

**NOTE BY THE TECHNICAL SECRETARIAT****REPORT OF THE FORTY-SEVENTH MEETING OF THE VALIDATION GROUP
FOR THE UPDATING OF THE OPCW CENTRAL ANALYTICAL DATABASE
25 AND 26 SEPTEMBER 2018**

1. The Validation Group met on 25 and 26 September 2018 to discuss the evaluation of new analytical data for possible inclusion in the OPCW Central Analytical Database (OCAD) and to consider matters related to this database. Mr Hugh Gregg (United States of America) served as acting 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.

Mr Ferdinand Visser (South Africa)	Gas chromatography (retention index) (GC(RI))
Mr Vesa Häkkinen (acting coordinator) (Finland)	Mass spectrometry (MS)
Mr Armando Alcaraz (United States of America)	Infrared (IR) spectroscopy
Mr Damian Magiera (Germany)	Nuclear magnetic resonance (NMR) spectroscopy

3. The coordinators provided an evaluation summary of the data presented to the Validation Group for discussion at the meeting. The evaluators finalised the evaluation of the analytical data and confirmed that the approved data was technically valid.
4. The Validation Group accepted the resignation of Mr James Riches (United Kingdom of Great Britain and Northern Ireland) from his position as Chairperson of the Group and as member of the MS subgroup. It also accepted the resignations of Mr Alex Bennett (United Kingdom) from the MS subgroup and Mr Takeharu Wada (Japan) from the GC(RI) subgroup. The Group acknowledged the support of each of these contributors throughout the time of their membership.
5. The Validation Group welcomed Mr Arne Ficks (Germany) as a new member of the MS subgroup and Mr Harri August Heikkinen (Finland) as a new member of the NMR subgroup.



6. Ms Karin Höjer Holmgren (Sweden) agreed to accept the Validation Group's nomination to be the coordinator of the MS subgroup. Mr Hugh Gregg agreed to accept the Group's nomination to be the Chairperson of the Validation Group.
7. The Validation Group expressed its greatest appreciation to Mr Eric Wils, who more than 25 years ago had first begun to participate in the meetings of the expert groups which ultimately recommended the formation of the Validation Group.¹ In 1994, Mr Wils was appointed as the first Chairperson of the Validation Group, a position he held until 2006. Since that time, he actively participated in Group meetings and assisted the Group in the drafting of its reports. After 25 years of service to the Validation Group, Mr Wils decided that this would be his final Group meeting. The Group would miss his contributions and humour at future meetings and wished him well in his future endeavours.
8. Mr Albert Kireev (OPCW Inspector Team Leader) described the Technical Secretariat's use of Raman spectroscopy during Schedule 1 inspections. The Validation Group discussed the potential addition of Raman data to the OCAD. The IR group agreed to investigate the feasibility of validating and including Raman data in the OCAD.
9. The MS subgroup discussed the evaluation of tandem MS (MS/MS) data. As a result, the guidelines for the submission of MS/MS data were updated to meet the requirements of valid spectra to be included in the OCAD database.
10. This report presents the sets of validated analytical data on scheduled and non-scheduled chemicals (Annexes 1 and 2), to be forwarded to the Director-General for appropriate action.
11. Available data from all analytical techniques will be sent to the Validation Group at least six weeks before its next scheduled meeting, which is scheduled to take place on 19 and 20 March 2019. The evaluators agreed to send their evaluation reports to the appointed coordinators no later than 4 March 2019. The evaluators agreed to come to the meeting prepared to finalise the evaluation of the analytical data contained in Annexes 1 and 2.
12. Annex 3 to this report lists the members and evaluators of the Validation Group.

Annexes:

- Annex 1: Lists of Approved Data on Scheduled Chemicals Recommended for Inclusion in the OPCW Central Analytical Database
- Annex 2: Lists of Approved Data on Non-Scheduled Chemicals Relevant to the Chemical Weapons Convention and Recommended for Inclusion in the OPCW Central Analytical Database
- Annex 3: List of Members of the Validation Group

¹ See paragraph 7.5 of the report of Working Group B (PC-III/B/2, dated 30 June 1993).

Annex 1

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

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

TABLE 1: LIST OF APPROVED MS DATA ON SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
16-2-0279r	Cyclopropylmethyl 2-diisopropylaminoethyl methylphosphonate	2.B.04	A
16-2-0288ar	2-Methoxy-1-methylethyl 2-diisopropylaminoethyl ethylphosphonate	2.B.04	A
16-2-0296ar	1-Ethyl-2-methylpropyl 2-diisopropylaminoethyl ethylphosphonate	2.B.04	A
16-2-0296br	1-Ethyl-2-methylpropyl 2-diisopropylaminoethyl ethylphosphonate	2.B.04	A
16-2-0303r	3-Methoxybutyl 2-diisopropylaminoethyl methylphosphonate	2.B.04	A
16-2-0307r	Cyclobutylmethyl 2-diisopropylaminoethyl methylphosphonate	2.B.04	A
16-2-0308r	4-Methylpentyl 2-diisopropylaminoethyl methylphosphonate	2.B.04	A
16-2-0314r	Cyclobutyl 2-diisopropylaminoethyl ethylphosphonate	2.B.04	A
16-2-0317ar	1-Methylbutyl 2-diisopropylaminoethyl ethylphosphonate	2.B.04	A
16-2-0317br	1-Methylbutyl 2-diisopropylaminoethyl ethylphosphonate	2.B.04	A
16-2-0321r	4-Methoxybutyl 2-diisopropylaminoethyl ethylphosphonate	2.B.04	A
16-2-0328a	2-Methoxy-1-methylethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0328b	2-Methoxy-1-methylethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0329	Cyclopropylmethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	B
16-2-0330	2-Ethoxyethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0331	3-Methoxypropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0332	Cyclobutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0333	3-Ethoxypropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0334a	1,2-Dimethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0334b	1,2-Dimethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0334c	1,2-Dimethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0335	2,2-Dimethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0336	1-Ethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A

OPCW Code	Chemical Name	Schedule	Decision
16-2-0337	3-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0338	Pentyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0340a	2-Ethoxy-1-methylethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0340b	2-Ethoxy-1-methylethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0341a	2-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0341b	2-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0342a	1-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0342b	1-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0342c	1-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0342d	1-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0343	3-Methoxybutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0344	2-Propoxyethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	A
16-2-0345a	2-Methoxy-1-methylethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0345b	2-Methoxy-1-methylethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0346	Cyclopropylmethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	B
16-2-0347	2-Ethoxyethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0348	3-Methoxypropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0349	Cyclobutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0350	3-Ethoxypropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0351a	1,2-Dimethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0351b	1,2-Dimethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0351c	1,2-Dimethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0352	2,2-Dimethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0353	1-Ethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0354	3-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0355	Pentyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0356	Cyclopentyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0358a	2-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0358b	2-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0359a	1-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0359b	1-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0359c	1-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0359d	1-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0360	3-Methoxybutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A
16-2-0361	2-Propoxyethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	A

TABLE 2: LIST OF APPROVED NMR DATA ON SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
23-3-0001	O-Isobutyl methylphosphonothionate	2.B.04	B
23-3-0002	O-Isobutyl methylphosphonothionate	2.B.04	A
23-3-0003	O-Isobutyl methylphosphonothionate	2.B.04	A
23-3-0004	O-Isobutyl methylphosphonothionate	2.B.04	B
05-3-0075	2-Methylcyclohexyl methylphosphonofluoridate	1.A.01	A
05-3-0078	Methyl N,N-dimethylphosphoramidocyanidate	1.A.02	A
05-3-0079	Methyl N,N-dimethylphosphoramidocyanidate	1.A.02	B
05-3-0080	Methyl N,N-dimethylphosphoramidocyanidate	1.A.02	A
05-3-0081	Methyl N,N-dimethylphosphoramidocyanidate	1.A.02	A
05-3-0084	Isopropyl S-2-diethylaminoethyl ethylphosphonothiolate	1.A.03	A
05-3-0085	Isopropyl S-2-diethylaminoethyl ethylphosphonothiolate	1.A.03	A
05-3-0086	Bis(2-chloroethyl)ethylamine	1.A.06	A
05-3-0087	Bis(2-chloroethyl)ethylamine	1.A.06	B
05-3-0088	Bis(2-chloroethyl)methylamine	1.A.06	A
05-3-0089	Bis(2-chloroethyl)methylamine	1.A.06	B
05-3-0090	Tris(2-chloroethyl)amine	1.A.06	A
05-3-0091	Tris(2-chloroethyl)amine	1.A.06	B
05-3-0095	O-Cyclohexyl methylphosphonothionofluoridate	2.B.04	A
05-3-0096	O-Cyclohexyl methylphosphonothionofluoridate	2.B.04	A
05-3-0097	O-Cyclohexyl methylphosphonothionofluoridate	2.B.04	A
05-3-0100	Ethyl 2-diisopropylaminoethyl methylphosphonate	2.B.04	A
05-3-0101	Ethyl 2-diisopropylaminoethyl methylphosphonate	2.B.04	A
05-3-0102	O-Ethyl methylphosphonothionate	2.B.04	A
05-3-0103	O-Ethyl methylphosphonothionate	2.B.04	B
05-3-0104	O-Ethyl methylphosphonothionate	2.B.04	A
05-3-0105	O-Ethyl methylphosphonothionate	2.B.04	A
05-3-0106	O-Ethyl S-methyl methylphosphonothiolate	2.B.04	A
05-3-0107	O-Ethyl S-methyl methylphosphonothiolate	2.B.04	B
05-3-0108	O-Ethyl S-methyl methylphosphonothiolate	2.B.04	A
05-3-0109	O-Ethyl S-methyl methylphosphonothiolate	2.B.04	A
05-3-0111	O-Ethyl O-sodium methylphosphonothionate	2.B.04	B
05-3-0112	O-Ethyl O-sodium methylphosphonothionate	2.B.04	A
05-3-0115	O-Propyl propylphosphonothionate	2.B.04	A
05-3-0117	Propyl propylphosphonate	2.B.04	B
05-3-0118	Propyl propylphosphonate	2.B.04	A
05-3-0121	Cyclohexyl methyl ethylphosphonate	2.B.04	A
05-3-0123	Ethylphosphonic acid	2.B.04	A
05-3-0124	Ethylphosphonic acid	2.B.04	B

OPCW Code	Chemical Name	Schedule	Decision
05-3-0125	Ethylphosphonic acid	2.B.04	A
05-3-0126	Ethylphosphonic acid	2.B.04	A
05-3-0127	Ethylphosphonic acid	2.B.04	A
05-3-0128	Ethylphosphonic acid	2.B.04	B
05-3-0129	Ethylphosphonic acid	2.B.04	A
05-3-0130	Ethylphosphonic acid	2.B.04	A
05-3-0131	Ethylphosphonic acid	2.B.04	A
05-3-0132	Ethylphosphonic acid	2.B.04	B
05-3-0133	Ethylphosphonic acid	2.B.04	A
05-3-0134	Ethylphosphonic acid	2.B.04	A
05-3-0135	O-Ethyl O-2-diisopropylaminoethyl methylphosphonothionate	2.B.04	A
05-3-0136	O-Ethyl O-2-diisopropylaminoethyl methylphosphonothionate	2.B.04	B
05-3-0138	O-Ethyl O-2-diisopropylaminoethyl methylphosphonothionate	2.B.04	A
05-3-0145	O-Ethyl S-3-dimethylaminopropyl methylphosphonothiolate	2.B.04	B
05-3-0146	O-Ethyl S-3-dimethylaminopropyl methylphosphonothiolate	2.B.04	B
05-3-0152	2-(N,N-Diisopropylamino)ethanol	2.B.11	B
05-3-0159	Triethyl phosphite	3.B.09	A
05-3-0160	Triethyl phosphite	3.B.09	A
05-3-0161	Diethyl phosphite	3.B.11	A
05-3-0163	Diethyl phosphite	3.B.11	A
05-3-0164	Diethyl phosphite	3.B.11	A
05-3-0170	Ethyldiethanolamine	3.B.15	B
05-3-0171	Ethyldiethanolamine	3.B.15	A
05-3-0172	Ethyldiethanolamine	3.B.15	B
05-3-0174	Ethyldiethanolamine	3.B.15	B
05-3-0175	Ethyldiethanolamine	3.B.15	A
05-3-0176	Ethyldiethanolamine	3.B.15	B
05-3-0177	Methyldiethanolamine	3.B.16	A
05-3-0178	Methyldiethanolamine	3.B.16	B
05-3-0179	Methyldiethanolamine	3.B.16	A
05-3-0180	Methyldiethanolamine	3.B.16	B
05-3-0181	Triethanolamine	3.B.17	A
05-3-0182	Triethanolamine	3.B.17	B

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

Note: Under the "Column" heading for GC(RI) data, a "1" means an HP5 or an SE54 column and a "2" means a DB-5MS column.

OPCW Code	Name	Sched	Column	RI(a)	RI(b)	RI(c)	RI(d)	Decision
16-4-0362	2-Methoxy-1-methylethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1491	1497			A
16-4-0363	Cyclopropylmethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1524				B
16-4-0364	2-Ethoxyethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1559				A
16-4-0365	3-Methoxypropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1580				A
16-4-0366	Cyclobutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1507				A
16-4-0367	3-Ethoxypropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1654				A
16-4-0368	1,2-Dimethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1462	1475	1488		A
16-4-0369	2,2-Dimethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1452				A
16-4-0370	1-Ethylpropyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1487				A
16-4-0371	3-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1521				A
16-4-0372	Pentyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1565				A
16-4-0373	Cyclopentyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1607				A
16-4-0374	2-Ethoxy-1-methylethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1551	1575			A
16-4-0375	2-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1522	1547			A
16-4-0376	1-Methylbutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1475	1489	1494	1507	A
16-4-0377	3-Methoxybutyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1638				A
16-4-0378	2-Propoxyethyl 2-dimethylaminoethyl methylphosphonate	2.B.04	1	1659				A
16-4-0379	2-Methoxy-1-methylethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1565	1570			A
16-4-0380	Cyclopropylmethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1592				B
16-4-0381	2-Ethoxyethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1636				A
16-4-0382	3-Methoxypropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1654				A
16-4-0383	Cyclobutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1584				A
16-4-0384	3-Ethoxypropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1720				A
16-4-0385	1,2-Dimethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1535	1540	1549		A
16-4-0386	2,2-Dimethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1527				A
16-4-0387	1-Ethylpropyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1561				A

OPCW Code	Name	Sched	Column	RI(a)	RI(b)	RI(c)	RI(d)	Decision
16-4-0388	3-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1594				A
16-4-0389	Pentyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1638				A
16-4-0390	Cyclopentyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1682				A
16-4-0391	2-Ethoxy-1-methylethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1629	1632	1637		A
16-4-0392	2-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1596	1602			A
16-4-0393	1-Methylbutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1550	1556	1561	1568	A
16-4-0394	3-Methoxybutyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1703				A
16-4-0395	2-Propoxyethyl 2-dimethylaminoethyl ethylphosphonate	2.B.04	1	1723				A
07-4-3406	Propyl S-2-N-methyl-N-propylaminoethyl propylphosphonothiolate	1.A.03	2	1830				A
28-4-0024r	4-Methyl-2-propyl-1,3,2-dioxaphospholane-2-oxide	2.B.04	1	1350	1368			A
28-4-0035r	2,5-Diethyl-4-propyl-1,3,2-dioxaphosphinane-2-sulfide	2.B.04	1	1647				A
28-4-0036r	4-Methyl-2-propyl-1,3,2-dioxaphospholane-2-sulfide	2.B.04	1	1374	1386			A
28-4-0039r	5-Ethyl-2,4-dipropyl-1,3,2-dioxaphosphinane-2-sulfide	2.B.04	1	1729				A
28-4-0133	Dicyclohexyl dimethylpyrophosphonodithionate	2.B.04	1	2427				A
28-4-0158r	Diheptyl dimethylpyrophosphonate	2.B.04	1	2343				A

TABLE 4: LIST OF APPROVED MS/MS DATA ON SCHEDULED CHEMICALS

OPCW Code	Chemical Name	Schedule	Decision
02-5-0007	Isopropyl methylphosphonate	2.B.04	B
02-5-0008	Isopropyl methylphosphonate	2.B.04	B
02-5-0009	Isopropyl methylphosphonate	2.B.04	B
02-5-0010	Methylphosphonic acid	2.B.04	B
02-5-0011	Methylphosphonic acid	2.B.04	B
02-5-0012	Methylphosphonic acid	2.B.04	B
02-5-0013	Ethyl methylphosphonate	2.B.04	B
02-5-0014	Ethyl methylphosphonate	2.B.04	B
02-5-0015	Ethyl methylphosphonate	2.B.04	B
02-5-0016	Diethyl methylphosphonate	2.B.04	B
02-5-0017	Diethyl methylphosphonate	2.B.04	B
02-5-0018	Diethyl methylphosphonate	2.B.04	B
02-5-0019	2-(N,N-Diisopropylamino)ethanol	2.B.11	B
02-5-0020	2-(N,N-Diisopropylamino)ethanol	2.B.11	B
02-5-0021	2-(N,N-Diisopropylamino)ethanol	2.B.11	B
02-5-0037	Methyldiethanolamine	3.B.16	B
02-5-0038	Methyldiethanolamine	3.B.16	B
02-5-0039	Methyldiethanolamine	3.B.16	B
02-5-0040	Ethyldiethanolamine	3.B.15	B
02-5-0041	Ethyldiethanolamine	3.B.15	B
02-5-0042	Ethyldiethanolamine	3.B.15	B
02-5-0043	Triethanolamine	3.B.17	B
02-5-0044	Triethanolamine	3.B.17	B
02-5-0045	Triethanolamine	3.B.17	B
08-5-0004	Methyldiethanolamine	3.B.16	A
08-5-0005	Methyldiethanolamine	3.B.16	A
08-5-0006	Methyldiethanolamine	3.B.16	A
08-5-0016	Triethanolamine	3.B.17	A
08-5-0017	Triethanolamine	3.B.17	A
08-5-0018	Triethanolamine	3.B.17	A
14-5-0007	Diethyl methylphosphonate	2.B.04	A
14-5-0008	Diethyl methylphosphonate	2.B.04	A
14-5-0009	Diethyl methylphosphonate	2.B.04	A
14-5-0010	Diisopropyl methylphosphonate	2.B.04	A
14-5-0011	Diisopropyl methylphosphonate	2.B.04	A
14-5-0012	Diisopropyl methylphosphonate	2.B.04	A
14-5-0013	Methyl pinacolyl methylphosphonate	2.B.04	B
14-5-0014	Methyl pinacolyl methylphosphonate	2.B.04	B
14-5-0015	Methyl pinacolyl methylphosphonate	2.B.04	B
14-5-0016	Diethyl N,N-dimethylphosphoramidate	2.B.06	A
14-5-0017	Diethyl N,N-dimethylphosphoramidate	2.B.06	A
14-5-0018	Diethyl N,N-dimethylphosphoramidate	2.B.06	A
14-5-0019	Bis(2-hydroxyethyl)sulfide	2.B.13	A
14-5-0020	Bis(2-hydroxyethyl)sulfide	2.B.13	A

OPCW Code	Chemical Name	Schedule	Decision
14-5-0021	Bis(2-hydroxyethyl)sulfide	2.B.13	A
14-5-0031	Ethyl methylphosphonic acid	2.B.04	A
14-5-0032	Ethyl methylphosphonic acid	2.B.04	A
14-5-0033	Ethyl methylphosphonic acid	2.B.04	A
14-5-0037	Isopropyl methylphosphonic acid	2.B.04	A
14-5-0038	Isopropyl methylphosphonic acid	2.B.04	A
14-5-0039	Isopropyl methylphosphonic acid	2.B.04	A
14-5-0043	Pinacolyl methylphosphonic acid	2.B.04	A
14-5-0044	Pinacolyl methylphosphonic acid	2.B.04	A
14-5-0045	Pinacolyl methylphosphonic acid	2.B.04	A

Annex 2

LISTS OF APPROVED DATA ON NON-SCHEDULED CHEMICALS RELEVANT TO THE CHEMICAL WEAPONS CONVENTION AND RECOMMENDED FOR INCLUSION IN THE OPCW CENTRAL ANALYTICAL DATABASE

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

TABLE 5: LIST OF APPROVED MS/MS DATA ON NON-SCHEDULED CHEMICALS RELEVANT TO THE CHEMICAL WEAPONS CONVENTION

OPCW Code	Chemical Name	Schedule	Decision	Justification ²
02-5-0001	Tributyl phosphate	Standard ³	B	Reference standards for evaluation
02-5-0002	Tributyl phosphate	Standard	B	
02-5-0003	Tributyl phosphate	Standard	B	
02-5-0004	Dibutyl phosphate	Standard	B	
02-5-0005	Dibutyl phosphate	Standard	B	
02-5-0006	Dibutyl phosphate	Standard	B	
02-5-0025	2-(N,N-Diisopropylamino)ethylsulfonic acid	NS	B	Degradation products of V type nerve agents 1.A.03
02-5-0026	2-(N,N-Diisopropylamino)ethylsulfonic acid	NS	B	
02-5-0027	2-(N,N-Diisopropylamino)ethylsulfonic acid	NS	B	
02-5-0028	Bis(2-N,N-diisopropylaminoethyl)disulfide	NS	B	
02-5-0029	Bis(2-N,N-diisopropylaminoethyl)disulfide	NS	B	
02-5-0030	Bis(2-N,N-diisopropylaminoethyl)disulfide	NS	B	
02-5-0031	Bis(2-hydroxyethyl)sulfoxide	NS	B	Degradation product/impurity of sulfur mustard 1.A.04
02-5-0032	Bis(2-hydroxyethyl)sulfoxide	NS	B	
02-5-0033	Bis(2-hydroxyethyl)sulfoxide	NS	B	
02-5-0034	Bis(carboxymethyl)sulfide	NS	B	
02-5-0035	Bis(carboxymethyl)sulfide	NS	B	
02-5-0036	Bis(carboxymethyl)sulfide	NS	B	
08-5-0001	Tributyl phosphate	Standard	A	Reference standards for evaluation
08-5-0002	Tributyl phosphate	Standard	A	
08-5-0003	Tributyl phosphate	Standard	A	

² A classification, as that for non-scheduled GC/MS data used for on-site analysis, is not necessary for MS/MS data as it is only used by off-site laboratories.

³ Reference chemicals (noted as standards in this table) are required for evaluation in accordance with S/1519/2017 (dated 21 July 2017).

OPCW Code	Chemical Name	Schedule	Decision	Justification²
08-5-0007	N-Methyldiethanolamine-N-oxide	NS	A	Degradation product/impurity of nitrogen mustard 1.A.06
08-5-0008	N-Methyldiethanolamine-N-oxide	NS	A	
08-5-0009	N-Methyldiethanolamine-N-oxide	NS	A	
08-5-0013	N-Ethyldiethanolamine-N-oxide	NS	A	
08-5-0014	N-Ethyldiethanolamine-N-oxide	NS	A	
08-5-0015	N-Ethyldiethanolamine-N-oxide	NS	A	
08-5-0019	Triethanolamine-N-oxide	NS	A	
08-5-0020	Triethanolamine-N-oxide	NS	A	
08-5-0021	Triethanolamine-N-oxide	NS	A	
14-5-0001	Tributyl phosphate	Standard	A	Reference standards for evaluation
14-5-0002	Tributyl phosphate	Standard	A	
14-5-0003	Tributyl phosphate	Standard	A	
14-5-0022	Bis(2-hydroxyethylthio)ethane	NS	A	Degradation product/impurity of sulfur mustard 1.A.04
14-5-0023	Bis(2-hydroxyethylthio)ethane	NS	A	
14-5-0024	Bis(2-hydroxyethylthio)ethane	NS	A	
14-5-0025	Bis(2-hydroxyethylthioethyl)ether	NS	A	
14-5-0026	Bis(2-hydroxyethylthioethyl)ether	NS	A	
14-5-0027	Bis(2-hydroxyethylthioethyl)ether	NS	A	

Annex 3

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