,2-dimethylpropyl methylphosphonothiolate	2.B.04
28-2-0148	S-Ethyl O-2-methylbutyl methylphosphonothiolate	2.B.04
28-2-0149	O-Butyl S-propyl methylphosphonothiolate	2.B.04
28-2-0150	O-Butyl S-isopropyl methylphosphonothiolate	2.B.04
28-2-0151a	O-sec-Butyl S-isopropyl methylphosphonothiolate	2.B.04
28-2-0151b	O-sec-Butyl S-isopropyl methylphosphonothiolate	2.B.04
28-2-0152	Bis(methyl-d3) methylphosphonate	2.B.04
28-2-0153	Dipentyl dimethylpyrophosphonate	2.B.04
28-2-0154	Dihexyl dimethylpyrophosphonate	2.B.04
28-2-0156	Bis(2-methylbutyl) dimethylpyrophosphonate	2.B.04
28-2-0157a	Bis(1-methylbutyl) dimethylpyrophosphonate	2.B.04
28-2-0157b	Bis(1-methylbutyl) dimethylpyrophosphonate	2.B.04
28-2-0157c	Bis(1-methylbutyl) dimethylpyrophosphonate	2.B.04
28-2-0157d	Bis(1-methylbutyl) dimethylpyrophosphonate	2.B.04
28-2-0157e	Bis(1-methylbutyl) dimethylpyrophosphonate	2.B.04
28-2-0158a	Bis(1,2-dimethylpropyl) dimethylpyrophosphonate	2.B.04
28-2-0158b	Bis(1,2-dimethylpropyl) dimethylpyrophosphonate	2.B.04
28-2-0158c	Bis(1,2-dimethylpropyl) dimethylpyrophosphonate	2.B.04
28-2-0158d	Bis(1,2-dimethylpropyl) dimethylpyrophosphonate	2.B.04
28-2-0158e	Bis(1,2-dimethylpropyl) dimethylpyrophosphonate	2.B.04
28-2-0159	N,N-Dimethyl-P-ethylphosphonamidothionochloridate	2.B.04
28-2-0160	Methyl N,N-dimethyl-P-ethylphosphonamidothionate	2.B.04
28-2-0162	Ethyl N,N-dimethyl-P-ethylphosphonamidothionate	2.B.04
28-2-0164	N,N,N',N'-Tetramethyl-P-ethylphosphonodiamidodithionate	2.B.04
28-2-0165a	N,N,N',N'-Tetramethyl-P,P'-diethylpyrophosphonodiamidodithionate	2.B.04
28-2-0165b	N,N,N',N'-Tetramethyl-P,P'-diethylpyrophosphonodiamidodithionate	2.B.04
28-2-0166b	Methyl N,N-dimethyl-P,P'-diethyldiphosphono-P-amidodithionate-P'-thionate	2.B.04
28-2-0167a	Ethyl N,N-dimethyl-P,P'-diethyldiphosphono-P-amidodithionate-P'-thionate	2.B.04
28-2-0168a	Ethyl-d5 N,N-dimethyl-P,P'-diethyldiphosphono-P-amidodithionate-P'-thionate	2.B.04
28-2-0168b	Ethyl-d5 N,N-dimethyl-P,P'-diethyldiphosphono-P-amidodithionate-P'-thionate	2.B.04
28-2-0169	O,S-Dimethyl ethylphosphonothiolothionate	2.B.04
28-2-0170	O,S-Bis(methyl-d3) ethylphosphonothiolothionate	2.B.04
28-2-0171	Dimethyl ethylphosphonodithiolothionate	2.B.04
28-2-0172	Bis(methyl-d3) ethylphosphonodithiolothionate	2.B.04
28-2-0173a	Methyl P,P'-diethyldiphosphonodithiono-P'-chloridate	2.B.04
28-2-0173b	Methyl P,P'-diethyldiphosphonodithiono-P'-chloridate	2.B.04
28-2-0174	O,S'-Dimethyl P,P'-diethyldiphosphono-P-thionate-P'-	2.B.04

OPCW Code	Chemical Name	Schedule
	thiolothionate	
28-2-0175	O,S'-Bis(methyl-d3) P,P'-diethyldiphosphono-P-thionate-P'-thiolothionate	2.B.04
28-2-0176	Bis(ethyl-d5) P,P'-diethylpyrophosphonodithionate	2.B.04
04-2-0464	3,5-Dimethylcyclohexyl S-2-diethylaminoethyl ethylphosphonothiolate	1.A.03
04-2-0515	1-Methylpentyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0516	2-Methylpentyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0518	1-Methylhexyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0552	2-Ethylhexyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0553	Nonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0554	1-Methyloctyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0555	Decyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-2-0556	1-Methylnonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
05-2-0178	3,5,5-Trimethylhexyl S-2-dimethylaminoethyl propylphosphonothiolate	1.A.03
07-2-2051	2-Diisopropylaminoethyl ethylphosphonofluoridate	2.B.04
08-2-0118	O-Methyl S-pentyl methylphosphonothiolate	2.B.04
14-2-0035	4-tert-Butylcyclohexyl S-2-dimethylaminoethyl methylphosphonothiolate	1.A.03
17-2-0371	2,4-Dimethylhexahydro-1,3,5,2,4-benzotrioxadiphosphopine-2,4-disulfide	2.B.04
17-2-0372	2,4-Dimethylhexahydro-1,5,3,2,4-benzodioxathiadiphosphopine-2,4-disulfide	2.B.04
17-2-0373	2,4-Diethylhexahydro-1,3,5,2,4-benzotrioxadiphosphopine-2,4-disulfide	2.B.04
17-2-0374	6-(2-Chloroethyl)-2-propyl-1,3,6,2-dioxazaphosphocane-2-sulfide	2.B.04
17-2-0375	6-(2-Chloroethyl)-2-ethyl-1,3,6,2-dioxazaphosphocane-2-sulfide	2.B.04
17-2-0376	6-(2-Chloroethyl)-2-methyl-1,3,6,2-dioxazaphosphocane-2-sulfide	2.B.04
23-2-0001	2,4,6-Tripropyl-1,3,5,2,4,6-trioxatriphosphorinane-2,4,6-trioxide	2.B.04
28-2-0050	Phenyl N,N-dimethyl-P-methylphosphonamidate	2.B.04

TABLE 2: LIST OF APPROVED GC(RI) DATA

Note: A “1” under the “Column” heading of GC(RI) data means an HP5 or an SE54 column and a “2” means a DB-5MS column.

OPCW Code	Chemical Name	Schedule	Column	RI(a)	RI(b)	RI(c)	RI(d)	RI(e)
17-4-0158	(5-Ethyl-2-methyl-2-oxido-1,3,2-dioxaphosphan-5-yl)methyl methyl phosphonate	2.B.04	1	2061	2091			
28-4-0103	N,N-Dimethyl-P-methylphosphonamidochloridate	2.B.04	1	1170				
28-4-0104	Methyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1107				
28-4-0105	Methyl-d3 N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1112				
28-4-0106	Ethyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1164				
28-4-0107	Ethyl-d5 N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1166				
28-4-0108	Propyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1261				
28-4-0109	Isopropyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1215				
28-4-0110	Butyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1352				
28-4-0111	Pentyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1455				
28-4-0112	Hexyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1557				
28-4-0113	1-Methylbutyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1374	1378			
28-4-0114	Allyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1254				
28-4-0115	Cyclohexyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1594				
28-4-0116	Phenyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1639				
28-4-0117	4-Methylphenyl N,N-dimethyl-P-methylphosphonamidothionate	2.B.04	1	1759				
28-4-0118	S-Ethyl N,N-dimethyl-P-methylphosphonamidothiolothonate	2.B.04	1	1388				
28-4-0121	S-Butyl N,N-dimethyl-P-methylphosphonamidothiolothonate	2.B.04	1	1581				
28-4-0122	S-Pentyl N,N-dimethyl-P-methylphosphonamidothiolothonate	2.B.04	1	1685				
28-4-0123	N,N,N',N'-Tetramethyl-P-methylphosphonothiono diamide	2.B.04	1	1276				
28-4-0124	N,N-Dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate-P'-chloridate	2.B.04	1	1593	1620			
28-4-0125	N,N,N',N'-Tetramethyl-P,P'-dimethylpyrophosphondiamidodithionate	2.B.04	1	1749	1762			
28-4-0126	S-Butyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate-P'-thiolate	2.B.04	1	2072				

OPCW Code	Chemical Name	Schedule	Column	RI(a)	RI(b)	RI(c)	RI(d)	RI(e)
28-4-0127	S-Pentyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate-P'-thiolate	2.B.04	1	2170				
28-4-0128	Hexyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04	1	2047				
28-4-0129	Phenyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04	1	2120	2136			
28-4-0130	4-Methylphenyl N,N-dimethyl-P,P'-dimethyldiphosphonodithiono-P-amidate	2.B.04	1	2234	2247			
28-4-0131	Diphenyl dimethylpyrophosphonodithionate	2.B.04	1	2454	2479			
28-4-0132	Bis(4-methylphenyl) dimethylpyrophosphonodithionate	2.B.04	1	2656	2690			
28-4-0134	Dipentyl dimethylpyrophosphonodithionate	2.B.04	1	2087				
28-4-0135	S-Propyl methylphosphonothiolothionochloridate	2.B.04	1	1304				
28-4-0136	O-Butyl S-ethyl methylphosphonothiolothionate	2.B.04	1	1442				
28-4-0137	S-Ethyl O-pentyl methylphosphonothiolothionate	2.B.04	1	1543				
28-4-0138	O-sec-Butyl S-propyl methylphosphonothiolothionate	2.B.04	1	1468				
28-4-0139	O-Pentyl S-propyl methylphosphonothiolothionate	2.B.04	1	1630				
28-4-0140	Dipentyl methylphosphonodithiolothionate	2.B.04	1	2059				
28-4-0141	S-Ethyl O-pentyl P,P'-dimethyldiphosphonodithiono-P-thiolate	2.B.04	1	2035				
28-4-0142	Bis(S-propyl) dimethylpyrophosphonothiolodithionate	2.B.04	1	2155				
28-4-0143	Bis(S-butyl) dimethylpyrophosphonothiolodithionate	2.B.04	1	2343				
28-4-0144	Bis(S-pentyl) dimethylpyrophosphonothiolodithionate	2.B.04	1	2528				
28-4-0145	O-sec-Butyl S-propyl P,P'-dimethyldiphosphonodithiono-P'-thiolate	2.B.04	1	1956	1967			
28-4-0147	O-Butyl S-ethyl methylphosphonothiolate	2.B.04	1	1366				
28-4-0148	S-Ethyl O-pentyl methylphosphonothiolate	2.B.04	1	1465				
28-4-0149	O-sec-Butyl S-ethyl methylphosphonothiolate	2.B.04	1	1292	1296			
28-4-0150	S-Ethyl O-1,2-dimethylpropyl methylphosphonothiolate	2.B.04	1	1359	1367			
28-4-0151	S-Ethyl O-2-methylbutyl methylphosphonothiolate	2.B.04	1	1422				
28-4-0152	O-Butyl S-propyl methylphosphonothiolate	2.B.04	1	1453				
28-4-0153	O-Butyl S-isopropyl methylphosphonothiolate	2.B.04	1	1389				

OPCW Code	Chemical Name	Schedule	Column	RI(a)	RI(b)	RI(c)	RI(d)	RI(e)
28-4-0154	O-sec-Butyl S-isopropyl methylphosphonothiolate	2.B.04	1	1313	1318			
28-4-0155	Bis(methyl-d3) methylphosphonate	2.B.04	1	884				
28-4-0156	Dipentyl dimethylpyrophosphonate	2.B.04	1	1953				
28-4-0157	Dihexyl dimethylpyrophosphonate	2.B.04	1	2149				
28-4-0159	Bis(2-methylbutyl) dimethylpyrophosphonate	2.B.04	1	1867				
28-4-0160	Bis(1-methylbutyl) dimethylpyrophosphonate	2.B.04	1	1762	1768	1785	1803	1804
28-4-0161	Bis(1,2-dimethylpropyl) dimethylpyrophosphonate	2.B.04	1	1733	1744	1756	1761	1779
28-4-0162	N,N-Dimethyl-P-ethylphosphonamidochloridate	2.B.04	1	1244				
28-4-0163	Methyl N,N-dimethyl-P-ethylphosphonamidothionate	2.B.04	1	1185				
28-4-0164	Methyl-d3 N,N-dimethyl-P-ethylphosphonamidothionate	2.B.04	1	1181				
28-4-0165	Ethyl N,N-dimethyl-P-ethylphosphonamidothionate	2.B.04	1	1233				
28-4-0166	Ethyl-d5 N,N-dimethyl-P-ethylphosphonamidothionate	2.B.04	1	1230				
28-4-0167	N,N,N',N'-Tetramethyl-P-ethylphosphonodiamidodithionate	2.B.04	1	1345				
28-4-0168	N,N,N',N'-Tetramethyl-P-P'-diethylpyrophosphonodiamidodithionate	2.B.04	1	1882	1900			
28-4-0169	Methyl N,N-dimethyl-P,P'-diethyldiphosphono-P-amidodithionate-P'-thionate	2.B.04	1	1756	1762			
28-4-0170	Ethyl N,N-dimethyl-P,P'-diethyldiphosphono-P-amidodithionate-P'-thionate	2.B.04	1	1794	1800			
28-4-0171	Ethyl-d5 N,N-dimethyl-P,P'-diethyldiphosphono-P-amidodithionate-P'-thionate	2.B.04	1	1791	1797			
28-4-0172	O,S-Dimethyl ethylphosphonothiolothionate	2.B.04	1	1219				
28-4-0173	O,S-Bis(methyl-d3) ethylphosphonothiolothionate	2.B.04	1	1213				
28-4-0174	Dimethyl ethylphosphonodithiolothionate	2.B.04	1	1450				
28-4-0175	Bis(methyl-d3) ethylphosphonodithiolothionate	2.B.04	1	1448				
28-4-0176	Methyl P,P'-diethyldiphosphonodithiono-P'-chloridate	2.B.04	1	1605	1609			
28-4-0177	O,S'-Dimethyl P,P'-diethyldiphosphono-P-thionate-P'-thiolothionate	2.B.04	1	1817				
28-4-0178	O,S'-Bis(methyl-d3) P,P'-diethylphosphono-P-thionate-P'-thiolothionate	2.B.04	1	1812				

OPCW Code	Chemical Name	Schedule	Column	RI(a)	RI(b)	RI(c)	RI(d)	RI(e)
28-4-0179	Bis(ethyl-d5) P,P'-diethylpyrophosphonodithionate	2.B.04	1	1684				
04-4-0277	Pentyl S-2-diethylaminoethyl propylphosphonothiolate	1.A.03	1	2023				
04-4-0278	2-Methylbutyl S-2-diethylaminoethyl propylphosphonothiolate	1.A.03	1	1971				
04-4-0279	Ethyl S-2-diethylaminoethyl propylphosphonothiolate	1.A.03	1	1758				
04-4-0282	1-Methylbutyl S-2-diethylaminoethyl propylphosphonothiolate	1.A.03	1	1920				
04-4-0284	1-Methylpentyl S-2-diethylaminoethyl propylphosphonothiolate	1.A.03	1	2004				
04-4-0287	1-Methylhexyl S-2-diethylaminoethyl propylphosphonothiolate	1.A.03	1	2096				
04-4-0290	1-Methylheptyl S-2-diethylaminoethyl propylphosphonothiolate	1.A.03	1	2189				
04-4-0322r	2,2-Dimethylpropyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	1	1857				
09-4-0028	Benzyl butyl methylphosphonate	2.B.04	1	1738				
09-4-0029	Benzyl methylphosphonofluoridate	2.B.04	1	1318				
09-4-0032	Bis(tert-butyldimethylsilyl) ethylphosphonate	2.B.04	1	1653				
09-4-0033	Bis(tert-butyldimethylsilyl) isopropylphosphonate	2.B.04	1	1702				
09-4-0034	Bis(tert-butyldimethylsilyl) methylphosphonate	2.B.04	1	1571				
09-4-0035	Bis(tert-butyldimethylsilyl) propylphosphonate	2.B.04	1	1712				
15-4-0047	3,3,5,5-Tetramethylcyclohexyl N,N-diethyl-P-ethylphosphonamidate	2.B.04	1	1869				
15-4-0048	3-Methylpentyl N,N-diethyl-P,P'-dimethyldiphosphono-P-amidate	2.B.04	1	1971				
15-4-0049	3-Methylpentyl N,N-diethyl-P-methylphosphonamidate	2.B.04	1	1569				
15-4-0050	4-Methylcyclohexyl N,N-diethyl-P,P'-dimethyldiphosphono-P-amidate	2.B.04	1	2107	2112	2129	2130	
15-4-0051	4-Methylcyclohexyl N,N-diethyl-P-ethylphosphonamidate	2.B.04	1	1758	1764	1771	1782	
15-4-0052	4-Methylcyclohexyl N,N-diethyl-P-methylphosphonamidate	2.B.04	1	1684	1691	1700	1711	
15-4-0056	N,N,N',N'-Tetraethyl-P,P'-diisopropylpyrophosphonic diamide	2.B.04	1	1993	2043			
15-4-0057	N,N,N',N'-Tetraethyl-P-methylphosphonic diamide	2.B.04	1	1488				
15-4-0058	N,N,N',N'-Tetraethyl-P,P'-diethylpyrophosphonic diamide	2.B.04	1	1958				

OPCW Code	Chemical Name	Schedule	Column	RI(a)	RI(b)	RI(c)	RI(d)	RI(e)
15-4-0059	N,N,N',N'-Tetraethyl-P,P'-dimethylpyrophosphonic diamide	2.B.04	1	1818	1834			
15-4-0060	N,N,N',N'-Tetraethyl-P-ethylphosphonic diamide	2.B.04	1	1561				
15-4-0062	Cyclohexyl N,N-diethyl-P,P'-dimethyldiphosphono-P-amidate	2.B.04	1	2065	2069			
15-4-0063	Cyclohexyl N,N-diethyl-P-methylphosphonamidate	2.B.04	1	1645				
15-4-0074	Isobutyl N,N-diethyl-P-isopropylphosphonamidate	2.B.04	1	1479				
15-4-0075	Isobutyl N,N-diethyl-P-methylphosphonamidate	2.B.04	1	1371				
15-4-0077	Isopropyl N,N-diethyl-P-isopropylphosphonamidate	2.B.04	1	1362				
15-4-0078	Isopropyl N,N-diethyl-P,P'-diisopropyldiphosphono-P-amidate	2.B.04	1	1817	1838			
15-4-0079	N,N-Diethyl-P-isopropylphosphonamidic chloride	2.B.04	1	1358				
15-4-0080	N,N-Diethyl-P-methylphosphonamidic chloride	2.B.04	1	1235				
15-4-0082	Pinacolyl N,N-diethyl-P,P'-diethyldiphosphono-P-amidate	2.B.04	1	1975	1988	1988	2016	
15-4-0083	Pinacolyl N,N-diethyl-P-methylphosphonamidate	2.B.04	1	1474				
15-4-0084	Pinacolyl N,N-diethyl-P-ethylphosphonamidate	2.B.04	1	1547	1554			
15-4-0085	sec-Butyl N,N-diethyl-P,P'-dimethyldiphosphono-P-amidate	2.B.04	1	1734	1744	1746	1754	
15-4-0086	sec-Butyl N,N-diethyl-P-methylphosphonamidate	2.B.04	1	1351				
17-4-0203	Dibutyl diisopropylpyrophosphonate	2.B.04	1	1937				
17-4-0207	(5-Ethyl-2-methyl-2-oxido-1,3,2-dioxaphosphinan-5-yl)methyl methyl phosphonate	2.B.04	1	2068	2099			
17-4-0208	Butyl (5-ethyl-2-methyl-2-oxido-1,3,2-dioxaphosphinan-5-yl)methyl methyl phosphonate	2.B.04	1	2300	2314			
17-4-0209	Bis[(5-ethyl-2-methyl-2-oxido-1,3,2-dioxaphosphinan-5-yl)methyl] methyl phosphonate	2.B.04	1	3296	3298	3309		
28-4-0016r	2,4-Dimethyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1176	1191			
28-4-0017	4-Ethyl-2-methyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1265	1293			
28-4-0018	2,4,5-Trimethyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1210	1237	1283		
28-4-0020r	2-Ethyl-4-methyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1267	1287			
28-4-0021r	2,4-Diethyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1349	1376			
28-4-0022	2-Ethyl-4,5-dimethyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1296	1317	1356		
28-4-0023	2,5-Diethyl-4-propyl-1,3,2-dioxaphosphinane-2-oxide	2.B.04	1	1665	1689	1708		
28-4-0025r	4-Ethyl-2-propyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1432	1460			

OPCW Code	Chemical Name	Schedule	Column	RI(a)	RI(b)	RI(c)	RI(d)	RI(e)
28-4-0026	4,5-Dimethyl-2-propyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1375	1397	1443		
28-4-0027r	5-Ethyl-2,4-dipropyl-1,3,2-dioxaphosphinane-2-oxide	2.B.04	1	1736	1762	1781		
28-4-0028r	2,4-Dimethyl-1,3,2-dioxaphospholane-2-sulfide	2.B.04	1	1199	1209			
28-4-0029r	4-Ethyl-2-methyl-1,3,2-dioxaphospholane-2-sulfide	2.B.04	1	1284	1303			
28-4-0032	2-Ethyl-4-methyl-1,3,2-dioxaphospholane-2-sulfide	2.B.04	1	1292	1305			
28-4-0033r	2,4-Diethyl-1,3,2-dioxaphospholane-2-sulfide	2.B.04	1	1369	1388			

TABLE 3: LIST OF APPROVED IR SPECTROSCOPY DATA

OPCW Code	Chemical Name	Schedule
04-1-0335rv	2,2-Dimethylpropyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-1-0336rv	Hexyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-1-0339rv	Heptyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-1-0341rv	1-Isopropyl-2-methylpropyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03
04-1-0342rv	Octyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03

TABLE 4: LIST OF APPROVED IR SPECTROSCOPY DATA FOR DERIVATIVES OF SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Associated Chemical Schedule
09-1-0013	N,N-Diisopropyl-N-(2-trimethylsilyloxyethyl)amine	DS	2.B.11
09-1-0015	N-Ethyl-N-methyl-N-(2-trimethylsilyloxyethyl)amine	DS	2.B.11
09-1-0016	N-Isopropyl-N-propyl-N-(2-trimethylsilyloxyethyl)amine	DS	2.B.11

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