

Schedule 1 Quiz Answer Key



OPCW

Organisation for the Prohibition of Chemical Weapons

S1-6 Sarin
1A(1) O-Alkyl (<C10, incl. cycloalkyl) alkyl (Me, Et, n-Pr or i-Pr) phosphonofluoridates

S1-5 Tabun
1A(2) O-Alkyl (<C10, incl. cycloalkyl) N,N-dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidocyanidates

S1-1 VX
1A(3) O-Alkyl (H or <C10, incl. cycloalkyl) S 2 dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl alkyl (Me, Et, n-Pr or i-Pr) phosphonothiolates and corresponding alkylated or protonated salts

1A(5) : Lewisites
S1-21 Lewisite 1: 2-Chlorovinyl dichloroarsine
S1-14 Lewisite 2: Bis(2-chlorovinyl)chloroarsine
S1-17 Lewisite 3: Tris(2-chlorovinyl)arsine

1A(6) : Nitrogen mustards
S1-8 HN1: Bis(2-chloroethyl)ethylamine
S1-13 HN2: Bis(2-chloroethyl)methylamine
S1-7 HN3: Tris(2-chloroethyl)amine

S1-11
1A(7) : Saxitoxin

S1-16
1A(8) : Ricin

1A(4) : Sulfur mustards
 2-Chloroethylchloromethylsulfide **S1-4**
 Mustard gas: Bis(2-chloroethyl)sulfide **S1-15**
 Bis(2-chloroethylthio)methane **S1-23**
 Sesquimustard: 1,2-Bis(2-chloroethylthio)ethane **S1-10**
 1,3-Bis(2-chloroethylthio)-n-propane **S1-18**
 1,4-Bis(2-chloroethylthio)-n-butane **S1-9**
 1,5-Bis(2-chloroethylthio)-n-pentane **S1-19**
 Bis(2-chloroethylthiomethyl)ether **S1-12**
 O-Mustard: Bis(2-chloroethylthioethyl)ether **S1-24**

Reading Molecular Structures in Augmented Reality

Atomic Color Code
 C: H: S:
 N: P: As:
 Cl: F: O:

Bonds
 Tabun (3) has single, double and triple bonds. Each bond type has been circled and labelled so you know what to look for!

Diagram showing a molecule with atoms labeled: Arsenic (1), Fluorine (F), Carbon (C) (2), Sulfur (S), Chlorine (Cl) (4), Hydrogen (H), Oxygen (O), Nitrogen (N), and Phosphorus (P). Bonds are labeled: Single Bond, Triple Bond, and Double Bond.

S1-2 DF
1B(9) Alkyl (Me, Et, n-Pr or i-Pr) phosphonyldifluorides

S1-22
1B(11) : Chlorosarin
 O-Isopropyl methylphosphonochloridate

S1-20 QL
1B(10) O-Alkyl (H or <C10, incl. cycloalkyl) O-2-dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl alkyl (Me, Et, n-Pr or i-Pr) phosphonites and corresponding alkylated or protonated salts

S1-3
1B(12) : Chlorosoman
 O-Pinacolyl methylphosphonochloridate

Schedule 2 Quiz Answer Key

S2-18
2A(1) : Amiton
 O,O-Diethyl S-[2-(diethylamino)ethyl] phosphorothiolate and corresponding alkylated or protonated salts

S2-8
2A(2) : PFIB
 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene

S2-16 (S)-(+)-3-Quinuclidinyl benzilate*
S2-1 (R)-(-)-3-Quinuclidinyl benzilate*
2A(3)* : BZ
 3-Quinuclidinyl benzilate

S2-13 (S)-(-)-3-Quinuclidinol
2B(9) Quinuclidin-3-ol
S2-4 (R)-(+)-3-quinuclidinol

2B(10)
 N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-chlorides and corresponding protonated salts
S2-2
2-chloro-N,N-dimethylethan-1-amine

S2-15 Dichloro(methyl)phosphane
S2-11 Tetrachloro(methyl)phosphane
S2-9 N-[bis(dimethylamino)methylidene]-P-methylphosphonofluoridamidic acid
2B(4)
 Chemicals, except for those listed in Schedule 1, containing a phosphorus atom to which is bonded one methyl, ethyl or propyl (normal or iso group but not further carbon atoms). (Exemption: Fonofos = O-Ethyl S-phenyl ethylphosphonate)

2-(dimethylamino)ethan-1-ol
2B(11)
 N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts
 Exemptions: N,N-Dimethylaminoethanol and corresponding protonated salts
S2-10
 N,N-Diethylaminoethanol and corresponding protonated salts

S2-3
2B(5)
 N,N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides

S2-6
2B(6)
 Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidates

2-(dimethylamino)ethan-1-thiol
2B(12)
 N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts
S2-17

S2-14 Thiodiglycol: **2B(13)**
 Bis(2-hydroxyethyl)sulfide

S2-7
2B(7)
 Arsenic trichloride

S2-12
2B(8)
 2,2-Diphenyl-2-hydroxyacetic acid

Pinacolyl alcohol: 2B(14) **S2-5**
 3,3-Dimethylbutan-2-ol

S3-16
3B(15)
 Ethyldiethanolamine

Schedule 3 Quiz Answer Key

S3-12
3A(1) : Phosgene
 Carbonyl dichloride

S3-5
3A(2)
 Cyanogen chloride

S3-7
3A(3)
 Hydrogen cyanide

S3-13
3A(4) : Chloropicrin
 Trichloronitromethane

S3-3
3B(5)
 Phosphorus oxychloride

S3-14
3B(6)
 Phosphorus trichloride

S3-11
3B(7)
 Phosphorus pentachloride

S3-9
3B(8)
 Trimethyl phosphite

S3-17
3B(9)
 Triethyl phosphite

S3-1
3B(10)
 Dimethyl phosphite

S3-10
3B(11)
 Diethyl phosphite

S3-6
3B(12)
 Sulfur monochloride

S3-15
3B(13)
 Sulfur dichloride

S3-2
3B(14)
 Thionyl chloride

S3-8
3B(16)
 Methyl-diethanolamine

S3-4
3B(17)
 Triethanolamine

