

**NOTE BY THE TECHNICAL SECRETARIAT****REPORT OF THE FORTY-SECOND MEETING OF THE VALIDATION GROUP FOR
THE UPDATING OF THE OPCW CENTRAL ANALYTICAL DATABASE
2 AND 3 SEPTEMBER 2015**

1. The Validation Group (hereinafter “the Group”) met on 2 and 3 September 2015 to discuss the evaluation of new analytical data for possible inclusion in the OPCW Central Analytical Database (OCAD) and to consider matters related to it. Mr James Riches of the United Kingdom of Great Britain and Northern Ireland served as Chairperson of the meeting.
2. The evaluators for the analytical techniques evaluated new data and sent their written reports to the coordinators for each analytical technique. The names of the coordinators who were present at the meeting, along with the technique for which each was responsible, are listed below:

Gas chromatography (retention index) (GC(RI))	Mr Gary Mallard (Acting) (United States of America)
Mass spectrometry (MS)	Mr Vesa Häkkinen (Acting) (Finland)
Infrared (IR) spectroscopy	Mr Armando Alcaraz (United States of America)
Nuclear magnetic resonance (NMR) spectroscopy	Mr Damian Magiera (Germany)

3. The coordinators provided an evaluation summary of the data presented to the Group for discussion at the meeting. The evaluators finalised the evaluation of the analytical data and confirmed that the approved data is technically valid.
4. This report of the Group’s Forty-Second Meeting presents the sets of validated analytical data of scheduled chemicals to be forwarded to the Director-General for appropriate action (Annex 1).
5. A working list of chemicals relevant to investigations of alleged use containing, a justification for each entry, was distributed to the Group for discussion. The Group agreed to continue to update the list, which is managed by the OPCW Laboratory.
6. Funds are available to purchase data for the OCAD under contract. A tender request containing a list of target chemicals will be issued shortly. The Group was made aware that its members are free to suggest target chemicals to be included in the tender request, with suggestions to be made by 31 October 2015.



7. The Group discussed the classification of non-scheduled chemicals currently on the Validation Group Working Database (VGWD). Software capable of enabling subsets of the Group's data to be selected for specific applications was demonstrated by Mr Gary Mallard. The Group was provided with a set of preliminary justification statements and categories for the VGWD data compiled by Mr Eric Wils. It was agreed that Group members wishing to respond to these suggestions, including the creation of additional categories of chemicals, should do so before 1 February 2016, at which point the list will be compiled by the Technical Secretariat (hereinafter "the Secretariat") for consideration by the Group at its next meeting.
8. The Group discussed technical and administrative aspects for evaluating MS/MS data. It was agreed that existing MS/MS data (four sets) would be collated in the standard format for formal evaluation by the MS subgroup at the next (Forty-Third) meeting.
9. The group discussed a number of changes to the Note by the Secretariat "Procedures for the Evaluation of Data to Be Included in the OPCW Central Analytical Database" (S/969/2011, dated 2 November 2011), which details the submission process for OCAD data. It was agreed that the suggested changes would be submitted to the Secretariat before the next meeting.
10. The NMR subgroup has tested and discussed a proposed electronic format for NMR data, and agreed to provide an update for Note S/969/2011 before the next meeting.
11. MS, GC(RI), and NMR data are available for the next meeting of the Group. Available data from all analytical techniques will be sent to the Group at least six weeks before its next scheduled meeting.
12. The next meeting of the Group is scheduled to take place on 30 and 31 March 2016. The evaluators agreed to send their evaluation reports to the appointed coordinators **no later than 15 March 2016**. The evaluators have agreed to come to the meeting prepared to finalise the evaluation of the analytical data referred to in the previous paragraph.
13. Annex 2 to this report lists the evaluators.

Annexes:

- Annex 1: Lists of Approved Data Recommended for Inclusion in the OPCW Central Analytical Database
- Annex 2: List of Members of the Validation Group

Annex 1

**LISTS OF APPROVED DATA RECOMMENDED FOR INCLUSION
IN THE OPCW CENTRAL ANALYTICAL DATABASE**

Note: In the last column of the tables that follow, “A” means “accepted” and “B” means “accepted subject to minor corrections”.

TABLE 1: LIST OF APPROVED IR DATA OF SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
04-1-0344rv	2-Ethylhexyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-1-0345rv	Nonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-1-0346rv	1-Methyloctyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-1-0347rv	Decyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-1-0348rv	1-Methylnonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A

TABLE 2: LIST OF APPROVED MS DATA OF SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
04-2-0552r	2-Ethylhexyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-2-0553r	Nonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-2-0554r	1-Methyloctyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-2-0555r	Decyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
04-2-0556r	1-Methylnonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	A
07-2-3382	Methyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3383	Methyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3384	Methyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3385	Methyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3386	Methyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3387	Methyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A

OPCW Code	Chemical Name	Schedule	Decision
07-2-3388	Ethyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3389	Ethyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3390	Ethyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3391	Ethyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3392	Ethyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3393	Ethyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3394	Propyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3395	Propyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3396	Propyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3397	Propyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3398	Propyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3399	Propyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3400	Isopropyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3401	Isopropyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3402	Isopropyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3403	Isopropyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3404	Isopropyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3405	Isopropyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3406	Butyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3407	Butyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3408	Butyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3409	Butyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3410	Butyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A

OPCW Code	Chemical Name	Schedule	Decision
07-2-3411	Butyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3412a	sec-Butyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3412b	sec-Butyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3413a	sec-Butyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3413b	sec-Butyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3414a	sec-Butyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3414b	sec-Butyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3415a	sec-Butyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3415b	sec-Butyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3416a	sec-Butyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3416b	sec-Butyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3417a	sec-Butyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3417b	sec-Butyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3418	Isobutyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3419	Isobutyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3420	Isobutyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3421	Isobutyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3422	Isobutyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3423	Isobutyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3424	Cyclohexyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3425	Cyclohexyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3426	Cyclohexyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3427	Cyclohexyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A

OPCW Code	Chemical Name	Schedule	Decision
07-2-3429	Cyclohexyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3430a	Pinacolyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3430b	Pinacolyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3431b	Pinacolyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3432a	Pinacolyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3432b	Pinacolyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3433a	Pinacolyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3433b	Pinacolyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3434a	Pinacolyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3434b	Pinacolyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3435a	Pinacolyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
07-2-3435b	Pinacolyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	A
16-2-0238	Ethyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	A
16-2-0239a	Isopropyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	A
16-2-0239b	Isopropyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	A
16-2-0240a	2-Methoxy-1-methylethyl propyl isopropylphosphonate	2.B.04	A
16-2-0240b	2-Methoxy-1-methylethyl propyl isopropylphosphonate	2.B.04	A
16-2-0241a	Butyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	A
16-2-0241b	Butyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	A
16-2-0243b	Bis(1,2-dimethylpropyl) isopropylphosphonate	2.B.04	B
16-2-0244	1-Ethylpropyl isopropyl isopropylphosphonate	2.B.04	A
16-2-0245	1-Ethylpropyl propyl isopropylphosphonate	2.B.04	A
16-2-0246	3-Methylbutyl propyl isopropylphosphonate	2.B.04	A
16-2-0248a	1,2-Dimethylpropyl propyl isopropylphosphonate	2.B.04	A
16-2-0248b	1,2-Dimethylpropyl propyl isopropylphosphonate	2.B.04	A
16-2-0250	2-Ethoxy-1-methylethyl ethyl isopropylphosphonate	2.B.04	A
16-2-0251	2-Ethoxy-1-methylethyl isopropyl isopropylphosphonate	2.B.04	A
16-2-0252	2-Ethoxy-1-methylethyl propyl isopropylphosphonate	2.B.04	A
16-2-0253a	Bis(2-ethoxy-1-methylethyl) isopropylphosphonate	2.B.04	B
16-2-0253b	Bis(2-ethoxy-1-methylethyl) isopropylphosphonate	2.B.04	B

OPCW Code	Chemical Name	Schedule	Decision
16-2-0254	2-Isopropoxyethyl methyl isopropylphosphonate	2.B.04	A
16-2-0255	Ethyl 2-isopropoxyethyl isopropylphosphonate	2.B.04	A
16-2-0256	2-Isopropoxyethyl isopropyl isopropylphosphonate	2.B.04	A
16-2-0257	2-Isopropoxyethyl propyl isopropylphosphonate	2.B.04	A
16-2-0258	Bis(2-isopropoxyethyl) isopropylphosphonate	2.B.04	A
16-2-0259	2-Methoxy-1-methylethyl propyl propylphosphonate	2.B.04	A
16-2-0260	Isopropyl 2-methoxy-1-methylethyl propylphosphonate	2.B.04	A
16-2-0261a	1,2-Dimethylpropyl 2-methoxyethyl methylphosphonate	2.B.04	A
16-2-0261b	1,2-Dimethylpropyl 2-methoxyethyl methylphosphonate	2.B.04	A
16-2-0262a	1,2-Dimethylpropyl 2-methoxyethyl ethylphosphonate	2.B.04	A
16-2-0262b	1,2-Dimethylpropyl 2-methoxyethyl ethylphosphonate	2.B.04	A
16-2-0263	Cyclopentyl 2-methoxy-1-methylethyl methylphosphonate	2.B.04	A
16-2-0264	2,2-Dimethylpropyl isopropyl methylphosphonate	2.B.04	A
16-2-0265	2,2-Dimethylpropyl isopropyl ethylphosphonate	2.B.04	A
16-2-0266	2,2-Dimethylpropyl isopropyl isopropylphosphonate	2.B.04	A
16-2-0267	2,2-Dimethylpropyl isopropyl propylphosphonate	2.B.04	A
16-2-0270	2,2-Dimethylpropyl propyl isopropylphosphonate	2.B.04	A
16-2-0271	2,2-Dimethylpropyl propyl propylphosphonate	2.B.04	A
16-2-0272a	Bis(2-methoxy-1-methylethyl) isopropylphosphonate	2.B.04	A
16-2-0272b	Bis(2-methoxy-1-methylethyl) isopropylphosphonate	2.B.04	A
16-2-0272c	Bis(2-methoxy-1-methylethyl) isopropylphosphonate	2.B.04	A
16-2-0274a	Butyl 1-ethyl-2-methylpropyl methylphosphonate	2.B.04	A
16-2-0274b	Butyl 1-ethyl-2-methylpropyl methylphosphonate	2.B.04	A
16-2-0275a	Butyl 1-ethyl-2-methylpropyl ethylphosphonate	2.B.04	A
16-2-0275b	Butyl 1-ethyl-2-methylpropyl ethylphosphonate	2.B.04	A
16-2-0276a	Butyl 1-ethyl-2-methylpropyl isopropylphosphonate	2.B.04	A
16-2-0277a	Butyl 1-ethyl-2-methylpropyl propylphosphonate	2.B.04	A
16-2-0277b	Butyl 1-ethyl-2-methylpropyl propylphosphonate	2.B.04	A

TABLE 3: LIST OF APPROVED GC(RI) DATA OF SCHEDULED CHEMICALS

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	Name	Schedule	Column	RI(a)	RI(b)	RI(c)	Decision
04-4-0361r	2-Ethylhexyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	1	2175			A
04-4-0362r	Nonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	1	2372			A
04-4-0363r	1-Methyloctyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	1	2245			A
04-4-0364r	Decyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	1	2474			A
04-4-0365r	1-Methylnonyl S-2-diethylaminoethyl isopropylphosphonothiolate	1.A.03	1	2341	2346		A
07-4-3245	Methyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1460			A
07-4-3246	Methyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1543			A
07-4-3247	Methyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1544			A
07-4-3248	Methyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1605			A
07-4-3249	Methyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1592			A
07-4-3250	Methyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1666			A
07-4-3251	Ethyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1515			A
07-4-3252	Ethyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1595			A
07-4-3253	Ethyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1596			A
07-4-3254	Ethyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1656			A
07-4-3255	Ethyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1641			A
07-4-3256	Ethyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1714			A
07-4-3257	Propyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1605			A
07-4-3258	Propyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1685			A
07-4-3259	Propyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1686			A
07-4-3260	Propyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1745			A
07-4-3261	Propyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1730			A
07-4-3262	Propyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1802			A

OPCW Code	Name	Schedule	Column	RI(a)	RI(b)	RI(c)	Decision
07-4-3263	Isopropyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1527			A
07-4-3264	Isopropyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1607			A
07-4-3265	Isopropyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1608			A
07-4-3266	Isopropyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1666			A
07-4-3267	Isopropyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1651			A
07-4-3268	Isopropyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1723			A
07-4-3269	Butyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1702			A
07-4-3270	Butyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1781			A
07-4-3271	Butyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1782			A
07-4-3272	Butyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1840			A
07-4-3273	Butyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1826			A
07-4-3274	Butyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1897			A
07-4-3275	sec-Butyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1621	1627		A
07-4-3276	sec-Butyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1700	1706		A
07-4-3277	sec-Butyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1700	1706		A
07-4-3278	sec-Butyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1758	1764		A
07-4-3279	sec-Butyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1743	1749		A
07-4-3280	sec-Butyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1814	1819		A
07-4-3281	Isobutyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1654			A
07-4-3282	Isobutyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1732			A
07-4-3283	Isobutyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1733			A
07-4-3284	Isobutyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1790			A
07-4-3285	Isobutyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1775			A
07-4-3286	Isobutyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1847			A
07-4-3287	Cyclohexyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1954			A
07-4-3288	Cyclohexyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	2031			A
07-4-3289	Cyclohexyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	2033			A

OPCW Code	Name	Schedule	Column	RI(a)	RI(b)	RI(c)	Decision
07-4-3290	Cyclohexyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	2089			A
07-4-3291	Cyclohexyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	2075			A
07-4-3292	Cyclohexyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	2148			A
07-4-3293	Pinacolyl S-2-N-ethyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1738	1757		A
07-4-3294	Pinacolyl S-2-N-methyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1816	1836		A
07-4-3295	Pinacolyl S-2-N-isopropyl-N-methylaminoethyl methylphosphonothiolate	1.A.03	2	1818	1837		A
07-4-3296	Pinacolyl S-2-N-ethyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1874	1892		A
07-4-3297	Pinacolyl S-2-N-ethyl-N-isopropylaminoethyl methylphosphonothiolate	1.A.03	2	1859	1878		A
07-4-3298	Pinacolyl S-2-N-isopropyl-N-propylaminoethyl methylphosphonothiolate	1.A.03	2	1929	1947		A
16-4-0272	Ethyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	1	1340			A
16-4-0273	Isopropyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	1	1358	1361		A
16-4-0274	2-Methoxy-1-methylethyl propyl isopropylphosphonate	2.B.04	1	1426	1429		A
16-4-0275	Butyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	1	1511	1516		A
16-4-0276	1,2-Dimethylpropyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	1	1501	1513		B
16-4-0277	Bis(1,2-dimethylpropyl) isopropylphosphonate	2.B.04	1	1500	1507	1514	B
16-4-0278	1-Ethylpropyl isopropyl isopropylphosphonate	2.B.04	1	1362			A
16-4-0279	1-Ethylpropyl propyl isopropylphosphonate	2.B.04	1	1425			A
16-4-0280	3-Methylbutyl propyl isopropylphosphonate	2.B.04	1	1450			A
16-4-0281	Cyclopentyl 2-methoxy-1-methylethyl isopropylphosphonate	2.B.04	1	1642	1649		A
16-4-0282	1,2-Dimethylpropyl propyl isopropylphosphonate	2.B.04	1	1401	1411		A
16-4-0284	2-Ethoxy-1-methylethyl ethyl isopropylphosphonate	2.B.04	1	1399			A
16-4-0285	2-Ethoxy-1-methylethyl isopropyl isopropylphosphonate	2.B.04	1	1420			A
16-4-0286	2-Ethoxy-1-methylethyl propyl isopropylphosphonate	2.B.04	1	1487			A
16-4-0287	Bis(2-ethoxy-1-methylethyl) isopropylphosphonate	2.B.04	1	1649	1657		B
16-4-0288	2-Isopropoxyethyl methyl isopropylphosphonate	2.B.04	1	1388			A
16-4-0289	Ethyl 2-isopropoxyethyl isopropylphosphonate	2.B.04	1	1438			A
16-4-0290	2-Isopropoxyethyl isopropyl isopropylphosphonate	2.B.04	1	1458			A

OPCW Code	Name	Schedule	Column	RI(a)	RI(b)	RI(c)	Decision
16-4-0291	2-Isopropoxyethyl propyl isopropylphosphonate	2.B.04	1	1524			A
16-4-0292	Bis(2-isopropoxyethyl) isopropylphosphonate	2.B.04	1	1733			A
16-4-0293	2-Methoxy-1-methylethyl propyl propylphosphonate	2.B.04	1	1466			A
16-4-0294	Isopropyl 2-methoxy-1-methylethyl propylphosphonate	2.B.04	1	1398			A
16-4-0295	1,2-Dimethylpropyl 2-methoxyethyl methylphosphonate	2.B.04	1	1397	1407		A
16-4-0296	1,2-Dimethylpropyl 2-methoxyethyl ethylphosphonate	2.B.04	1	1471	1481		A
16-4-0297	Cyclopentyl 2-methoxy-1-methylethyl methylphosphonate	2.B.04	1	1539	1548		A
16-4-0298	2,2-Dimethylpropyl isopropyl methylphosphonate	2.B.04	1	1216			A
16-4-0299	2,2-Dimethylpropyl isopropyl ethylphosphonate	2.B.04	1	1290			A
16-4-0300	2,2-Dimethylpropyl isopropyl isopropylphosphonate	2.B.04	1	1327			A
16-4-0301	2,2-Dimethylpropyl isopropyl propylphosphonate	2.B.04	1	1365			A
16-4-0302	2,2-Dimethylpropyl propyl methylphosphonate	2.B.04	1	1280			A
16-4-0303	2,2-Dimethylpropyl propyl ethylphosphonate	2.B.04	1	1356			A
16-4-0304	2,2-Dimethylpropyl propyl isopropylphosphonate	2.B.04	1	1389			A
16-4-0305	2,2-Dimethylpropyl propyl propylphosphonate	2.B.04	1	1430			A
16-4-0306	Bis(2-methoxy-1-methylethyl) isopropylphosphonate	2.B.04	1	1531	1536	1540	A
16-4-0307	1-Ethyl-2-methylpropyl propyl isopropylphosphonate	2.B.04	1	1478	1484		B
16-4-0308	Butyl 1-ethyl-2-methylpropyl methylphosphonate	2.B.04	1	1464	1468		A
16-4-0309	Butyl 1-ethyl-2-methylpropyl ethylphosphonate	2.B.04	1	1535	1540		A
16-4-0310	Butyl 1-ethyl-2-methylpropyl isopropylphosphonate	2.B.04	1	1565	1571		A
16-4-0311	Butyl 1-ethyl-2-methylpropyl propylphosphonate	2.B.04	1	1603	1608		A

Annex 2

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