

# Guide to Scheduled Chemicals

Order No. 129P



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This pamphlet is part of a series about the Chemical Weapons Convention (CWC) and its potential security impact prepared by the Defense Treaty Inspection Readiness Program (DTIRP) to increase **Readiness Through Awareness** within the United States Government and government contractor community. Additional copies of this pamphlet, as well as other cost-free information about arms control treaties and agreements potentially affecting your facility and related security countermeasures, are also available from DTIRP Outreach Program personnel.

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## INTRODUCTION

The purpose of this guide is to provide a quick reference to the Chemical Weapons Convention (CWC) scheduled chemicals. It also addresses provisions related to activities not prohibited by the Convention. The information is intended to assist site commanders, program managers, site/facility managers, facility security officers, and site assistance teams in site preparation for “routine” and challenge inspections conducted under the Convention.

The guide is divided into four sections. The first section contains a synopsis of provisions governing scheduled and unscheduled chemicals subject to verification activity under the Convention with thresholds for reporting and inspection. The second section lists the scheduled chemicals as found in the Convention. The third section provides a more comprehensive, cross-referenced, alphabetical listing of scheduled chemicals and unscheduled precursors to the scheduled chemicals where information is available. This section includes some, but not all, of the compounds from the families of chemicals depicted in Schedules 1 and 2. It also provides the applicable Chemical Abstracts Service (CAS) registry number and, where available, precursors and catalysts used in production. The final section lists the primary scheduled and associated chemicals by CAS number.

## QUICK REFERENCE TO VERIFICATION OF ACTIVITIES NOT PROHIBITED UNDER THE CWC

### SCHEDULE 1 PROVISIONS

Monitored Activity—Production, storage, transfer, and consumption for research, medical, pharmaceutical, or protective purposes at a single, small-scale facility

- Facility approved by State Party
- Annual production not exceeding 1 metric ton
- Annual declaration of past and projected activities
- Required initial inspection and facility agreement (not later than Entry into Force (EIF) + 180 days)
- Inspection number and duration based on risk
- Inspection notification: not less than 36 hours before arrival at the facility (84 hours for initial inspections)

Monitored Activity—Production (including methods) storage, transfer, and consumption for protective purposes outside the single, small-scale facility

- One facility approved by State Party
- Aggregate production not exceeding 10 kg per year
- Annual declaration of past and projected activities
- Required initial inspection and facility agreement (not later than EIF + 180 days)
- Inspection number and duration based on risk
- Inspection notification: not less than 36 hours before arrival at the facility (84 hours for initial inspections)

Monitored Activity—Production, storage, transfer, and consumption for research, medical, or pharmaceutical purposes outside the single, small-scale facility

- Facilities approved by State Party
- Aggregate production in excess of 100 g, but not exceeding 10 kg per year per facility
- Annual declaration of past and projected activities
- Required initial inspection and facility agreement (not later than EIF + 180 days)
- Inspection number and duration based on risk
- Inspection notification: not less than 36 hours before arrival at the facility (84 hours for initial inspections)

## SCHEDULE 2 PROVISIONS

Monitored Activity—Production, storage, processing, consumption, import, and export of Schedule 2 chemicals

- Reporting threshold for plant sites—One or more plant(s) which produced, processed, or consumed during any of the previous 3 years or is anticipated to produce, process, or consume in the next year:
  - 1 kg of 3-Quinuclidinyl benzilate (BZ, QNB)
  - 100 kg of any other Schedule 2, Part A chemical
  - 1 metric ton of any Schedule 2, Part B chemical
- Inspection threshold for plants—One or more plant(s) which produced, processed, or consumed during any of the previous 3 years or is anticipated to produce, process, or consume in the next year:
  - 10 kg of 3-Quinuclidinyl benzilate
  - 1 metric ton of any other Schedule 2, Part A chemical
  - 10 metric tons of a Schedule 2, Part B chemical
- Initial inspection within 3 years of EIF
- Facility agreement required (90 days after initial inspection)
- Inspection notification: not less than 48 hours before arrival at plant site (84 hours for initial inspections)
- Inspection number: no more than two per year
- Inspection duration: not to exceed 96 hours

## SCHEDULE 3 PROVISIONS

Monitored Activity—Production of Schedule 3 chemicals

- Reporting threshold—one or more plants which produced during the previous year or are anticipated to produce in the next year:
  - 30 metric tons of a Schedule 3 chemical
- Inspection threshold—plant sites which produced during the previous year or are anticipated to produce in the next year:
  - 200 metric tons aggregate of a declared Schedule 3 chemical
- No initial inspection
- Facility agreement not required
- Inspection notification: not less than 120 hours before arrival at plant site
- Inspection number: no more than two per year
- Inspection duration: not to exceed 24 hours

## OTHER CHEMICAL PRODUCTION FACILITIES

Monitored Activity—Production by synthesis of unscheduled discrete organic chemicals

- Reporting threshold:
  - Plant sites which produced 200 metric tons of unscheduled discrete organic chemicals during the previous year, or
  - Plant sites comprising one or more plants which produced during the previous year 30 metric tons of an unscheduled discrete organic chemical containing phosphorous, sulfur, or fluorine
- Inspection threshold:
  - Plant sites which produced 200 metric tons of unscheduled discrete organic chemicals during the previous year, or
  - Plant sites comprising one or more plants which produced during the previous year 200 metric tons of an unscheduled discrete organic chemical containing phosphorous, sulfur, or fluorine
- No initial inspection
- Facility agreement not required Inspections start fourth year after EIF
- Inspection notification: not less than 120 hours before arrival at plant site
- Inspection number: no more than two per year
- Inspection duration: not to exceed 24 hours

## LIST OF SCHEDULED CHEMICALS FROM THE CONVENTION

### SCHEDULE 1 CHEMICALS/PRECURSORS CAS Number

#### A. Toxic Chemicals:

- |     |   |  |
|-----|---|--|
| (1) | O-Alkyl ( $\geq C_{10}$ , incl. cycloalkyl) alkyl<br>(Me, Et, n-Pr or i-Pr)-phosphonofluoridates<br>Sarin: O-Isopropyl methylphosphonofluoridate<br>Soman: O-Pinacolyl methylphosphonofluoridate  | 107-44-8<br>96-64-0  |
| (2) | O-Alkyl ( $\geq C$ , incl. cycloalkyl) N,N-dialkyl<br>(Me, Et, n-Pr or i-Pr) phosphoramidocyanidates<br>Tabun: O-Ethyl-N,N-dimethylphosphoramidocyanidate   | 77-81-6  |
| (3) | O-Alkyl (H or $\geq C_{10}$ , incl. cycloalkyl) S-2-dialkyl<br>(Me, Et, n-Pr or i-Pr)-aminoethyl alkyl<br>Me, Et, n-Pr or i-Pr phosphonothiolates and<br>corresponding alkylated or protonated salts<br>VX: O-Ethyl S-2-diisopropylaminoethyl<br>methyl phosphonothiolate   | 50782-69-9   |
| (4) | Sulfur Mustards:<br>2-Chloroethylchloromethylsulfide<br>Mustard gas: Bis(2-chloroethyl)sulfide<br>Bis(2-chloroethylthio)methane<br>Sesquimustard: 1,2-Bis(2-chloroethylthio)ethane<br>1,3-Bis(2-chloroethylthio)-n-propane<br>1,4-Bis(2-chloroethylthio)-n-butane<br>1,5-Bis(2-chloroethylthio)-n-pentane<br>Bis(2-chloroethylthiomethyl)ether<br>O-Mustard: Bis(2-chloroethylthioethyl)ether | 2625-76-5<br>505-60-2<br>63869-13-6<br>3563-36-8<br>63905-10-2<br>142868-93-7<br>142868-94-8<br>63918-90-1<br>63918-89-8 |
| (5) | Lewisites:<br>Lewisite 1: 2-Chlorovinylchloroarsine<br>Lewisite 2: Bis(2-chlorovinyl)chloroarsine<br>Lewisite 3: Tris(2-chlorovinyl)arsine  | 541-25-3<br>40334-69-8<br>40334-70-1   |
| (6) | Nitrogen Mustards:<br>HN 1: Bis(2-chloroethyl)ethylamine<br>HN 2: Bis(2-chloroethyl)methylamine<br>HN 3: Tris(2-chloroethyl)amine   | 538-07-8<br>51-75-2<br>555-77-1  |
| (7) | Saxitoxin   | 35523-89-8   |
| (8) | Ricin   | 9009-86-3  |

#### B. Precursors:

- |      |  |                        |
|------|--|------------------------|
| (9)  | Alkyl(Me, Et, n-Pr or i-Pr)phosphonyldifluorides<br>DF: Methylphosphonyldifluoride   | 676-99-3               |
| (10) | O-Alkyl(H or $\geq C_{10}$ , incl. cycloalkyl) O-2-dialkyl<br>(Me, Et, n-Pr or i-Pr)-aminoethyl alkyl<br>(Me, Et, n-Pr or i-Pr)phosphonites and corresponding<br>alkylated or protonated salts<br>QL: O-Ethyl O-2-diisopropylaminoethyl<br>methylphosphonite | 57856-11-8             |
| (11) | Chlorosarin: O-Isopropyl methylphosphonochloridate<br>Chlorosoman: O-Pinacolyl methylphosphonochloridate   | 1445-76-7<br>7040-57-5 |

### SCHEDULE 2 CHEMICALS/PRECURSORS CAS Number

#### A. Toxic Chemicals:

- |     |   |           |
|-----|---|-----------|
| (1) | Amiton: O,O-Diethyl S-[2-(diethylamino)ethyl]<br>phosphorothiolate and corresponding alkylated<br>or protonated salts | 78-53-5   |
| (2) | PFIB: 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene   | 382-21-8  |
| (3) | BZ: 3-Quinuclidinyl benzilate   | 6581-06-2 |

#### B. Precursors:

- |      |   |                                  |
|------|---|----------------------------------|
| (4)  | Chemicals, except for those listed in Schedule 1,<br>containing a phosphorus atom to which is bonded one<br>methyl, ethyl, or propyl (normal or iso) group but no<br>further carbon atoms<br>Methylphosphonyl dichloride<br>Dimethylmethylphosphonate<br>Exemption: Fonofos: O-Ethyl S-phenyl<br>ethylphosphonothiolothionate | 676-97-1<br>756-79-6<br>944-22-9 |
| (5)  | N,N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic<br>dihalides  |                                  |
| (6)  | Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl<br>(Me, Et, n-Pr or i-Pr)-phosphoramidates   |                                  |
| (7)  | Arsenic trichloride   | 7784-34-1                        |
| (8)  | 2,2-Diphenyl-2-hydroxyacetic acid   | 76-93-7                          |
| (9)  | Quinuclidine-3-ol   | 1619-34-7                        |
| (10) | N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-<br>chlorides and corresponding protonated salts  |                                  |

(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 N,N-Diethylaminoethanol and corresponding protonated salts	108-01-0 100-37-8
(12)	N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts	
(13)	Thiodiglycol: Bis(2-hydroxyethyl)sulfide	111-48-8
(14)	Pinacolyl alcohol: 3,3-Dimethylbutane-2-ol	464-07-3

### SCHEDULE 3 CHEMICALS/PRECURSORS

### CAS Number

#### A. Toxic Chemicals:

(1)	Phosgene: Carbonyl dichloride	75-44-5
(2)	Cyanogen chloride	506-77-4
(3)	Hydrogen cyanide	74-90-8
(4)	Chloropicrin: Trichloronitromethane	76-06-2

#### B. Precursors:

(5)	Phosphorus oxychloride	10025-87-3
(6)	Phosphorus trichloride	7719-12-2
(7)	Phosphorus pentachloride	10026-13-8
(8)	Trimethyl phosphite	121-45-9
(9)	Triethyl phosphite	122-52-1
(10)	Dimethyl phosphite	868-85-9
(11)	Diethyl phosphite	762-04-9
(12)	Sulfur monochloride	10025-67-9
(13)	Sulfur dichloride	10545-99-0
(14)	Thionyl chloride	7719-09-7
(15)	Ethyl-diethanolamine	139-87-7
(16)	Methyl-diethanolamine	105-59-9
(17)	Triethanolamine	102-71-6

## CWC CHEMICALS

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**Chemical: (.beta.-chloroethyl)diisopropylamine hydrochloride**

**See:** 2-(N,N-Diisopropylamino) ethyl chloride hydrochloride

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**Chemical: (2-Chloro-ethyl)-dipropyl-amine hydrochloride**

**See:** (N,N-Dipropylamino) ethyl chloride hydrochloride

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**Chemical: (2-Chloroethyl) diisopropylamine hydrochloride**

**See:** 2-(N,N-Diisopropylamino) ethyl chloride hydrochloride

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**Chemical: (2-Chloroethyl)-dipropylamine**

**See:** 2-(N,N-Dipropylamino) ethyl chloride

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**Chemical: (2-Chloroethyl)diethylamine**

**See:** 2-(N,N-Diethylamino)ethyl chloride

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**Chemical: (N,N-diethylamino) ethyl chloride hydrochloride**

**Synonym:** 2-Chlorotriethylamine hydrochloride  
.beta.-(Diethylamino) ethyl chloride hydrochloride

Triethylamine, 2-chloro-, hydrochloride  
**Schedule:** 2B

**CAS No:** 869-24-9

**Use:** Scheduled precursor to VE and VM

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**Chemical: (N,N-Diisopropylamino) ethanol**

**See:** N,N-diisopropyl-(beta)-aminoethanol

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**Chemical: (N,N-Dimethylamino) ethyl chloride hydrochloride**

**Synonym:** 2-Dimethylaminic ethyl chloride hydrochloride  
Dimethylaminoethyl chloride hydrochloride  
**Schedule:** 2B

**CAS No:** 4584-46-7

**Use:** Scheduled precursor to V1

---

**Chemical: (N,N-Dipropylamino) ethyl chloride hydrochloride**

**Synonym:** 1-Propanamine, N-(2-chloroethyl)-N-propyl-hydrochloride  
N-(2-Chloroethyl)-N-Propyl-1-propanamine hydrochloride  
(2-Chloro-ethyl)-dipropyl-amine hydrochloride

**Schedule:** 2B

**CAS No:** 4535-86-8

**Use:** Scheduled precursor to V2

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**Chemical: .beta,.beta'-Bis(2-hydroxyethylthio) ethyl ether**

**See:** Bis(2-hydroxyethylthioethyl)ether

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**Chemical: .beta.-(Diethylamino) ethyl chloride hydrochloride**

**See:** (N,N-diethylamino) ethyl chloride hydrochloride

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**Chemical: .beta.-(Dimethylamino) ethyl chloride**

**See:** 2-(N,N-Dimethylamino) ethyl chloride

---

**Chemical: .beta.-mercaptoethanol**

**See:** 2-Hydroxyethanethiol

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**Chemical: [3aS-(3.alpha.,4.alpha.10aR)]2,6, Diamino-4-[[aminocarbonyl)oxy]**

**See:** Saxitoxin

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**Chemical: 1,1'-(oxybis(methylene))bis(2-chloroethane)**

**See:** Bis(2-chloroethylthiomethyl)ether

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**Chemical: 1,1'-Thiobisethene**

**See:** Divinyl sulfide

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**Chemical: 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene**

**See:** PFIB

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**Chemical: 1,1-[methylenebis(thio)]bis[2-chloroethane]**

**See:** Bis(2-chloroethylthio)methane

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**Chemical: 1,2,2-trimethylpropyl ester**

**See:** O-Pinacolyl isopropyl phosphonofluoridate

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**Chemical: 1,2-bis(2-chloroethylthio)ethane**

**See:** Sesquimustard

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**Chemical: 1,2-Bis(2-hydroxyethylthio)ethane**

**CAS No:** 524-43-8

**Use:** Unscheduled precursor to Sesquimustard

**Chemical: 1,2-Dimenaptoethane**

**See:** 1,2-Ethanedithiol

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**Chemical: 1,2-Dimethyldiphosphonic acid**

**Synonym:** Methyl phosphonate, anhydride  
Pyromix  
Phosphonic acid, methyl-, anhydride  
Diphosphonic acid, dimethyl  
Methylphosphonic anhydride

**Schedule:** 2B

**CAS No:** 1070-90-2

**Use:** Scheduled precursor to DC, DIMP, and DF

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**Chemical: 1,2-Epoxyethane**

**See:** Ethylene oxide

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**Chemical: 1,2-Ethanedithiol**

**Synonym:** 1,2-Dimenaptoethane  
Dithioglycol  
1,2-Ethylenedithiol  
 $\alpha$ -Ethylene dimercaptan

**CAS No:** 540-63-6

**Use:** Unscheduled precursor to Sesquimustard

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**Chemical: 1,2-Ethylenedithiol**

**See:** 1,2-Ethanedithiol

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**Chemical: 1,3,5-Trinitrophenol Picric acid**

**See:** Picric acid

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**Chemical: 1,3-Bis(2-chloroethylthio)-n-propane**

**Schedule:** 1A

**CAS No:** 63905-10-2

**Synthesis:** 1,3-Bis(2-hydroxyethylthio)-n-propane and Thionyl chloride

**Use:** Toxic chemical

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**Chemical: 1,3-Bis(2-hydroxyethylthio)-n-propane**

**CAS No:** 16260-48-3

**Use:** Unscheduled precursor to 1,3-Bis(2-chloroethylthio)-n-propane

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**Chemical: 1,3-Dichloropropane**

**Synonym:** Propane, 1,3-dichloro  
Trimethylene dichloride

**CAS No:** 142-28-9

**Use:** Unscheduled precursor to HD

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**Chemical: 1,4-Bis(2-chloroethylthio)-n-butane**

**Schedule:** 1A

**CAS No:** 142868-93-7

**Synthesis:** 1,3-bis(2-hydroxyethylthio)butane and Thionyl chloride

**Use:** Toxic chemical

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**Chemical: 1,5-Bis(2-chloroethylthio)-n-pentane**

**Synonym:** DCES 5

Pentane, 1,5-bis[(2-chloroethyl)thio]

**Schedule:** 1A

**CAS No:** 142868-94-8

**Synthesis:** 1,5-bis(2-hydroxyethylthio)-n-pentane and T

**Use:** Toxic chemical

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**Chemical: 1,5-Dichloro-n-pentane**

**Synonym:** Pentane, 1,5-dichloro  
1,5-Dichloropentane

**CAS No:** 628-76-2

**Use:** Unscheduled precursor to  
DCES 5

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**Chemical: 1,5-Dichloropentane**

**See:** 1,5-Dichloro-n-pentane

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**Chemical: 1-Aminoethane**

**See:** Ethylamine

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**Chemical: 1-Azabicyclo [2.2.2]  
octan-3-one**

**See:** 3-Quinuclidinone

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**Chemical: 1-  
Azabicyclo[2,2,2]octan-3-one  
hydrochloride**

**See:** 3-Quinuclidinone  
hydrochloride

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**Chemical: 1-Butanamine**

**See:** Tributylamine

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**Chemical: 1-Carboethoxymethyl-4-  
carboethoxypiperidine**

**Synonym:** 1-Piperidine, acetic acid,  
4-(ethoxycarbonyl)- ethyl ester  
Ethyl 4-(ethoxycarbonyl)-1-  
piperidine acetic acid  
1-Piperidineacetic acid, 4-carboxy-  
diethyl ester

**CAS No:** 1838-39-7

**Use:** Unscheduled precursor to 3-  
Quinuclidinone hydrochloride

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**Chemical: 1-Chloro-2-(2-  
chloroethyl)disulfanyl) ethane**

**See:** Bis(2-chloroethyl) disulfide

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**Chemical: 1-Chloro-2-(2-  
chloroethylthio) ethane**

**See:** Bis(2-chloroethyl)sulfide

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**Chemical: 1-Chloroethylene**

**See:** Vinyl chloride

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**Chemical: 1-Hydroxy-2,4,6-  
trinitrobenzene**

**See:** Picric acid

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**Chemical: 1-Methyl ethanol**

**See:** Isopropanol

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**Chemical: 1-Piperidineacetic acid,  
4-carboxy-, diethyl ester**

**See:** 1-Carboethoxymethyl-4-  
carboethoxypiperidine

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**Chemical: 1-Piperidine, acetic  
acid,  
4-(ethoxycarbonyl)-ethyl ester**

**See:** 1-Carboethoxymethyl-4-  
carboethoxypiperidine

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**Chemical: 1-Propanamine, N-(2-  
Chloroethyl)-N-propyl**

**See:** 2-(N,N-Dipropylamino) ethyl  
chloride

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**Chemical: 1-Propanamine, N-(2-  
chloroethyl)-N-propyl-  
hydrochloride**

**See:** (N,N-Dipropylamino) ethyl  
chloride hydrochloride

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**Chemical: 1-Propene, 1,1,2,3,3,3-  
hexafluoro-**

**See:** Perfluoropropylene

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**Chemical: 1070**

**See:** HN3

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**Chemical: 1130**

**See:** HN2

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**Chemical: 1149**

**See:** HN1

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**Chemical: 2,2'-  
Dichloroethyl)disulfide**

**See:** Bis(2-chloroethyl) disulfide

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**Chemical: 2,2'-(oxybis(2,1-  
ethanedylthio)) bis ethanol**

**See:** Bis(2-  
hydroxyethylthio)ether

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**Chemical: 2,2'-  
[methylenedithio]diethanol**

**See:** Bis(2-  
hydroxyethylthio)methane

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**Chemical: 2,2'-Iminodiethanol**

**See:** Diethanolamine

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**Chemical: 2,2,2-Nitrilotriethanol**

**See:** Triethanolamine

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**Chemical:  
2,2,2-Trichloroethylene**

**See:** HN3

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**Chemical: 2,2-  
(ethylimino)diethanol**

**See:** Ethyldiethanolamine

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**Chemical: 2,2-  
(methylimino)diethanol**

**See:** Methyl-diethanolamine

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**Chemical: 2,2-  
Dihydroxydiethylsulfide**

**See:** Bis(2-hydroxyethyl)sulfide

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**Chemical: 2,2-Dimethylbutan-3-ol**

**See:** Pinacolyl alcohol

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**Chemical: 2,2-Dimethylbutane**

**Synonym:** Butane, 2,2-dimethyl  
**CAS No:** 75-83-2

**Use:** Unscheduled precursor to  
Pinacolyl alcohol

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**Chemical: 2,2-Diphenyl-2-hydroxyacetic acid**

**Synonym:** Benzilic acid  
Benzeneacetic acid  
hydroxy-.alpha.-phenyl-

**Schedule:** 2B

**CAS No:** 76-93-7

**Synthesis:** Benzoin, nitric acid, ethanol, NaOH, and water

**Use:** Scheduled precursor to BZ

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**Chemical: 2,3-Dimethyl-2,3-butanediol**

**Synonym:** Pinacol  
2,3-Dimethyl-2,3-dihydroxybutane  
Pinacone

Tetramethylethylene glycol

**CAS No:** 76-09-5

**Use:** Unscheduled precursor to Pinacolone

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**Chemical: 2,3-Dimethyl-2,3-dihydroxybutane**

**See:** 2,3-Dimethyl-2,3-butanediol

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**Chemical: 2,4,6-Trinitrophenol**

**See:** Picric acid

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**Chemical: 2-(Bis(1-methylethyl)amino) ethanol**

**See:** N,N-Diisopropyl-(beta)-aminoethanol

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**Chemical: 2-(Bis(1-methylethyl)amino) ethyl ethyl ester**

**See:** O-Ethyl,2-diisopropyl aminoethyl methylphosphonate

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**Chemical: 2-(Dipropylamino)-ethanol**

**See:** 2-(N,N-Dipropylamino) ethanol

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**Chemical: 2-(N,N,-Diisopropylamino) ethyl chloride**

**See:** N,N-diisopropyl-(beta)-aminoethyl chloride

---

**Chemical: 2-(N,N-Diethylamino) ethyl chloride**

**Synonym:** (2-Chloroethyl)diethylamine  
Ethanamine, 2-chloro-N,N-diethyl

**Schedule:** 2B

**CAS No:** 100-35-6

**Use:** Scheduled precursor to VE and VM

---

**Chemical: 2-(N,N-Diisopropylamino) ethyl chloride hydrochloride**

**Synonym:** (2-Chloroethyl) diisopropylamine hydrochloride  
(.beta.-chloroethyl)diisopropylamine hydrochloride

**Schedule:** 2B

**CAS No:** 4261-68-1

**Use:** Scheduled precursor to VX, VS, V4, and V5

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**Chemical: 2-(N,N-Dimethylamino) ethyl chloride**

**Synonym:** .beta.-(Dimethylamino) ethyl chloride

Chloro (dimethylamino) ethane

Dimethylaminoethyl chloride

Dimethyl (2-chloroethyl) amine

**Schedule:** 2B

**CAS No:** 107-99-3

**Use:** Scheduled precursor to V1

---

**Chemical: 2-(N,N-Dipropylamino) ethanol**

**Synonym:** Ethanol, 2-(dipropylamino)-  
2-(Dipropylamino)-ethanol  
Dipropylethanolamine

**Schedule:** 2B

**CAS No:** 3238-75-3

**Use:** Scheduled precursor to V2

---

**Chemical: 2-(N,N-Dipropylamino) ethyl chloride**

**Synonym:** (2-Chloroethyl)-dipropylamine  
1-Propanamine, N-(2-Chloroethyl)-N-propyl

N-(2-chloroethyl)-N-propyl-1-propanamine

**Schedule:** 2B

**CAS No:** 36716-60-6

**Use:** Scheduled precursor to V2

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**Chemical: 2-2-Dichlorothrethylamine**

**See:** HN1

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**Chemical: 2-Butanesulfonic acid, 3,3-dimethyl-**

**See:** 3,3-Diemethylbutane-2-sulfonic acid

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**Chemical: 2-Butanone,3,3-dimethyl**

**See:** Pinacolone

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**Chemical: 2-Butene,2-methyl-**

**See:** 2-Methyl-2-butane

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**Chemical: 2-Chloro-2-methyl propane**

**See:** t-Butyl chloride

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**Chemical: 2-Chloro-N,N-bis(2-chloroethyl) ethanamine hydrochloride**

**See:** Tris(2-chloroethyl) amine hydrochloride

---

**Chemical: 2-Chloroethanol**

**Synonym:** 2-Hydroxyethyl chloride

Ethanol, 2-chloro-

Ethyl chlorohydrin

Ethylene chlorhydrin

**CAS No:** 107-07-3

**Use:** Unscheduled precursor to Thiodiglycol

---

**Chemical: 2-Chloroethanyldichloroarsine**

**See:** Lewisite 1

---

---

**Chemical: 2-Chloroethyl chloromethyl triether**

See: 2-Chloroethylchloromethylsulfide

---

**Chemical: 2-Chloroethylchloromethylsulfide**

Synonym: 2-chloroethylthiochloromethane  
2-Chloroethyl chloromethyl triether

Schedule: 1A

CAS No: 2625-76-5

Synthesis: 2-hydroxyethanethiol and methylene chloride

Use: Toxic chemical

---

**Chemical: 2-Chloroethylthiochloromethane**

See: 2-Chloroethylchloromethylsulfide

---

**Chemical: 2-Chlorotriethylamine hydrochloride**

See: (N,N-diethylamino) ethyl chloride hydrochloride

---

**Chemical: 2-Chlorovinyltrichlorosilane**

Synonym: Silane, trichloro (1-chloroethenyl)-  
Trichloro (1-chloroethenyl) silane  
Silane, trichloro (1-chlorovinyl)-

CAS No: 2441-27-2

Use: Unscheduled precursor to L1-3

---

**Chemical: 2-Chlorovinylchloroarsine**

See: Lewisite 1

---

**Chemical: 2-Dimethylaminic ethyl chloride hydrochloride**

See: (N,N-Dimethylamino) ethyl chloride hydrochloride

---

**Chemical: 2-Hydroxy-1,2-diphenylethanone**

See: Benzoin

---

**Chemical: 2-Hydroxy-1-ethanethiol**

See: 2-hydroxyethanethiol

---

**Chemical: 2-Hydroxyethanethiol**

Synonym: Ethanol, 2-mercapto-  
2-Hydroxy-1-ethanethiol  
.beta.-mercaptoethanol

CAS No: 60-24-2

Use: Unscheduled precursor to Bis(2-chloroethylthiomethyl)ether and Sesquimustard

---

**Chemical: 2-Hydroxyethyl chloride**

See: 2-Chloroethanol

---

**Chemical: 2-Hydroxypropane**

See: Isopropanol

---

**Chemical: 2-Methyl-2-butane**

Synonym: 2-Butane,2-methyl-  
Amylene

Trimethylethylene

CAS No: 513-35-9

Use: Unscheduled precursor to Pinacolone

---

**Chemical: 2-Propanamine, N-(1-Methylethyl)-**

See: Diisopropylamine

---

**Chemical: 2-Propanamine, N-(2-chloroethyl)-N-(1-methylethyl)-**

See: N,N-diisopropyl-(beta)-aminoethyl chloride

---

**Chemical: 2-Propanol**

See: Isopropanol

---

**Chemical: 2-Propyl alcohol**

See: Isopropanol

---

**Chemical: 3,3-Dimethylbutane-2-sulfonic acid**

Synonym: 2-Butanesulfonic acid,  
3,3-dimethyl-  
3,3-Dimethyl-2-butanesulfonic acid

CAS No: 135469-38-4

Use: Unscheduled precursor to Pinacolyl alcohol

---

**Chemical: 3,3-Dimethyl-2-butanesulfonic acid**

See: 3,3-Dimethylbutane-2-sulfonic acid

---

**Chemical: 3,3-Dimethyl-2-butanone**

See: Pinacolone

---

**Chemical: 3,3-Dimethylbutane-2-ol**

See: Pinacolyl alcohol

---

**Chemical: 3-Benziloyl-1-azabicyclo[2.2.2] octane**

See: BZ

---

**Chemical: 3-Hydroxy-1-methylpiperidine**

CAS No: 3554-74-3

Use: Unscheduled precursor to BZ

---

**Chemical: 3-Hydroxy-azabicyclo[2.2.2]octane**

See: Quinuclidine-3-ol

---

**Chemical: 3-Oxyquinuclidine**

See: 3-Quinuclidinone

---

**Chemical: 3-Penten-2-one,4-methyl**

See: Mesityl oxide

---

**Chemical: 3-Q azabicyclo[2.2.2]-3-oxetanol**

See: Quinuclidine-3-ol

---

**Chemical: 3-Quinuclidinol**

See: Quinuclidine-3-ol

---

**Chemical: 3-Quinuclidinone**

**Synonym:** 1-Azabicyclo [2.2.2] octan-3-one

3-Oxyquinuclidine

3-Quinuclidone

Quinuclidone

**CAS No:** 3731-38-2

**Use:** Unscheduled precursor to BZ

---

**Chemical:****3-Quinuclidinone hydrochloride**

**Synonym:** 1-Azabicyclo[2,2,2]octan-3-one hydrochloride

**CAS No:** 1193-65-3

**Use:** Unscheduled precursor to Quinuclidine-3-ol

---

**Chemical:****3-Quinuclidinyl benzilate**

See: BZ

---

**Chemical: 3-Quinuclidone**

See: 3-Quinuclidinone

---

**Chemical: 3M Etching liquid**

See: Phosphoric acid

---

**Chemical:****4-Methyl-3-penten-2-one**

See: Mesityl oxide

---

**Chemical: 4-Methylpyridine**

**Synonym:** 4-Picoline

Pyridine, 4-methyl

**CAS No:** 109-89-4

**Use:** Unscheduled precursor to Isonicotinic acid

---

**Chemical: 4-Picoline**

See: 4-Methylpyridine

---

**Chemical:****4-Pyridinecarboxylic acid**

See: Isonicotinic acid

---

**Chemical: 4-Pyridinecarboxylic acid, ethyl ester,**

See: Ethyl isonicotinate

---

**Chemical:****a-Ethylene dimercaptan**

See: 1,2-Ethanedithiol

---

**Chemical: AC**

See: Hydrogen cyanide

---

**Chemical: Acetene**

See: Ethylene

---

**Chemical: Acetylene**

**Synonym:** Ethine

Ethyne

Narcylen

Vinylene

**CAS No:** 74-86-2

**Use:** Unscheduled precursor to Lewisite 1

---

**Chemical: Aetznatron**

See: Sodium hydroxide

---

**Chemical: Agri-sul**

See: Sulfur

---

**Chemical: Alcare hand degermer**

See: Ethanol

---

**Chemical: Alcohol**

See: Ethanol

---

**Chemical: Alcohol anhydrous**

See: Ethanol

---

**Chemical: Algrain**

See: Ethanol

---

**Chemical: Aluminum chloride**

**Synonym:** Aluminum trichloride

**CAS No:** 7446-70-0

**Use:** Reaction catalyst in production of Lewisite 1; unscheduled precursor for "Perren-Kinnear" complex

---

**Chemical: Aluminum lithium hydride**

See: Lithium aluminum hydride

---

**Chemical: Aluminum trichloride**

See: Aluminum chloride

---

**Chemical: Amino methane**

See: Methylamine

---

**Chemical: Amiton**

**Synonym:** S-(2-diethylamino) ethyl,phosphoro-thioic acid O,O-Diethyl ester

DSDP

ENT 24

Inferno

Metramac

Tetram

R-5,150

Rhodia-6200

**Schedule:** 2A

**CAS No:** 78-53-5

**Synthesis:** 2-(N,Ndiethylamino) ethanol and O,Odiethyl phosphorothionochloridate

**Catalyst:** NaH, benzene, ethyl acetate, sodium sulfate, oxalic acid, ethanol, or ethyl ether

**Use:** Toxic chemical

---

**Chemical: Ammonia**

**Synonym:** Nitrosil  
R 717

Spirit of Hartshorn  
Ammonia gas  
Ammonia 14 N  
Refrigerant R717

**CAS No:** 7664-41-7

**Use:** Unscheduled precursor to  
Triethanolamine; reaction catalyst in  
production of Diethyl  
methylphosphonite

---

**Chemical: Ammonia 14 N**

**See:** Ammonia

---

**Chemical: Ammonia gas**

**See:** Ammonia

---

**Chemical: Amylene**

**See:** 2-Methyl-2-butane

---

**Chemical: Anhydrol**

**See:** Ethanol

---

**Chemical: Anhydrous  
hydrochloric acid**

**See:** Hydrochloric acid (HCl)

---

**Chemical: Anhydrous  
hydrofluoric acid**

**See:** Hydrogen fluoride

---

**Chemical: Antisal 2b**

**See:** Hydrogen fluoride

---

---

**Chemical: Arsenic trichloride**

**Synonym:** Trichloroarsine  
Butter of arsenic

Fuming liquid arsenic  
Arsenous trichloride

**Schedule:** 2B

**CAS No:** 7784-34-1

**Synthesis:** 1) arsenic trioxide and  
sulfur monochloride; 2) arsenic  
trioxide and thionyl chloride; 3)  
arsenic trioxide and hydrochloric  
acid

**Use:** Scheduled precursor to  
Lewisite 1

---

**Chemical: Arsenic trioxide**

**CAS No:** 1627-53-3

**Use:** Unscheduled precursor to  
Arsenic trichloride

---

**Chemical: Arsenous trichloride**

**See:** Arsenic trichloride

---

**Chemical: Artic**

**See:** Methyl chloride

---

**Chemical: Ascarite**

**See:** Sodium hydroxide

---

**Chemical: Asulfa-supra**

**See:** Sulfur

---

**Chemical: Atomic sulfur**

**See:** Sulfur

---

---

**Chemical: BCME**

**See:** Bis(chloromethyl)ether

---

**Chemical: Benzeneacetic  
acid, .alpha.-hydroxy-.alpha.-  
phenyl-**

**See:** 2,2-Diphenyl-2-hydroxyacetic  
acid

---

**Chemical: Benzenemethanol,  
alpha-diphenyl-**

**See:** Triphenylcarbinol

---

**Chemical: Benzil**

**Synonym:** Dibenzoyl

Bibenzoyl  
Diphenylglyoxal  
Ethanedione, diphenyl

**CAS No:** 134-81-6

**Use:** Unscheduled precursor to  
Benzilic acid; degradati

---

**Chemical: Benzilic acid**

**See:** 2,2-Diphenyl-2-hydroxyacetic  
acid

---

**Chemical: Benzilic acid, methyl  
ester**

**See:** Methyl benzilate

---

---

**Chemical: Benzoin**

**Synonym:** Ethanone, 2-hydroxyl-  
1,2-diphenyl

2-Hydroxy-1,2-diphenylethanone  
Benzoylphenylcarbinol  
Ethanone,2-hydroxy-1,2-diphenyl

**CAS No:** 119-53-9

**Use:** Unscheduled precursor to  
Benzilic acid

---

**Chemical: Benzoylphenylcarbinol**

**See:** Benzoin

---

**Chemical: Bertholite**

**See:** Chlorine

---

**Chemical: beta-beta'-  
Dihydroxydiethyl sulfide**

**See:** Bis(2-hydroxyethyl)sulfide

---

**Chemical: BFV**

**See:** Formaldehyde

---

**Chemical: Bialeski's solution**

**See:** Methanol

---

**Chemical: Bibenzoyl**

**See:** Benzil

---

**Chemical: Bicarburretted  
hydrogen**

**See:** Ethylene

---

**Chemical: Biogas**

**See:** Methane

---

---

**Chemical: Bis(2-[bis(1-methylethyl) amino] ethyl) ester**

**See:** Bis(2-diisopropylamino ethyl) methylphosphonite

---

**Chemical: Bis(2-diisopropylamino ethyl) methylphosphonite**

**Synonym:** LT  
Phosphonous acid, methyl-Bis(2-[bis(1-methylethyl) amino] ethyl) ester  
**Schedule:** 2B  
CAS No: 57856-12-9  
**Use:** Scheduled precursor to VX

---

**Chemical: Bis(1,2,2-trimethylpropyl) methyl phosphonate**

**See:** O,O-Dipinacolyl methylphosphonate

---

**Chemical: Bis(2-chloroethyl) disulfide**

**Synonym:** 1-Chloro-2-(2-chloroethyl)disulfanyl) ethane  
2,2'-Dichloroethyl)disulfide  
Disulfide, bis(2-chloroethyl)  
**CAS No:** 1002-41-1  
**Use:** Byproduct of HD

---

**Chemical: Bis(2-chloroethyl)ethylamine**

**See:** HN1

---

**Chemical: Bis(2-chloroethyl)methylamine**

**See:** HN2

---

**Chemical: Bis(2-chloroethyl)sulfide**

**Synonym:** Mustard gas  
H  
HS  
Yperite  
Mustard Oil (M.O.)  
D-Lost  
Yellow Cross  
Bis(2-chloroethyl)thioether  
1-Chloro-2-(2-chloroethylthio) ethane  
**Schedule:** 1A  
**CAS No:** 505-60-2  
**Synthesis:** 1) thiodiglycol and gaseous HCl; 2) sulfur monochloride and dry ethylene; 3) sulfur monochloride and pure ethylene; 4) sulfur dichloride in carbon tetrachloride and ethylene; 5) sulfur monochloride and ethylene saturated with alcohol  
**Use:** Toxic chemical

---

**Chemical: Bis(2-chloroethyl)thioether**

**See:** Bis(2-chloroethyl)sulfide

---

**Chemical: Bis(2-chloroethylthio)methane**

**Synonym:** DCES 1  
Ethane, 1,1'-(methylenebis(thio))bis(2-chloro-1,1-[methylenebis(thio)])bis[2-chloroethane]  
**Schedule:** 1A  
**CAS No:** 63869-13-6  
**Synthesis:** Bis(2-hydroxyethylthio)methane and thionyl chloride  
**Use:** Toxic chemical

---

**Chemical: Bis(2-chloroethylthioethyl)ether**

**See:** O-Mustard

---

**Chemical: Bis(2-chloroethylthiomethyl)ether**

**Synonym:** DCES MO  
Ethane, 1,1'-(oxybis(methylenethio))bis(2-chloro-1,1'-(oxybis(methylene))bis(2-chloroethane)  
**Schedule:** 1A  
CAS No: 63918-90-1  
**Synthesis:** 1) bis(2-hydroxyethylthioethyl)ether and thionyl chloride; 2) 2-hydroxyethanethiol and bis(chloromethyl)ether  
**Use:** Toxic chemical

---

**Chemical: Bis(2-chlorovinyl)chloroarsine**

**See:** Lewisite 2

---

**Chemical: Bis(2-hydroxyethyl)sulfide**

**Synonym:** Thiodiglycol  
Thiodiethylene glycol  
2,2-Dihydroxydiethylsulfide  
Glycine A  
EA 1019  
Tedegyl  
beta-beta'-Dihydroxy-diethyl sulfide  
Kromfax solvent  
**Schedule:** 2B  
**CAS No:** 111-48-8  
**Use:** Scheduled precursor to Mustard gas, Sesquimustard, HT, T, and Q

---

**Chemical: Bis(2-hydroxyethylthio)methane**

**Synonym:** Bis[(2-hydroxyethyl)thio]methane  
2,2'-[methylenedithio]diethanol  
Ethanol, 2,2'-(methylenebis(thio))bis-  
**CAS No:** 44860-68-6  
**Use:** Unscheduled precursor to Bis(2-chloroethylthio)methane

---

**Chemical: Bis(2-hydroxyethylthioethyl)ether**

**Synonym:** .beta,.beta'-Bis(2-hydroxyethylthio) ethyl ether  
2,2'-(oxybis(2,1-ethanediythio)) bis ethanol  
Ethanol,2,2'-(oxybis(2,1-ethanediythio))bis  
**CAS No:** 7426-02-0  
**Use:** Unscheduled precursor to Bis(2-chloroethylthio)methane

---

**Chemical: Bis(chloromethyl)ether**

**Synonym:** Methane, oxybis(chloro-Oxybis(chloromethane)  
BCME  
Bis-CME  
Chloromethyl ether  
**CAS No:** 542-88-1  
**Use:** Unscheduled precursor to Bis(2-chloroethylthiomethyl(ether)

---

**Chemical: Bis-CME**

**See:** Bis(chloromethyl)ether

---

**Chemical: Bis[(2-hydroxyethyl)thio]methane**

See: Bis(2-hydroxyethylthio)methane

---

**Chemical: Bisulfoid**

See: Sulfur

---

**Chemical: Blausaeure**

See: Hydrogen cyanide

---

**Chemical: Blauwzuer**

See: Hydrogen cyanide

---

**Chemical: Blsyra**

See: Hydrogen cyanide

---

**Chemical: Borate, tetrahydro-, sodium**

See: Sodium borohydride

---

**Chemical: Bromine cyanide**

See: Cyanogen bromide

---

**Chemical: Bromine monocyanoide**

See: Cyanogen bromide

---

**Chemical: Bromocyan**

See: Cyanogen bromide

---

**Chemical: Bromophenylmagnesium**

See: Phenyl magnesium bromide

---

**Chemical: Brown no.1**

See: Hydrogen cyanide

---

**Chemical: Butane, 2,2-dimethyl**

See: 2,2-Dimethylbutane

---

**Chemical: Butter of arsenic**

See: Arsenic trichloride

---

**Chemical: BZ**

Synonym: 3-quinuclidinyl benzilate  
3-benziloyl-1-azabicyclo[2.2.2]  
octane

Schedule: 2A

CAS No: 6581-11-1

Synthesis: 3-quinuclidinol and  
benzilic acid

Catalyst: Sodium methylate

Use: Toxic chemical

---

**Chemical: Campilit**

See: Cyanogen bromide

---

**Chemical: Carbinamine**

See: Methylamine

---

**Chemical: Carbinol**

See: Methanol

---

**Chemical: Carbon bisulfide**

See: Carbon disulfide

---

**Chemical: Carbon disulfide**

Synonym: Carbon disulphide

Carbon bisulfide

Carbon sulfide

NCI-CO4591

Sulphuret of Carbon

CAS No: 75-15-0

Use: Stabilizer for HN2 and HN3

---

**Chemical: Carbon disulphide**

See: Carbon disulfide

---

**Chemical: Carbon sulfide**

See: Carbon disulfide

---

**Chemical: Carbonic acid, disodium salt**

See: Sodium carbonate

---

**Chemical: Carbonyl dichloride**

See: Phosgene

---

**Chemical: Caustic soda**

See: Sodium hydroxide

---

**Chemical: Chemifluor**

See: Sodium fluoride

---

**Chemical: Chlorine**

Synonym: Bertholite

Chlorine molecule

Chlorine molecule (Cl<sub>2</sub>)

Diatomic chlorine

Dichlorine

Molecular chlorine

CAS No: 7782-50-5

Use: Unscheduled precursor to GB,  
GD, GF, and HD

---

**Chemical: Chlorine cyanide**

See: Cyanogen chloride

---

**Chemical: Chlorine molecule**

See: Chlorine

---

**Chemical: Chlorine molecule (Cl<sub>2</sub>)**

See: Chlorine

---

**Chemical: Chlorine sulfide**

See: Sulfur dichloride

---

**Chemical: Chloro (dimethylamino) ethane**

See: 2-(N,N-Dimethylamino) ethyl  
chloride

---

**Chemical: Chloro GD**

See: Chlorosoman

---

**Chemical: Chlorobis(2-chlorovinyl)arsine**

See: Lewisite 2

---

**Chemical: Chlorocyan**

See: Cyanogen chloride

---

**Chemical: Chlorocyanide**

See: Cyanogen chloride

---

**Chemical: Chlorocyanogen**

See: Cyanogen chloride

---

**Chemical: Chloroethene VCL**

See: Vinyl chloride

---

**Chemical: Chloroethylene**

See: Vinyl chloride

---

**Chemical: Chlorohydric acid**

See: Hydrochloric acid (HCl)

---

**Chemical: Chloromethane**

See: Methyl chloride

---

**Chemical: Chloromethyl ether**

See: Bis(chloromethyl)ether

---

**Chemical:  
Chlorophosphonothioic  
acid O,O-diethyl ester**

See: O,O-Diethyl  
phosphorothionochloridate

---

**Chemical: Chloropicrin**

**Synonym:** Trichloronitromethane  
Nitrochloromethane

Nitrochloroform

**Schedule:** 3A

**CAS No:** 76-06-2

**Synthesis:** Picric acid (2,4,6-trinitrophenol) and calcium hypochlorite bleach or lime, bleach, stannic chloride

**Use:** Incapacitating agent; tear gas formulations

---

**Chemical: Chlorosarin**

**Synonym:** O-Isopropyl  
methylphosphonochloridate

**Schedule:** 1B

**CAS No:** 1445-76-7

**Synthesis:** DIMP, O-O-diisopropyl  
methylphosphonate

**Use:** Scheduled precursor to Sarin

---

**Chemical: Chlorosoman**

**Synonym:** O-Pinacolyl  
methylphosphonochloridate  
Chloro GD

**Schedule:** 1B

**CAS No:** 7040-57-5

**Synthesis:** methyl-phosphonic  
dichloride and pinacol

**Use:** Scheduled precursor to  
Soman

---

**Chemical: Clocat F**

See: Potassium fluoride

---

**Chemical: Colamine**

See: Ethanolamine

---

**Chemical: Copper (II) chloride**

See: Cupric chloride

---

**Chemical:  
Copper chloride (CuCl<sub>2</sub>)**

See: Cupric chloride

---

**Chemical: Corrosive sublimate**

See: Mercuric chloride

---

**Chemical: Cosan 80**

See: Sulfur

---

**Chemical: Cupric chloride**

**Synonym:** Copper (II) chloride

Copper chloride (CuCl<sub>2</sub>)

**CAS No:** 7447-39-4

**Use:** Unscheduled precursor to L

---

**Chemical: CV**

See: O-Ethyl O-2-  
Diisopropylaminoethyl  
methylphosphonothionate

---

**Chemical: Cyanide of sodium**

See: Sodium cyanide

---

**Chemical: Cyanogen bromide**

**Synonym:** Cyanogen bromide  
((CN)

BR)

Bromine cyanide

Bromine monocyanoide

Bromocyan

Campilit

**CAS No:** 506-68-3

**Use:** Unscheduled precursor to  
Tabun

---

**Chemical:  
Cyanogen bromide ((CN) BR)**

See: Cyanogen bromide

---

**Chemical: Cyanogen chloride**

**Synonym:** Chlorocyan

Chlorocyanide

Chlorocyanogen

Chlorine cyanide

**Schedule:** 3A

**CAS No:** 506-77-4

**Synthesis:** 1) potassium-  
zinccyanide

complex and chlorine gas;

2) nitrogen and carbon

tetrachloride; 3) sodium cyanide

and chlorine; 4) hydrogen cyanide

and chlorine

**Use:** Toxic chemical

---

**Chemical: Cyanohydrin**

formaldehyde

See: Hydroxyacetoneitrile

---

**Chemical: Cyanomethanol**

See: Hydroxyacetoneitrile

---

**Chemical: Cymag**

See: Sodium cyanide

---

**Chemical: Cynogran**

See: Sodium cyanide

---

**Chemical: D-Lost**

See: Bis(2-chloroethyl)sulfide

---

**Chemical: DC**

See: Methylphosponyl dichloride

---

**Chemical: DCES 1**

See: Bis(2-chloroethylthio)methane

---

**Chemical: DCES 5**

See: 1,5-Bis(2-chloroethylthio)-  
npentane

---

**Chemical: DCES MO**

See: Bis(2-  
chloroethylthiomethyl)ether

---

**Chemical: DDPNA**

See: Diethyl N,N-dimethyl  
phosphoramidate

---

**Chemical: DEA**

See: Diethanolamine

---

**Chemical: Decon 4512**

See: Phosphoric acid

---

**Chemical: DEDMPNA**

See: Diethyl N,N-dimethyl  
phosphoramidate

---

**Chemical: DEEP**

See: Diethyl ethylphosphonate

---

**Chemical: DEHP**

See: Diethyl phosphite

---

**Chemical: DEPCI**

See: Diethylphosphorachloridite

---

**Chemical: DF**

See: Methylphosponyl difluoride

---

**Chemical:  
Di-npropylphosphoramidic  
dichloride**

See: N,N Dipropylphosphoramidic  
dichloride

---

**Chemical: Diatomic chlorine**

See: Chlorine

---

**Chemical: Dibenzoyl**

See: Benzil

---

**Chemical: Dichlor**

See: Methylphosponyl dichloride

---

**Chemical: Dichlorine**

See: Chlorine

---

**Chemical:  
Dichloroethylphosphine oxide**

See: Ethylphosphonic dichloride

---

**Chemical: Dichloromethane**

See: Methylene dichloride

---

**Chemical:  
Dichloromethylphosphine sulfide**

See: Methylphosphonothioic  
dichloride

---

**Chemical: Dichlorosulfane**

See: Sulfur dichloride

---

**Chemical:  
Dichloro ethyl phosphine**

See: Ethylphosphonous dichloride

---

**Chemical: Diethanol amine**

See: Diethanolamine

---

**Chemical: Diethanolamine**

Synonym: Ethanol,2,2'-iminobis-  
Diethanol amine  
2,2'-Iminodiethanol  
DEA  
Diolamine

CAS No: 111-42-2

Use: Unscheduled precursor to  
HN1 and HN2

---

**Chemical:  
Diethoxyethylphosphine oxide**

See: Diethyl ethylphosphonate

---

**Chemical: Diethyl (2-  
mercaptoethyl) amine**

See: N,N-Diethylaminoethanethiol

---

**Chemical:  
Diethyl chlorophosphite**

See: Diethylphosphorachloridite

---

**Chemical: Diethyl  
dimethylphosphoramidate**

See: Diethyl N,N-dimethyl  
phosphoramidate

---

**Chemical: Diethyl  
dimethylphosphoramidite**

See: O,O-Diethyl  
N,Ndimethylphosphoramidite

---

**Chemical: Diethyl  
dimethylphosphoramidous acid**

See: O,O-Diethyl  
N,Ndimethylphosphoramidite

---

**Chemical:  
Diethyl ethylphosphonate**

Synonym: DEEP  
Phosphonic acid, ethyl-, diethyl  
ester  
Diethoxyethylphosphine oxide

Schedule: 2B

CAS No: 78-38-6

Use: Scheduled precursor to  
Ethylsarin



---

**Chemical: Diethyl methylphosphonite**

**Synonym:** TR  
O,O-Diethyl ester of methylphosphonous acid  
**Schedule:** 2B  
**CAS No:** 15715-41-0  
**Synthesis:** Methylphosphonous dichloride and ethanol  
**Catalyst:** Ammonia  
**Use:** Scheduled precursor to QL

---

**Chemical: Diethyl methylphosphonothionate**

**See:** O,O Diethyl methylphosphonothionate

---

**Chemical: Diethyl N,N-dimethyl phosphoramidate**

**Synonym:** DEDMPNA  
DDPNA  
Diethyl  
N,Ndimethylphosphoramidate  
Diethyl dimethylphosphoramidate  
**Schedule:** 2B  
**CAS No:** 2404-03-7  
**Use:** Scheduled precursor to Tabun

---

**Chemical: Diethyl N,Ndimethylphosphoramidate**

**See:** Diethyl N,N-dimethyl phosphoramidate

---

**Chemical: Diethyl phosphite**

**Synonym:** Diethylphosphite  
DEHP  
Diethyl phosphonate  
**Schedule:** 3B  
**CAS No:** 762-04-9  
**Synthesis:** Phosphorous trichloride and ethanol  
**Catalyst:** NaOH  
**Use:** Scheduled precursor to VG, Sarin, Soman, and GF

---

**Chemical: Diethyl phosphonate**

**See:** Diethyl phosphite

---

**Chemical: Diethyl phosphorochloridate**

**See:** O,O Diethylphosphorochloridate

---

**Chemical: Diethyl phosphorothiochloridate**

**See:** O,O-Diethyl phosphorothionochloridate

---

**Chemical: Diethyl sodium phosphite**

**See:** Sodium O,O-diethyl phosphite

---

**Chemical: Diethyl sodium phosphonate**

**See:** Sodium O,O-diethyl phosphite

---

**Chemical: Diethylamine**

**Synonym:** N-Ethylethanamine  
Ethanamine, N-ethyl-  
**CAS No:** 109-89-7  
**Use:** Unscheduled precursor to 2-(N,N-diethylamino)ethanol

---

**Chemical: Diethylcysteamine**

**See:** N,N-Diethylaminoethanethiol

---

**Chemical: Diethylene glycol**

**CAS No:** 111-46-6  
**Use:** Unscheduled reaction catalyst in production of DMMP

---

**Chemical: Diethylphosphorachloridite**

**Synonym:** DEPCI  
Phosphorochloridous acid, diethyl ester  
Diethyl chlorophosphite  
Ethyl phosphorochloridite  
**CAS No:** 589-57-1  
**Use:** Unscheduled precursor to Tabun

---

**Chemical: Difluor**

**See:** Methylphosphonyl difluoride

---

**Chemical: Difluor (ethyl) phosphine**

**See:** Ethylphosphonous difluoride

---

**Chemical: DIHP**

**Synonym:** Diisopropyl phosphite  
**CAS No:** 1809-20-9  
**Use:** Unscheduled precursor to DIMP

---

**Chemical: Diisopropyl ester of methylphosphonic acid**

**See:** DIMP

---

**Chemical: Diisopropyl hydrogen phosphonate**

**See:** O,O-Diisopropyl hydrogenphosphonate

---

**Chemical: Diisopropyl phosphinate**

**See:** Diisopropyl phosphonate

---

**Chemical: Diisopropyl phosphite**

**See:** DIHP

---

**Chemical: Diisopropyl phosphonate**

**Synonym:** Phosphonic acid, diisopropyl ester  
Phosphonic acid, bis(1-methyl ethyl) ester  
Isopropyl isopropylphosphinate  
Diisopropyl phosphinate  
**CAS No:** 1809-20-7  
**Use:** Unscheduled precursor to Sarin, GE, and DIMP

---

**Chemical: Diisopropylamine**

**Synonym:** DIPA  
N,N-Diisopropylamine  
2-Propanamine, N-(1-Methylethyl)-  
**CAS No:** 108-18-9  
**Use:** VX

---

**Chemical:  
Diisopropylaminoethanethiol**

**See:** N,N-Diisopropylaminoethanethiol

---

**Chemical:  
Dilute hydrochloric acid**

**See:** Hydrochloric acid (HCl)

---

**Chemical: Dimethyl  
(2-chloroethyl) amine**

**See:** 2-(N,N-Dimethylamino) ethyl chloride

---

**Chemical: Dimethyl amine**

**See:** Dimethylamine

---

**Chemical: Dimethyl ester of  
methylphosphonic acid**

**See:** Dimethyl methylphosphonate

---

**Chemical: Dimethyl  
ethanephosphonate**

**See:** Dimethyl ethylphosphonate

---

**Chemical: Dimethyl  
ethylphosphonate**

**Synonym:** Ethane phosphonic acid, dimethyl ester  
Phosphonic acid, ethyl-, dimethyl ester  
Dimethyl ethanephosphonate  
**CAS No:** 6163-75-3  
**Use:** Ethyl sarin

---

**Chemical: Dimethyl  
methylphosphonate**

**Synonym:** DMMP  
Dimethyl ester of methylphosphonic acid  
**Schedule:** 2B  
**CAS No:** 756-79-6  
**Synthesis:** 1) DMHP, methyl Chloride, and metallic sodium; 2) trimethyl phosphite  
**Catalyst:** 1) Diethylene glycol; 2) methyl iodide  
**Use:** Scheduled precursor to DC

---

**Chemical: Dimethylamine**

**Synonym:** Dimethyl amine  
Methanamine, N-methyl-  
N,N-Dimethylamine  
N-Methylmethanamine  
**CAS No:** 124-40-3  
**Use:** Unschedule precursor to Tabun

---

**Chemical: Dimethylamine HCl**

**Synonym:** Dimethylamine hydrochloride  
Dimethylammonium chloride  
Methanamine, N-methyl-, hydrochloride  
N-Methylmethanamine hydrochloride  
**CAS No:** 506-59-2  
**Use:** Unschedule precursor to Tabun

---

**Chemical:  
Dimethylamine hydrochloride**

**See:** Dimethylamine HCl

---

**Chemical:  
Dimethylaminoethyl chloride**

**See:** 2-(N,N-Dimethylamino) ethyl chloride

---

**Chemical: Dimethylaminoethyl  
chloride hydrochloride**

**See:** (N,N-Dimethylamino) ethyl chloride hydrochloride

---

**Chemical:  
Dimethylammonium chloride**

**See:** Dimethylamine HCl

---

**Chemical: dimethylene oxide**

**See:** Ethylene oxide

---

**Chemical: Dimethyl phosphite**

**Synonym:** DMHP  
O,O-Dimethylphosphonate  
**Schedule:** 3B  
**CAS No:** 868-85-9  
**Synthesis:** Phosphorous trichloride and methanol  
**Catalyst:** Methyl chloride  
**Use:** Scheduled precursor to DMMP

---

**Chemical:  
Dimethylphosphoramidic  
dicyanide**

**See:** N,N-Dimethylphosphoramidic dicyanide

---

**Chemical: DIMP**

**Synonym:** O-O-diisopropyl methylphosphonate  
Diisopropyl ester of methylphosphonic acid  
**Schedule:** 2B  
**CAS No:** 1445-75-6  
**Synthesis:** DIHP, metallic sodium and methyl chloride  
**Catalyst:** Diethylene glycol  
**Use:** Scheduled precursor to Chlorosarin

---

**Chemical: Diolamine**

**See:** Diethanolamine

---

**Chemical: DIPA**

**See:** Diisopropylamine

---

**Chemical: Diphenylglycolic acid methyl ester**

See: Methyl benzilate

---

**Chemical: Diphenylglyoxal**

See: Benzil

---

**Chemical: Diphosgene**

CAS No: 503-38-8

Use: Unscheduled precursor to Phosgene

---

**Chemical: Diphosphonic acid, dimethyl**

See: 1,2-Dimethyldiphosphonic acid

---

**Chemical: Dipropylethanolamine**

See: 2-(N,N-Dipropylamino) ethanol

---

**Chemical: Disodium monosulfide**

See: Sodium sulfide

---

**Chemical: Disodium sulfide**

See: Sodium sulfide

---

**Chemical: Disulfide, bis(2-chloroethyl)**

See: Bis(2-chloroethyl) disulfide

---

**Chemical: Disulfur dichloride**

See: Sulfur monochloride

---

**Chemical: Dithioglycol**

See: 1,2-Ethanedithiol

---

**Chemical: Divinyl sulfide**

Synonym: 1,1'-Thiobisethene

Divinyl thioether

Vinyl sulfide

Vinylsulfanylene

CAS No: 627-51-0

Use: Unscheduled precursor to HD

---

**Chemical: Divinyl thioether**

See: Divinyl sulfide

---

**Chemical: DMHP**

See: Dimethyl phosphite

---

**Chemical: DMMP**

See: Dimethyl methylphosphonate

---

**Chemical: Doppel-O**

See: Sesquimustard

---

**Chemical: DPMP**

See: O,O-Dipinacolyl methylphosphonate

---

**Chemical: DSDP**

See: Amiton

---

**Chemical: E-DC**

See: Ethylphosphonic dichloride

---

**Chemical: E-DF**

See: Ethylphosphonyl difluoride

---

**Chemical: E-GD**

See: O-Pinacolyl ethylphosphonofluoridate

---

**Chemical: EA 1019**

See: Bis(2-hydroxyethyl)sulfide

---

**Chemical: EA 2192**

See: S-2-Diisopropylaminoethyl methylphosphonothioic acid

---

**Chemical: EDMPNC**

See: O-Ethyl N,N-dimethyl phosphoramidochloridate

---

**Chemical: Elayl**

See: Ethylene

---

**Chemical: English Lost**

See: O-Mustard

---

**Chemical: ENT 24**

See: Amiton

---

**Chemical: Ethanamine**

See: Ethylamine

---

**Chemical: Ethanamine, 2-chloro-N,N-bis(2-chloroethyl)**

See: Tris(2-chloroethyl) amine hydrochloride

---

**Chemical: Ethanamine, 2-chloro-N,N-diethyl**

See: 2-(N,N-Diethylamino)ethyl chloride

---

**Chemical: Ethanamine, N-ethyl-**

See: Diethylamine

---

**Chemical: Ethane phosphonic acid, dimethyl ester**

See: Dimethyl ethylphosphonate

---

**Chemical: Ethane, 1,1'-(methylenebis(thio))bis(2-chloro-**

See: Bis(2-chloroethylthio)methane

---

**Chemical: Ethane, 1,1'-(oxybis(methylenethio))bis(2-chloro-**

See: Bis(2-chloroethylthiomethyl)ether

---

**Chemical: Ethane, tetrafluoro-**

See: Tetrafluoroethylene

---

**Chemical: Ethanedione, diphenyl**

See: Benzil

---

**Chemical: Ethanephosphonyl chloride**

See: Ethylphosphonic dichloride

---

**Chemical: Ethanethiol, 2-(diethylamino)**

See: N,N-Diethylaminoethanethiol

---

**Chemical: Ethanethiol, 2-(diisopropylamino)-**

**See:**  
N,N-diisopropylaminoethanethiol

---

**Chemical: Ethanol**

**Synonym:** Alcare hand degermer  
Alcohol  
Alcohol anhydrous  
Algrain  
Anhydrol  
**CAS No:** 64-17-5  
**Use:** Unscheduled precursor to BZ, Diethyl phosphite, and Triethyl phosphite

---

**Chemical: Ethanol, 2,2',2'', -**

nitrilotris-, hydrochloride  
**See:** Triethanolamine hydrochloride (HN-3)

---

**Chemical: Ethanol, 2,2'-(methylenebis(thio))bis-**

**See:** Bis(2-hydroxyethylthio)methane

---

**Chemical: Ethanol, 2-(bis(1-methylethyl)amino)**

**See:** N,N-diisopropyl-(beta)-aminoethanol

---

**Chemical: Ethanol, 2-(dipropylamino)-**

**See:** 2-(N,N-Dipropylamino)ethanol

---

**Chemical: Ethanol, 2-chloro-**

**See:** 2-Chloroethanol

---

**Chemical: Ethanol, 2-mercapto-**

**See:** 2-Hydroxyethanethiol

---

**Chemical: Ethanol,2,2'-(oxybis(2,1-ethanediythio))bis**

**See:** Bis(2-hydroxyethylthio)ether

---

**Chemical: Ethanol,2,2'-iminobis-**

**See:** Diethanolamine

---

**Chemical: Ethanol,2-amino-**

**See:** Ethanolamine

---

**Chemical: Ethanolamine**

**Synonym:** Ethanol,2-amino-  
Colamine  
Ethylolamine  
Glycinol  
MEA  
MEA (alcohol)  
**CAS No:** 141-43-5

---

**Chemical: Ethanone, 2-hydroxy-1,2-diphenyl**

**See:** Benzoin

---

**Chemical: Ethanone,2-hydroxy-1,2- diphenyl**

**See:** Benzoin

---

**Chemical: Ethene**

**See:** Ethylene

---

**Chemical: Ethene, tetrafluoro-, homopolymer**

**See:** Polytetrafluoroethylene

---

**Chemical: Ethine**

**See:** Acetylene

---

**Chemical: Ethoxymethylphosphine oxide**

**See:** O-Ethyl methyl phosphinic acid

---

**Chemical: Ethyl 4-(ethyoxycarbonyl)-1-piperidine acetic acid**

**See:** 1-Carboethoxymethyl-4-carboethoxypiperidine

---

**Chemical: Ethyl chlorohydrin**

**See:** 2-Chloroethanol

---

**Chemical: Ethyl difluorophosphite**

**See:** Ethylphosphonyl difluoride

---

**Chemical: Ethyl GB**

**See:** O-Isopropyl ethylphosphonofluoridate

---

**Chemical: Ethyl GD**

**See:** O-Pinacolyl ethylphosphonofluoridate

---

**Chemical: Ethyl isonicotinate**

**Synonym:** 4-Pyridinecarboxylic acid, ethyl ester, gamma-Pyridine carboxylic acid, ethyl ester  
**CAS No:** 1570-45-2  
**Use:** Unscheduled precursor to 3-Quinuclidinone hydrochloride

---

**Chemical: Ethyl methylphosphinate**

**See:** O-Ethyl methyl phosphinic acid

---

**Chemical: Ethyl N,N-dimethylphosphoramidochloridate**

**See:** O-Ethyl N,N-dimethyl phosphoramidochloridate

---

**Chemical: Ethyl phosphine dichloride**

**See:** Ethylphosphonous dichloride

---

**Chemical: Ethyl phosphinyl difluoride**

**See:** Ethylphosphonous difluoride

---

**Chemical: Ethyl phosphonic difluoride**

**See:** Ethylphosphonyl difluoride

---

**Chemical: Ethyl phosphonyl dichloride**

**See:** Ethylphosphonic dichloride

---

**Chemical:**  
**Ethyl phosphorochloridite**

See: Diethylphosphorachloridite

---

**Chemical: Ethyl ThioMPA**

See: O-Ethyl  
methylphosphonothiolic acid

---

**Chemical: Ethyl-S**

See: HN1

---

**Chemical: Ethylamine**

**Synonym:** 1-Aminoethane  
Ethanamine  
Monoethylamine  
n-Ethylamine  
**CAS No:** 75-04-7  
**Use:** Unscheduled precursor to  
HN1

---

**Chemical: Ethyldiethanolamine**

**Synonym:** 2,2-(ethylimino)diethanol  
N-ethyl-2-2-iminodiethanol  
**Schedule:** 3B  
**CAS No:** 139-87-7  
**Synthesis:** Ethylamine with  
ethylene oxide  
**Use:** Scheduled precursor to HN1

---

**Chemical:**  
**Ethyldifluorophosphine**

See: Ethylphosphonous difluoride

---

**Chemical: Ethylene**

**Synonym:** Ethene  
Acetene  
Bicarburretted hydrogen  
Elayl  
Olefiant gas  
**CAS No:** 74-85-1  
**Use:** Unscheduled precursor to HD

---

**Chemical: Ethylene chlorhydrin**

See: 2-Chloroethanol

---

**Chemical: Ethylene oxide**

**Synonym:** dimethylene oxide  
1,2-Epoxyethane  
oxiran  
**CAS No:** 75-21-8  
**Use:** Unscheduled precursor to  
Triethanolamine,  
2-(N,Ndiethylamino)  
ethanol

---

**Chemical: Ethylolamine**

See: Ethanolamine

---

**Chemical: Ethylphosphonic  
dichloride**

**Synonym:** E-DC  
Dichloroethylphosphine oxide  
Ethanephosphonyl chloride  
Ethyl phosphonyl dichloride  
**CAS No:** 1066-50-8  
**Use:** Ethyl sarin

---

**Chemical:**  
**Ethylphosphonous dichloride**

**Synonym:** Phosphonous  
dichloride, ethyl-  
Dichloro ethyl phosphine  
Ethyl phosphine dichloride  
**CAS No:** 1498-40-4  
**Use:** VE, VS, and Ethyl sarin

---

**Chemical:**  
**Ethylphosphonous difluoride**

**Synonym:** Difluor (ethyl) phosphine  
Ethyl phosphinyl difluoride  
Ethyldifluorophosphine  
Phosphonous, difluoride, ethyl-  
**CAS No:** 430-78-4  
**Use:** VE and Ethyl sarin

---

**Chemical:**  
**Ethylphosphonyl difluoride**

**Synonym:** Ethyl phosphonic  
difluoride  
Ethyl difluorophosphite  
E-DF  
**CAS No:** 753-98-0  
**Use:** Ethyl sarin

---

**Chemical: Ethylsarin**

See: O-Isopropyl  
ethylphosphonofluoridate

---

**Chemical: Ethylsoman**

See: O-Pinacolyl  
ethylphosphonofluoridate

---

**Chemical: Ethyne**

See: Acetylene

---

**Chemical: EVITs**

See: Phosphoric acid

---

**Chemical: FA**

See: Formaldehyde

---

**Chemical: Fannoform**

See: Formaldehyde

---

**Chemical: FDA 0101**

See: Sodium fluoride

---

**Chemical: Floguard 1015**

See: Formaldehyde

---

**Chemical: Floridine**

See: Sodium fluoride

---

**Chemical: Fluohydric acid gas**

See: Hydrogen fluoride

---

**Chemical: Fluohydric gas**

See: Hydrogen fluoride

---

**Chemical: Fluorigard**

See: Sodium fluoride

---

**Chemical: Fluorol**

See: Sodium fluoride

---

**Chemical: Flursol**

See: Sodium fluoride

---

**Chemical: FM 282**

See: Formaldehyde

---

**Chemical: Formaldehyde**

Synonym: BFV

FA

FM 282

Fannoform

Floguard 1015

CAS No: 50-00-0

Use: Unscheduled precursor to HN2

---

**Chemical: Fuming liquid arsenic**

See: Arsenic trichloride

---

**Chemical: g-Picolinic acid**

See: Isonicotinic acid

---

**Chemical: g-Pyridinecarboxylic acid**

See: Isonicotinic acid

---

**Chemical: GA**

See: Tabun

---

**Chemical: gamma-Piridine carboxylic acid, ethyl ester**

See: Ethyl isonicotinate

---

**Chemical: GB**

See: Sarin

---

**Chemical: GD**

See: Soman

---

**Chemical: GE**

See: O-Isopropyl ethylphosphonofluoridate

---

**Chemical: Glycerinol**

See: Ethanolamine

---

**Chemical: Glycolonitrile**

See: Hydroxyacetoneitrile

---

**Chemical: Glycine A**

See: Bis(2-hydroxyethyl)sulfide

---

**Chemical: H**

See: Bis(2-chloroethyl)sulfide

---

**Chemical: Hexafluoropropylene**

See: Perfluoropropylene

---

**Chemical: HN1**

Synonym: Bis(2-chloroethyl)ethylamine  
1149

2-2-Dichlorothrethylamine

Ethyl-S

T-1790

Schedule: 1A

CAS No: 538-07-8

Synthesis: Ethyl diethanolamine and thionyl chloride

Catalyst: Benzene; chloroform or ethylene chloride

Use: Toxic chemical

---

**Chemical: HN2**

Synonym: Bis(2-chloroethyl)methylamine  
1130

S

Schedule: 1A

CAS No: 51-75-2

Synthesis: Methyl diethanolamine and thionyl chloride

Catalyst: Ethylene dichloride or chloroform

Use: Toxic chemical

---

**Chemical: HN3**

Synonym: Tris(2-chloroethyl)amine  
2,2,2-Trichlorothrethylene  
Nitrogen Mustard  
1070

Nitrogen yperite

Nitrogen Lost

T9

TBA

Schedule: 1A

CAS No: 555-77-1

Synthesis: Triethanolamine and thionyl chloride

Catalyst: Benzene

Use: Toxic chemical

---

**Chemical: HS**

See: Bis(2-chloroethyl)sulfide

---

**Chemical: Hydrochloric acid (HCl)**

Synonym: Anhydrous hydrochloric acid

Chlorohydric acid

Dilute hydrochloric acid

CAS No: 7647-01-0

Use: Unscheduled precursor to Arsenic trichloride

---

**Chemical: Hydrocyanic acid, sodium salt**

See: Sodium cyanide

---

**Chemical: Hydrogen cyanide**

Synonym: AC

Blausaeure

Blauwzuer

Blsyra

Brown no.1

Schedule: 3B

CAS No: 74-90-8

Synthesis: 1) ammonia, methane, and hydrogen; 2) ammonia and methane in the absence of air; 3) hydrogen, nitrogen, and coal

Catalyst: 1) platinum; 2) platinum

Use: Toxic chemical

---

**Chemical: Hydrogen fluoride**

Synonym: Antisal 2b

Anhydrous hydrofluoric acid

Fluohydric acid gas

Fluohydric gas

CAS No: 7664-39-3

Use: Unscheduled precursor to DF, PFIB, and Sarin

---

**Chemical: hydroxy-.alpha.-phenyl-**

See: 2,2-Diphenyl-2-hydroxyacetic acid

---

**Chemical: Hydroxyacetoneitrile**

Synonym: Cyanomethanol

Cyanohydrin formaldehyde

Glycolonitrile

CAS No: 107-16-4

Use: Unscheduled precursor to HN2

---

**Chemical: I-GA**

**See:** O-Ethyl N,N-diisopropyl phosphoramidocyanidate

---

**Chemical: I-GD**

**See:** O-Pinacolyl isopropyl phosphonofluoridate

---

**Chemical: Inferno**

**See:** Amiton

---

**Chemical: Iodomethane**

**See:** Methyl iodide

---

**Chemical: Isobutenyl methyl ketone**

**See:** Mesityl oxide

---

**Chemical: Isonicotinic acid**

**Synonym:** 4-Pyridinecarboxylic acid

g-Pyridinecarboxylic acid

g-Picolinic acid

**CAS No:** 55-22-1

**Use:** Unscheduled precursor to 3-Quinuclidinone hydro

---

**Chemical: Isopropanol**

**Synonym:** Isopropyl alcohol

2-Propanol

1-Methyl ethanol

2-Hydroxypropane

2-Propyl alcohol

**CAS No:** 67-63-0

**Use:** Unscheduled precursor to Sarin

---

**Chemical: Isopropyl alcohol**

**See:** Isopropanol

---

**Chemical: Isopropyl ethylphosphonofluoridate**

**See:** O-Isopropyl ethylphosphonofluoridate

---

**Chemical: Isopropyl GA**

**See:** O-Ethyl N,N-diisopropyl phosphoramidocyanidate

---

**Chemical: Isopropyl GD**

**See:** O-Pinacolyl isopropyl phosphonofluoridate

---

**Chemical: Isopropyl GF, I-GF**

**See:** O-Cyclohexanyl isopropyl phosphonofluoridate

---

**Chemical: Isopropyl isopropylphosphinate**

**See:** Diisopropyl phosphonate

---

**Chemical: Isopropyl sodium phosphite**

**See:** Sodium diisopropyl phosphonate

---

**Chemical: Isopropylideneacetone**

**See:** Mesityl oxide

---

**Chemical: KB**

**See:** N,N-Diisopropyl-(beta)-aminoethanol

---

**Chemical: KCL III**

**See:** Ricin

---

**Chemical: KCL IV**

**See:** Ricin

---

**Chemical: Kefo**

**See:** Phosphoric acid

---

**Chemical: Kromfax solvent**

**See:** Bis(2-hydroxyethyl)sulfide

---

**Chemical: Lewisite 1**

**Synonym:** 2-

Chlorovinyl-dichloroarsine

2-chloroethanyl-dichloroarsine

M-1

Lyuizit

R-5

**Schedule:** 1A

**CAS No:** 541-25-3

**Synthesis:** 1) arsenic trichloride and acetylene; 2) arsenic trichloride and trichloro(2-chlorovinyl) silicide; 3) arsenic trichloride and acetylene; 4) arsenic trichloride and acetylene

**Catalyst:** 1) aluminum chloride; 2) cuprous chloride w/ ethanolamine hydrochloride; 3) mercuric chloride/ hydrochloric acid

**Use:** Toxic chemical

---

**Chemical: Lewisite 2**

**Synonym:** Bis(2-chlorovinyl)chloroarsine

M-2

Chlorobis(2-chlorovinyl)arsine

**Schedule:** 1A

**CAS No:** 40334-69-8

**Synthesis:** Lewisite 2 is a 10% coproduct of Lewisite 1 (1st process)

**Use:** Toxic chemical

---

**Chemical: Lewisite 3**

**Synonym:** Tris(2-chlorovinyl)arsine

M-3

**Schedule:** 1A

**CAS No:** 40334-70-1

**Synthesis:** Lewisite 3 is a <10% coproduct of Lewisite 1 (1st process)

**Use:** Toxic chemical

---

**Chemical: Lithium (T-4) aluminate**

**See:** Lithium aluminum hydride

---

**Chemical: Lithium aluminum hydride**

**Synonym:** Aluminum lithium hydride

Sodium tetrahydroborate

Lithium (T-4) aluminate

**CAS No:** 16853-85-3

**Use:** Unscheduled precursor to BZ

---

**Chemical: LT**

**See:** Bis(2-diisopropylamino ethyl) methylphosphonite

---

**Chemical: Lyuizit**

See: Lewisite 1

---

**Chemical: M-1**

See: Lewisite 1

---

**Chemical: M-2**

See: Lewisite 2

---

**Chemical: M-3**

See: Lewisite 3

---

**Chemical:  
Magnesium, bromophenyl**

See: Phenyl magnesium bromide

---

**Chemical: Marsh gas**

See: Methane

---

**Chemical: MEA**

See: Ethanolamine

---

**Chemical: MEA (alcohol)**

See: Ethanolamine

---

**Chemical: Mercurialin**

See: Methylamine

---

**Chemical: Mercuric chloride**

**Synonym:** Mercury chloride  
(HgCl<sub>2</sub>)

Mercury (II) chloride  
Mercury bichloride  
Mercury perchloride  
Corrosive sublimate

**CAS No:** 7487-94-7

**Use:** Reaction catalyst in  
production of Lewisite 1

---

**Chemical: Mercury (II) chloride**

See: Mercuric chloride

---

**Chemical: Mercury bichloride**

See: Mercuric chloride

---

**Chemical:  
Mercury chloride (HgCl<sub>2</sub>)**

See: Mercuric chloride

---

**Chemical: Mercury perchloride**

See: Mercuric chloride

---

**Chemical: Mesityl oxide**

**Synonym:** 4-Methyl-3-penten-2-one  
3-Penten-2-one,4-methyl  
Isopropylideneacetone  
Isobutenyl methyl ketone

**CAS No:** 141-79-7

**Use:** Unscheduled precursor to  
Pinacolone

---

**Chemical: Methanamine**

See: Methylamine

---

**Chemical: Methanamine,  
N-methyl-**

See: Dimethylamine

---

**Chemical: Methanamine,  
N-methyl-, hydrochloride**

See: Dimethylamine HCl

---

**Chemical: Methane**

**Synonym:** Biogas

Marsh gas

Methyl hydride

R 50

R 50 (refrigerant)

**CAS No:** 74-82-8

**Use:** Unscheduled precursor to  
Sarin, Soman, and VX

---

**Chemical: Methane dichloride**

See: Methylene dichloride

---

**Chemical: Methane, chloro**

See: Methyl chloride

---

**Chemical: Methane, dichloro**

See: Methylene dichloride

---

**Chemical: Methane, iodo**

See: Methyl iodide

---

**Chemical: Methane,  
oxybis(chloro-**

See: Bis(chloromethyl)ether

---

**Chemical: Methanol**

**Synonym:** Bialeski's solution  
Carbinol

Methyl alcohol

Methyl hydrate

Methyl hydroxide

**CAS No:** 67-56-1

**Use:** Reaction catalyst in  
production of 2-(N,Ndiethylamino)  
ethanol

---

**Chemical: Methanol, sodium salt**

See: Sodium methylate

---

**Chemical: Methyl alcohol**

See: Methanol

---

**Chemical: Methyl benzilate**

**Synonym:** Methyl ester

Methyl diphenylglycolate

Diphenylglycolic acid methyl ester

Benzilic acid, methyl ester

Methyl hydroxydiphenylacetate

**CAS No:** 76-89-1

**Use:** BZ

---

**Chemical: Methyl chloride**

**Synonym:** Chloromethane

Artic

Methane, chloro

Monochloromethane

R 40

**CAS No:** 74-87-3

**Use:** Unscheduled precursor to  
DIMP and DMMP



---

**Chemical: Methyl diethanolamine**

CAS No: 105-59-9

Use: Unscheduled precursor to HN2

---

**Chemical:  
Methyl diphenylglycolate**

See: Methyl benzilate

---

**Chemical: Methyl ester**

See: Methyl benzilate

---

**Chemical: Methyl formate**

CAS No: 107-31-3

Use: Unscheduled precursor to Phosgene

---

**Chemical: Methyl hydrate**

See: Methanol

---

**Chemical: Methyl hydride**

See: Methane

---

**Chemical: Methyl hydroxide**

See: Methanol

---

**Chemical:  
Methyl hydroxydiphenylacetate**

See: Methyl benzilate

---

**Chemical: Methyl iodide**

Synonym: Iodomethane

Methane, iodo

CAS No: 74-88-4

Use: Unscheduled reaction catalyst in production of DMMP

---

**Chemical:  
Methyl methanephosphonate**

See: O-Methyl methylphosphonate

---

**Chemical: Methyl methyl phosphonic acid**

See: O-Methyl methylphosphonate

---

**Chemical:  
Methyl methylphosphonate**

See: O-Methyl methylphosphonate

---

**Chemical: Methyl methylphosphonochloridate**

Synonym: Phosphonochloridic acid, methyl-, methylester

Methyl methylphosphonochloridic acid

Schedule: 2B

CAS No: 1066-52-0

Use: Byproduct of Chlorosarin

---

**Chemical: Methyl methylphosphonochloridic acid**

See: Methyl methylphosphonochloridate

---

**Chemical:  
Methyl phosphonate, anhydride**

See: 1,2-Dimethyldiphosphonic Acid

---

**Chemical:  
Methyl phosphinyl dichloride**

See: Methylphosphonous dichloride

---

**Chemical:  
Methyl phosphinyl difluoride**

See: Methylphosphonous difluoride

---

**Chemical: Methylamine**

Synonym: Amino methane

Carbinamine

MMA

Methanamine

Mercurialin

CAS No: 74-89-5

Use: Unscheduled precursor to Methyleneethanolamine

---

**Chemical: Methyl diethanolamine**

Synonym: 2,2-(methylimino)diethanol S glycol S-diol

Schedule: 3B

CAS No: 105-59-9

Synthesis: Ethylene oxide and methylamine

Use: Scheduled precursor to HN2

---

**Chemical: Methylene chloride**

CAS No: 75-05-2

Use: Reaction catalyst in production of "Perren-Kinnear" complex

---

**Chemical: Methylene dichloride**

Synonym: Dichloromethane

Methane, dichloro

Methane dichloride

Solmethine

CAS No: 75-09-2

Use: Unscheduled precursor to Sarin, HD, and Soman

---

**Chemical:  
Methylphosphonic anhydride**

See: 1,2-Dimethyldiphosphonic acid

---

**Chemical:  
Methylphosphonic dichloride**

See: Methylphosphonyl dichloride

---

**Chemical:  
Methylphosphonic difluoride**

See: Methylphosphonyl difluoride

---

**Chemical:  
Methylphosphonodichloridate**

See: Methylphosphonyl dichloride

---

**Chemical:**  
**Methylphosphonothioic acid, O,O-diethyl ester**

**See:** O,O Diethyl methylphosphonothionate

---

**Chemical:**  
**Methylphosphonothioic acid, O-ethyl ester**

**See:** O-Ethyl methylphosphonothioic acid

---

**Chemical:**  
**Methylphosphonothioic dichloride**

**Synonym:** SWS  
Dichloromethylphosphine  
Phosphonothiotic dichloride, methyl  
**Schedule:** 2B  
**CAS No:** 676-98-2  
**Use:** Scheduled precursor to YLS and VX

---

**Chemical:**  
**Methylphosphonous dichloride**

**Synonym:** Methyl phosphinyl dichloride  
**Schedule:** 2B  
**CAS No:** 676-83-5  
**Synthesis:** Phosphorous trichloride and methane  
**Use:** Scheduled precursor to VX

---

---

**Chemical:**  
**Methylphosphonous difluoride**

**Synonym:** Methyl phosphinyl difluoride  
**Schedule:** 2B  
**CAS No:** 753-59-3  
**Synthesis:** Phosphorous trifluoride and methane  
**Use:** Scheduled precursor to VX

---

**Chemical:**  
**Methylphosphonyl dichloride**

**Synonym:** DC  
Dichlor  
Methylphosphonic dichloride  
Methylphosphonodichloridate  
**Schedule:** 2B  
**CAS No:** 676-97-1  
**Synthesis:** 1) dimethyldiphosphonic acid, phosphorus trichloride; 2) dimethyldiphosphonic acid, methylphosphonous dichloride; 3) DMMP, thionyl chloride; 4) "Perren-Kinney" complex and methylene chloride  
**Catalyst:** Nitrogen, calcium chloride  
**Use:** Scheduled precursor to Sarin, Soman, DF, and Chlorosoman

---

**Chemical:**  
**Methylphosphonyl difluoride**

**Synonym:** DF  
Methylphosphonic difluoride  
Difluor  
**Schedule:** 1B  
**CAS No:** 676-99-3  
**Synthesis:** Methylphosphonic dichloride and hydrogen fluoride  
**Use:** Scheduled precursor to Sarin and Soman

---

---

**Chemical:**  
**Methylphosphorus tetrachloride**

**Synonym:** MPTC  
Tetrachloromethylphosphorane  
Phosphorane, tetrachloromethyl-  
Methyltetrachlorophosphorous (V)  
**Schedule:** 2B  
**CAS No:** 2725-68-0  
**Use:** Scheduled precursor to DC, DIMP, and DF

---

**Chemical:**  
**Methyltetrachlorophosphorous (V)**

**See:** Methylphosphorus tetrachloride

---

**Chemical: Metramac**

**See:** Amiton

---

**Chemical: MMA**

**See:** Methylamine

---

**Chemical: MMPA**

**See:** O-Methyl methylphosphonate

---

**Chemical: Molecular chlorine**

**See:** Chlorine

---

**Chemical: Monochloroethylene**

**See:** Vinyl chloride

---

**Chemical: Monochloromethane**

**See:** Methyl chloride

---

---

**Chemical: Monoethylamine**

**See:** Ethylamine

---

**Chemical: Monosulfur dichloride**

**See:** Sulfur dichloride

---

**Chemical: Morpholine, N-2-hydroxyethyl-4-sulfo,hydrochloride**

**See:** N-Hydroxyethylthiomorpholine hydrochloride

---

**Chemical: MPTC**

**See:** Methylphosphorus tetrachloride

---

**Chemical: Mustard gas**

**See:** Bis(2-chloroethyl)sulfide

---

**Chemical: Mustard oil (M.O.)**

**See:** Bis(2-chloroethyl)sulfide

---

**Chemical:**  
**N,N Dipropylphosphoramidic dichloride**

**Synonym:** N,N-Di-n-propyl phosphoramidic dichloride  
Di-n-propylphosphoramidic dichloride  
**Schedule:** 2B  
**CAS No:** 40881-98-9  
**Use:** Scheduled precursor to G11

---

---

**Chemical: N,N-Di-n-propyl phosphoramidic dichloride**

See: N,N Dipropylphosphoramidic dichloride

---

**Chemical: N,N-Dibutyl-**

See: Tributylamine

---

**Chemical: N,N-Dibutyl-1-butanamine**

See: Tributylamine

---

**Chemical: N,N-Diethylaminoethane-2-thio**

See: N,N-Diethylaminoethanethiol

---

**Chemical: N,N-Diethylaminoethanethiol**

Synonym: N,N-Diethylaminoethane-2-thiol

Ethanethiol, 2-(diethylamino)  
Diethylcysteamine  
Diethyl (2-mercaptoethyl) amine

Schedule: 2B  
CAS No: 100-38-9

---

**Chemical: N,N-Diisopropyl phosphoramidic dichloride**

Schedule: 2B  
CAS No: 23306-80-1  
Use: Scheduled precursor to G10

---

**Chemical: N,N-Diisopropyl-(beta)-aminoethanol**

Synonym: KB  
Ethanol, 2-(bis(1-methylethyl)amino)  
2-(Bis(1-methylethyl) amino) ethanol  
(N,N-Diisopropylamino) ethanol

Schedule: 2B  
CAS No: 96-80-0  
Use: Scheduled precursor to QL, VX, VS, V4, and V5

---

**Chemical: N,N-Diisopropyl-(beta)-aminoethyl chloride**

Synonym: 2-(N,N,-Diisopropylamino) ethyl chloride  
2-Propanamine, N-(2-chloroethyl)-N-(1-methylethyl)-  
N-(2-Chloroethyl)-N-(1-methylethyl)-2-propanamine

Schedule: 2B  
CAS No: 96-79-7  
Use: Scheduled precursor to VX and VS

---

**Chemical: N,N-Diisopropyl-.beta.-aminoethanethiol**

See: N,Ndiisopropylaminoethanethiol

---

**Chemical: N,N-Diisopropyl-2-aminoethyl chloride hydrochloride**

See: 2-(N,N-Diisopropylamino) ethyl chloride hydrochloride

---

**Chemical: N,N-Diisopropylamine**

See: Diisopropylamine

---

**Chemical: N,N-Diisopropylaminoethanethiol**

Synonym: N,N-Diisopropyl-.beta.-aminoethanethiol  
Diisopropylaminoethanethiol  
Ethanethiol, 2-(diisopropylamino)-  
Schedule: 2B  
CAS No: 5842-07-9  
Use: Scheduled precursor to VX and VS

---

**Chemical: N,N-Dimethylamine**

See: Dimethylamine

---

**Chemical: N,N-Dimethylphosphoramidic dichloride**

Synonym: N,N-dimethylphosphoramido dichloridate  
Product 39  
Schedule: 2B  
CAS No: 677-43-0  
Synthesis: N,N-dimethylphosphoramido dichloridate  
Catalyst: Solvent such as chlorobenzene  
Use: Scheduled precursor to Tabun and DC

---

**Chemical: N,N-Dimethylphosphoramidic dicyanide**

Synonym: Dimethylphosphoramidic dicyanide  
Phosphoramidic dicyanide, dimethyl  
Schedule: 2B  
Use: Scheduled precursor to Tabun

---

**Chemical: N,N-Dimethylphosphoramido dichloridate**

See: N,N-Dimethylphosphoramidic dichloride

---

**Chemical: N-(2-Chloroethyl)-N-(1-methylethyl)-2-propanamine**

See: N,N-diisopropyl-(beta)-aminoethyl chloride

---

**Chemical: N-(2-chloroethyl)-Npropyl-1-propanamine**

See: 2-(N,N-Dipropylamino) ethyl chloride

---

**Chemical: N-(2-Chloroethyl)-N-propyl-1-propanamine hydrochloride**

See: (N,N-Dipropylamino) ethyl chloride hydrochloride

---

**Chemical: N-Ethyl-2-2-iminodiethanol**

See: Ethyldiethanolamine

---

**Chemical: n-Ethylamine**

See: Ethylamine

---

**Chemical: N-Ethylethanamine**

See: Diethylamine

---

**Chemical:  
N-Hydroxyethylthiomorpholine  
hydrochloride**

**Synonym:** Morpholine, N-2-  
hydroxyethyl-4-sulfo-,hydrochloride  
**Use:** Unscheduled precursor to HD

---

**Chemical: N-Methylmethanamine**

See: Dimethylamine

---

**Chemical: N-Methylmethanamine  
hydrochloride**

See: Dimethylamine HCl

---

**Chemical: Narcylen**

See: Acetylene

---

**Chemical: Natrium**

See: Sodium

---

**Chemical: Natrium cyanide**

See: Sodium cyanide

---

**Chemical: NCI-CO4591**

See: Carbon disulfide

---

**Chemical: Nitrochloroform**

See: Chloropicrin

---

**Chemical: Nitrochloromethane**

See: Chloropicrin

---

**Chemical: Nitrogen Lost**

See: HN3

---

**Chemical: Nitrogen mustard**

See: HN3

---

**Chemical: Nitrogen yperite**

See: HN3

---

**Chemical: Nitrosil**

See: Ammonia

---

**Chemical: O,O Diethyl  
methylphosphonothionate**

**Synonym:** TRS  
Diethyl methylphosphonothionate  
Methylphosphonothioic acid,  
O,Odiethyl  
ester  
**Schedule:** 2B  
**CAS No:** 6996-81-2  
**Use:** Scheduled precursor to YLS

---

**Chemical: O,O  
Diethylphosphorochloridate**

**Synonym:** Phosphorochloridic acid,  
diethyl ester  
Diethyl phosphorochloridate  
**CAS No:** 814-49-3  
**Use:** Unscheduled precursor to  
Amiton

---

**Chemical: O,O-Diethyl ester**

See: Amiton

---

**Chemical: O,O-Diethyl ester of  
methlphosponus acid**

See: Diethyl methylphosphonite

---

**Chemical: O,O-Diethyl  
N,Ndimethylphosphoramidite**

**Synonym:** OEDMDAI  
Phosphoramidous acid, dimethyl-,  
diethyl ester  
Diethyl dimethylphosphoramidite  
Diethyl dimethylphosphoramidous  
acid  
**CAS No:** 2632-87-3  
**Use:** Unscheduled precursor to  
Tabun

---

**Chemical: O,O-Diethyl  
phosphorothiochloridate**

**Synonym:** Chlorophosphonothioic  
acid, O,O-diethyl ester  
Diethyl phosphorothiochloridate  
**CAS No:** 2524-04-1  
**Use:** Unscheduled precursor to  
Amiton

---

**Chemical: O,O-Diisopropyl  
hydrogenphosphonate**

**Synonym:** Diisopropyl hydrogen  
phosphonate  
Phosphorous acid, bis(1-  
methylethyl) ester  
**CAS No:** 691-96-3  
**Use:** Unscheduled precursor to  
DIMP and Sarin

---

**Chemical: O,O-Diisopropyl  
methylphosphonite**

**Synonym:** Phosphonous acid,  
methyl-, di-(1-methylethyl) ester  
**Schedule:** 2B  
**Use:** Scheduled precursor to IMPF,  
IMPC, and DIMP

---

**Chemical: O,O-Dimethyl methyl  
phosphonite**

**Synonym:** Phosphonous acid,  
methyl-, dimethyl ester, Dimethyl  
methyl phosphonous acid  
**Schedule:** 2B  
**Use:** Scheduled precursor to VX

---

**Chemical:  
O,O-Dimethylphosphonate**

See: Dimethyl phosphite

---

**Chemical: O,O-Dipinacolyl  
methylphosphonate**

**Synonym:** DPMP  
Phosphonic acid, methyl-,  
bis(1,2,2-  
trimethylpropyl) ester  
Bis(1,2,2-trimethylpropyl) methyl  
Phosphonate  
**Schedule:** 2B  
**CAS No:** 7040-58-6  
**Use:** Scheduled precursor to and  
byproduct of Chlorosoman

---

**Chemical: O-Cyclohexanyl isopropyl phosphonofluoridate**

**Synonym:** Isopropyl GF, I-GF Phosphonofluoridic acid (1-methylethyl), cyclohexyl ester  
**Schedule:** 1A  
**Use:** Toxic chemical

---

**Chemical: O-Ethyl methyl phosphinic acid**

**Synonym:** Ethyl methylphosphinate YL  
Ethoxymethylphosphine oxide  
**Schedule:** 2B  
**CAS No:** 16391-07-4  
**Use:** Scheduled precursor to VX; degradation product of QL (hydrolysis)

---

**Chemical: O-Ethyl methylphosphonochloridite**

**Synonym:** Ethyl methyl phosphonochloridite, Phosphonochloridous acid, methyl-, ethyl  
Ethyl methylphosphonous chloride ester  
**Schedule:** 2B  
**Use:** Scheduled precursor to VX

---

**Chemical: O-Ethyl methylphosphonothioic acid**

**See:** O-Ethyl methylphosphonothioic acid

---

**Chemical: O-Ethyl methylphosphonothioic acid**

**Synonym:** YLS  
Ethyl ThioMPA  
O-Ethyl methylphosphonothioic acid  
Methylphosphonothioic acid, O-ethyl-ester  
**Schedule:** 2B  
**CAS No:** 18005-40-8  
**Use:** Scheduled precursor to VX; degradation product of VX (hydrolysis)

---

**Chemical: O-Ethyl N,N-diisopropyl phosphoramidocyanidate**

**Synonym:** Isopropyl GA  
I-GA  
Phosphoramidocyanidic acid, di(1-methylethyl)-, ethyl ester  
**Schedule:** 1A  
**Use:** Toxic chemical

---

**Chemical: O-Ethyl N,N-dimethyl phosphoramidochloridate**

**Synonym:** Ethyl N,N-dimethylphosphoramidochloridate  
EDMPNC  
**Schedule:** 2B  
**CAS No:** 2510-93-2  
**Use:** Scheduled precursor to and byproduct of Tabun

---

**Chemical: O-Ethyl O-2-Diisopropylaminoethyl methylphosphonothionate**

**Synonym:** CV  
O-Ethyl O-2-Diisopropylaminoethyl methylphosphonothiolate  
Phosphonothioic acid, methyl-, O-(2-diisopropyl aminoethyl) O-ethyl ester  
**Schedule:** 2B  
**CAS No:** 71840-25-0  
**Use:** Scheduled precursor to VX

---

**Chemical: O-Ethyl O-2-diisopropylaminoethyl methylphosphonite**

**See:** O-Ethyl,2-diisopropyl aminoethyl methylphosphonate

---

**Chemical: O-Ethyl O-2-Diisopropylaminoethyl methylphosphonothiolate**

**See:** O-Ethyl O-2-Diisopropylaminoethyl methylphosphonothionate

---

**Chemical: O-Ethyl S-2-diisopropylaminoethyl n-propyl-phosphonothiolate**

**Synonym:** PP-VX  
**Schedule:** 1A  
**Use:** Toxic chemical

---

**Chemical: O-Ethyl, N,N-di-n-propyl phosphora midocyanidate**

**Synonym:** Propyl GA, P-GA, Phosphoramidocyanidic acid, dipropyl-, ethyl ester, and Ethyl dipropylphosphoramidocyanidate  
**Schedule:** 1A  
**Use:** Toxic chemical

---

**Chemical: O-Ethyl,2-diisopropyl aminoethyl methylphosphonate**

**Synonym:** QL  
Phosphonous acid, methyl-2-(Bis(1-methylethyl) amino) ethyl ethyl ester  
O-Ethyl O-2-diisopropylaminoethyl Methylphosphonite  
**Schedule:** 1B  
**CAS No:** 57856-11-8  
**Synthesis:** Diethyl methylphosphonite and KB, 2-(N,N-diethylamino)ethanol  
**Use:** Scheduled binary precursor to VX

---

**Chemical: O-Ethyl-N,N-dimethylphosphoramidocyanidate**

**See:** Tabun

---

**Chemical: O-Ethyl-O-2-iisopropylaminoethyl methylphosphonite**

**See:** O-Ethyl,2-diisopropyl aminoethyl methylphosphonate

---

**Chemical: O-Ethyl-S-2-diisopropylaminoethyl isopropylphosphonothiolate**

Synonym: P1-VX,  
Schedule: 1A  
Use: Toxic chemical

---

**Chemical: O-Ethyl-S-2-diisopropylaminoethyl methyl phosphonothiolate**

See: VX

---

**Chemical: O-Isopropyl ethylphosphonofluoridate**

Synonym: GE  
Phosphonofluoridic acid, ethyl-, 1-methylethyl ester  
Ethylsarin  
Ethyl GB  
Isopropyl ethylphosphonofluoridate  
Schedule: 1A  
CAS No: 1189-87-3  
Use: Toxic chemical

---

**Chemical: O-Isopropyl methylphosphonochloridate**

See: Chlorosarin

---

**Chemical: O-Isopropyl methylphosphonofluoridate**

Synonym: GB  
Sarin  
EA 1208  
Schedule: 1A  
CAS No: 107-44-8  
Use: Toxic chemical

---

**Chemical: O-Methyl methyl phosphonate**

See: O-Methyl methylphosphonate

---

**Chemical: O-Methyl methylphosphonate**

Synonym: MMPA  
Methyl methanephosphonate  
Methyl methylphosphonate  
Methyl methyl phosphonic acid  
O-Methyl methyl phosphonate  
Schedule: 2B  
CAS No: 1066-53-1  
Use: Scheduled precursor to DC, DIMD, and DF

---

**Chemical: O-Mustard**

Synonym: Bis(2-chloroethylthioethyl)ether  
T  
English Lost  
T-724  
Oxygen yperite  
Schedule: 1A  
CAS No: 63918-89-8  
Synthesis: 1) bis(2-hydroxyethylthioethyl)ether and thionyl chloride; 2) bis(2-mercaptoethyl)ether and vinyl chloride; 3) thiodiglycol and bis(2-hydroxyethyl)sulfide with HCl; 4) thiodiglycol and NaOH and bis(2-chloroethyl)sulfide  
Use: Toxic chemical

---

**Chemical: O-O-diisopropyl methylphosphonate**

See: DIMP

---

**Chemical: O-Pinacolyl ethylphosphonofluoridate**

Synonym: Ethylsoman  
E-GD  
Phosphono fluoridic acid, ethyl-, 1,2,2-trimethyl propyl ester  
Ethyl GD  
O-Pinacolyl  
ethylphosphonofluoridate  
Schedule: 1A  
CAS No: 97931-20-9  
Use: Toxic chemical

---

**Chemical: O-Pinacolyl isopropyl phosphonofluoridate**

Synonym: Isopropyl GD  
I-GD  
O-Pinacolyl  
isopropylphosphonofluoridate  
Phosphonofluoridic acid, (1-methylethyl)-  
1,2,2-trimethylpropyl ester  
Schedule: 1A  
Use: Toxic chemical

---

**Chemical: O-Pinacolyl isopropylphosphonofluoridate**

See: O-Pinacolyl isopropyl phosphonofluoridate

---

**Chemical: O-Pinacolyl methylphosphonochloridate**

See: Chlorosoman

---

**Chemical: O-Pinacolyl methylphosphonofluoridate**

See: Soman

---

**Chemical: Octafluorocyclobutane**

See: Perfluoro cyclobutane

---

**Chemical: Octafluoroisbutylene**

See: PFIB

---

**Chemical: OEDMDAI**

See: O,O-Diethyl N,N-dimethylphosphoramidite

---

**Chemical: Olefiant gas**

See: Ethylene

---

**Chemical: Orthophosphoric acid**

See: Phosphoric acid

---

**Chemical: oxiran**

See: Ethylene oxide

---

**Chemical: Oxybis(chloromethane)**

See: Bis(chloromethyl)ether

---

**Chemical: Oxygen yperite**

See: O-Mustard

---

**Chemical: P1-VX**

See: O-Ethyl-S-2-diisopropylaminoethyl isopropylphosphonothiolate

---

**Chemical: Pentachlorophosphorane**

See: Phosphorus pentachloride

---

**Chemical:**  
**Pentachlorophosphorous**

**See:** Phosphorus pentachloride

---

**Chemical:** **Pentadiene,3-fluoro-1,4-, homopolymer**

**See:** Polyfluoroethylenepropylene

---

**Chemical:** **Pentane, 1,5-bis[(2-chloroethyl)thio]**

**See:** 1,5-Bis(2-chloroethylthio)-n-pentane

---

**Chemical:** **Pentane,1,5-dichloro**

**See:** 1,5-Dichloro-n-pentane

---

**Chemical:** **Perfluorobutylene**

**See:** PFIB

---

**Chemical:** **Perfluoro cyclobutane**

**Synonym:** Octafluorocyclobutane  
Propellant C318

R 318  
r-C 318

**CAS No:** 115-25-3

**Use:** Unscheduled precursor to PFIB

---

**Chemical:** **Perfluoroisbutene**

**See:** PFIB

---

**Chemical:** **Perfluoropropylene**

**Synonym:** 1-Propene,1,1,2,3,3,3-hexafluoro-  
Hexafluoropropylene

**CAS No:** 116-15-4

**Use:** Unscheduled precursor to PFIB

---

**Chemical:**  
**“Perren-Kinnear” complex**

**Schedule:** 2B

**CAS No:** 4083-88-9

**Synthesis:** Phosphorous trichloride, sodium fluoride and aluminum chloride

**Catalyst:** Methylene chloride

**Use:** Scheduled precursor to Methylphosphonic dichloride

---

**Chemical:** **PFIB**

**Synonym:** 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene  
Perfluoroisobutylene

Perfluoroisbutene  
Octafluoroisbutylene

**Schedule:** 2A

**CAS No:** 382-21-8

**Synthesis:** Hydrogen fluoride and polytetrafluoroethylene (PTFE)

**Use:** Toxic chemical

---

**Chemical:**  
**Phenyl magnesium bromide**

**Synonym:** magnesium,  
bromophenyl  
Bromophenylmagnesium

**CAS No:** 100-58-3

**Use:** Unscheduled precursor to BZ

---

**Chemical:** **Phosgene**

**Synonym:** Carbonyl dichloride

**Schedule:** 3A

**CAS No:** 75-44-5

**Synthesis:** 1) carbon monoxide and chlorine; 2) diphosgene or methyl formate

**Catalyst:** 1) activated charcoal; 2) Michler's ketone

**Use:** Scheduled precursor to Chlorosarin and Chlorosoman

---

**Chemical:** **Phosphine, trichloro-**

**See:** Phosphorus trichloride

---

**Chemical:** **Phosphonic acid, bis(1-methyl ethyl) ester**

**See:** Diisopropyl phosphonate

---

**Chemical:** **Phosphonic acid, diethyl ester, sodium salt**

**See:** Sodium O,O-diethyl phosphite

---

**Chemical:** **Phosphonic acid, diisopropyl ester**

**See:** Diisopropyl phosphonate

---

**Chemical:** **Phosphonic acid, dimethyl-, sodium salt**

**See:** Sodium dimethyl phosphonate

---

**Chemical:** **Phosphonic acid, ethyl-, diethyl ester**

**See:** Diethyl ethylphosphonate

---

**Chemical:** **Phosphonic acid, ethyl-, dimethyl ester**

**See:** Dimethyl ethylphosphonate

---

**Chemical:** **Phosphonic acid, methyl-, anhydride**

**See:** 1,2-Dimethyldiphosphonic acid

---

**Chemical:** **Phosphonic acid, methyl-, bis(1,2,2-trimethylpropyl) ester**

**See:** O,O-Dipinacolyl methylphosphonate

---

**Chemical:** **Phosphono fluoridic acid, ethyl-, 1,2,2-trimethyl propyl ester**

**See:** O-Pinacolyl ethylphosphonofluoridate

---

**Chemical:** **Phosphonochloridic acid, methyl-, methylester**

**See:** Methyl methylphosphonochloridate

---

**Chemical:** **Phosphonofluoridic acid (1-methylethyl), cyclohexyl ester**

**See:** O-Cyclohexanyl isopropyl phosphonofluoridate

---

**Chemical:** **Phosphonofluoridic acid, (1-methylethyl)-**

**See:** O-Pinacolyl isopropyl phosphonofluoridate

---

**Chemical: Phosphonofluoridic acid, ethyl-, 1-methylethyl ester**

See: O-Isopropyl ethylphosphonofluoridate

---

**Chemical: Phosphonothioic acid, methyl**

See: S-2-Diisopropylaminoethyl methylphosphonothioic acid

---

**Chemical: Phosphonothioic acid, methyl-, O-(2-diisopropyl aminoethyl) O-ethyl ester**

See: O-Ethyl O-2-Diisopropylaminoethyl methylphosphonothionate

---

**Chemical: Phosphonothiotic dichloride, methyl**

See: Methylphosphonothioic dichloride

---

**Chemical: Phosphonous acid, methyl-**

See: Bis(2-diisopropylamino ethyl) methylphosphonite

---

**Chemical: Phosphonous acid, methyl-,**

See: O-Ethyl,2-diisopropyl aminoethyl methylphosphonate

---

**Chemical: Phosphonous acid, methyl-, di-(1-methylethyl) ester**

See: O,O-Diisopropyl methylphosphonite

---

**Chemical: Phosphonous dichloride, ethyl-**

See: Ethylphosphonous dichloride

---

**Chemical: Phosphonous, difluoride, ethyl-**

See: Ethylphosphonous difluoride

---

**Chemical: Phosphoramidic dicyanide, dimethyl**

See: N,N-Dimethylphosphoramidic dicyanide

---

**Chemical: Phosphoramidocyanidic acid, di(1-methylethyl)-, ethyl ester**

See: O-Ethyl N,N-diisopropyl phosphoramidocyanidate

---

**Chemical: Phosphoramidous acid, dimethyl-, diethyl ester**

See: O,O-Diethyl N,Ndimethylphosphoramidite

---

**Chemical: Phosphorane, tetrachloromethyl-**

See: Methylphosphorus tetrachloride

---

**Chemical: Phosphoric acid**

Synonym: 3M Etching liquid  
Decon 4512

EVITs  
Orthophosphoric acid  
Sonac  
WC-Reiniger  
Kefo

CAS No: 7664-38-2

Use: Unscheduled precursor to GB;  
degradation product

---

**Chemical: Phosphoric anhydride**

See: Phosphorus pentoxide

---

**Chemical: Phosphoric chloride**

See: Phosphorus pentachloride

---

**Chemical: Phosphorochloridic acid, diethyl ester**

See: O,O  
Diethylphosphorochloridate

---

**Chemical: Phosphorochloridous acid, diethyl ester**

See: Diethylphosphorachloridite

---

**Chemical: Phosphorous acid, bis(1-methylethyl) ester**

See: O,O-Diisopropyl hydrogenphosphonate

---

**Chemical: Phosphorous acid, diisopropyl ester, sodium salt**

See: Sodium diisopropyl phosphonate

---

**Chemical: Phosphorous chloride**

See: Phosphorus trichloride

---

**Chemical: Phosphorous chloride (Cl<sub>6</sub>P<sub>2</sub>)**

See: Phosphorus trichloride

---

**Chemical: Phosphorous chloride (PCl<sub>5</sub>)**

See: Phosphorus pentachloride

---

**Chemical: Phosphorous perchloride**

See: Phosphorus pentachloride

---

**Chemical: Phosphorus acid**

See: Triethyl phosphite

---

**Chemical: Phosphorus oxide (P<sub>2</sub>O<sub>5</sub>)**

See: Phosphorus pentoxide



---

**Chemical:**  
**Phosphorus oxychloride**

**Synonym:** Phosphorus oxytrichloride  
Phosphoryl chloride

**Schedule:** 3B

**CAS No:** 10025-87-3

**Synthesis:** 1) phosphorus trichloride and oxygen; 2) phosphorus pentachloride and phosphorus pentoxide; 3) phosphorus ore, sulfuric acid, ammonium sulfate, and chlorine

**Use:** Scheduled precursor to N,Ndimethylphosphoramidic dichloride

---

**Chemical:**  
**Phosphorus oxytrichloride**

**See:** Phosphorus oxychloride

---

**Chemical:**  
**Phosphorus pentachloride**

**Synonym:** Pentachlorophosphorane  
Pentachlorophosphorous  
Phosphoric chloride  
Phosphorous chloride (PCl<sub>5</sub>)  
Phosphorous perchloride

**Schedule:** 3B

**CAS No:** 10026-13-8

**Synthesis:** Phosphorus trichloride, chloroform, and chlorine

**Use:** Scheduled precursor to Mustard gas, O-Mustard, DF, and DC

---

**Chemical:**  
**Phosphorus pentasulfide**

**CAS No:** 1314-80-3

**Use:** VG and VX

---

**Chemical: Phosphorus pentoxide**

**Synonym:** Phosphoric anhydride  
Phosphorus oxide (P<sub>2</sub>O<sub>5</sub>)

**CAS No:** 1314-56-3

**Use:** Unscheduled precursor to Phosphorus oxychloride

---

**Chemical: Phosphorus trichloride**

**Synonym:** Phosphine, trichloro-  
Phosphorous chloride (Cl<sub>3</sub>P<sub>2</sub>)  
Phosphorous trichloride

**Schedule:** 3B

**CAS No:** 7719-12-2

**Synthesis:** Elemental chlorine and elemental phosphorus in the presence of previously added phosphorus trichloride

**Use:** Scheduled precursor to DC, Methylphosphonous dichloride, Phosphorus pentachloride, Trimethyl phosphite, Triethyl phosphite, and Diethyl phosphite

---

**Chemical: Phosphoryl chloride**

**See:** Phosphorus oxychloride

---

**Chemical: Picric acid**

**Synonym:** 1-Hydroxy-2,4,6-  
Trinitrobenzene  
1,3,5-Trinitrophenol  
Picric acid  
Trinitrophenol

2,4,6-Trinitrophenol

**CAS No:** 88-89-1

**Use:** Unscheduled precursor to Chloropicrin

---

**Chemical: Pinacol**

**See:** 2,3-Dimethyl-2,3-butanediol

---

**Chemical: Pinacolone**

**See:** Pinacolone

---

**Chemical: Pinacolone**

**Synonym:** 3,3-Dimethyl-2-butanone  
2-Butanone,3,3-dimethyl  
Pinacolone

tert-Butyl methyl ketone

**CAS No:** 75-97-8

**Use:** Unscheduled precursor to Pinacolyl alcohol

---

**Chemical: Pinacolyl alcohol**

**Synonym:** 3,3-Dimethylbutane-2-ol  
2,2-Dimethylbutan-3-ol

**Schedule:** 2B

**CAS No:** 464-07-3

**Synthesis:** Pinacolone and hydrogen

**Use:** Scheduled precursor to Soman

---

**Chemical: Pinacone**

**See:** 2,3-Dimethyl-2,3-butanediol

---

**Chemical:**  
**Polyfluoroethylenepropylene**

**Synonym:** Pentadiene,3-fluoro-1,4-,  
homopolymer

**Use:** Unscheduled precursor to PFIB

---

**Chemical: Polytetrafluoroethylene**

**Synonym:** PTFE

Ethene, tetrafluoro-,homopolymer  
Tetrafluoroethene homopolymer  
Teflon

**CAS No:** 9002-84-0

**Use:** Unscheduled precursor to PFIB

---

**Chemical: Potassium bifluoride**

**CAS No:** 7789-29-9

**Use:** Precursor to Sarin, Soman, and GF

---

**Chemical: Potassium cyanide**

**CAS No:** 151-50-8

**Use:** Tabun and Hydrogen cyanide

---

**Chemical: Potassium fluoride**

**Synonym:** Potassium fluoride (KF)  
Potassium monofluoride  
Clocat F

**CAS No:** 7789-23-3

**Use:** Unscheduled precursor to Sarin

---

**Chemical:**  
**Potassium fluoride (KF)**

**See:** Potassium fluoride

---

---

**Chemical:**  
**Potassium monofluoride**

See: Potassium fluoride

---

**Chemical: PP-VX**

See: O-Ethyl S-2-diisopropylaminoethyl n-propylphosphonothiolate

---

**Chemical: Product 39**

See: N,N-dimethylphosphoramidic dichloride

---

**Chemical: Propane, 1,3-dichloro**

See: 1,3-Dichloropropane

---

**Chemical:**  
**Propane, 2-chloro-2-methyl**

See: t-Butyl chloride

---

**Chemical: Propellant C318**

See: Perfluoro cyclobutane

---

**Chemical: Proteins, ricins**

See: Ricin

---

**Chemical: PTFE**

See: Polytetrafluoroethylene

---

**Chemical: Pyridine, 4-methyl**

See: 4-Methylpyridine

---

**Chemical: Pyromix**

See: 1,2-Dimethyldiphosphonic acid

---

**Chemical: Q**

See: Sesquimustard

---

**Chemical: QL**

See: O-Ethyl,2-diisopropyl aminoethyl methylphosphonate

---

**Chemical: Quinuclidine-3-ol**

Synonym: 3-Quinuclidinol  
3-Hydroxy-azabicyclo [2.2.2]octane  
3-Q azabicyclo [2.2.2]-3-octanol  
Schedule: 2B

CAS No: 1619-34-7

Synthesis: 3-Quinuclidinone hydrochloride and hydrogen

Catalyst: Pt oxide

Use: Scheduled precursor to BZ and Arsenic trichloride

---

**Chemical:**  
**Quinuclidinone hydrochloride**

See: 3-Quinuclidone hydrochloride

---

**Chemical: Quinuclidone**

See: 3-Quinuclidinone

---

**Chemical: R 318**

See: Perfluoro cyclobutane

---

**Chemical: R 40**

See: Methyl chloride

---

**Chemical: R 50**

See: Methane

---

**Chemical: R 50 (refrigerant)**

See: Methane

---

**Chemical: R 717**

See: Ammonia

---

**Chemical: R-5**

See: Lewisite 1

---

**Chemical: R-5,150**

See: Amiton

---

**Chemical: r-C 318**

See: Perfluoro cyclobutane

---

**Chemical: RCA**

See: Ricin

---

**Chemical: Refrigerant R717**

See: Ammonia

---

**Chemical: Rhodia-6200**

See: Amiton

---

**Chemical: Ricin**

Synonym: RCA  
Ricin Communis Agglutin Proteins, ricins  
Ricine  
KCL III  
KCL IV

Schedule: 1B

CAS No: 9009-86-3

Synthesis: Naturally occurring in castor bean; obtained by separation, extraction, and isolation  
Catalyst: Heptane; water; sulfuric or hydrochloric acid; sodium hydroxide; sodium sulfate; and sodium chloride

Use: Toxic chemical

---

**Chemical:**  
**Ricin Communis Agglutin**

See: Ricin

---

**Chemical: Ricine**

See: Ricin

---

**Chemical: S**

See: HN2

---

**Chemical: S glycol**

See: Methyl-diethanolamine

---

**Chemical: S-(2-diethylamino) ethyl,phosphoro-thioic acid**

See: Amiton

---

**Chemical: S-2-(Diisopropylamino) ethyl methylphosphonothioic acid**

---

**See:** S-2-Diisopropylaminoethyl methylphosphonothioic acid

---

**Chemical: S-2-Diisopropylaminoethyl methylphosphonothioic acid**

---

**Synonym:** S-2-(Diisopropylamino) ethyl methylphosphonothioic acid EA 2192 Phosphonothioic acid, methyl

**Schedule:** 2B

**CAS No:** 73207-98-4

**Use:** Scheduled precursor to and degradation product of VX (hydrolysis)

---

**Chemical: S-diol**

---

**See:** Methyl-diethanolamine

---

**Chemical: Sarin**

---

**See:** O-Isopropyl methylphosphonofluoridate

---

**Chemical: Saxitoxin**

---

**Synonym:** TZ

STX

[3aS-(3.alpha.,4.alpha.10aR)]2,6, Diamino-4-[[[(aminocarbonyl)oxy]

Shellfish toxin

Saxitoxin hydrate

**Schedule:** 1A

**CAS No:** 35523-89-8

**Synthesis:** Separated from naturally sources in shell fish and refined

**Catalyst:** Water; sulfuric or hydrochloric acid; ethanol or methanol

**Use:** Toxic chemical

---

**Chemical: Saxitoxin hydrate**

---

**See:** Saxitoxin

---

**Chemical: Sesquimustard**

---

**Synonym:** 1,2-bis(2-chloroethylthio)ethane Q

Doppel-O

**Schedule:** 1A

**CAS No:** 3563-36-8

**Synthesis:** 1) 2-hydroxyethanethiol and vinyl chloride; 2) 1,2-bis(2-hydroxyethylthio)ethane and HCl gas; 3) 1,2-bis(2-hydroxyethylthio) ethane and thionyl chloride; 4) 1,2-ethanedithiol and vinyl chloride; 5) 2-hydroxyethanethiol and thiodiglycol with hydrochloric acid

**Use:** Toxic chemical

---

**Chemical: Shellfish toxin**

---

**See:** Saxitoxin

---

**Chemical: Silane, tetrachlo-**

---

**See:** Silicon tetrachloride

---

**Chemical: Silane, trichloro (1-chloroethenyl)-**

---

**See:** 2-Chlorovinyl-trichlorosilane

---

**Chemical: Silane, trichloro (1-chlorovinyl)-**

---

**See:** 2-Chlorovinyl-trichlorosilane

---

**Chemical: Silane, trichloro (2-chloroethenyl)-**

---

**See:** Trichloro (2-chloroethenyl) silicide

---

**Chemical: Silicic acid, tetrakis (1-methylethyl) ester**

---

**See:** Tetraisopropyl orthosilicate

---

**Chemical: Silicon (IV) chloride**

---

**See:** Silicon tetrachloride

---

**Chemical: Silicon chloride**

---

**See:** Silicon tetrachloride

---

**Chemical: Silicon tetrachloride**

---

**Synonym:** Silane, tetrachlo-Silicon (IV) chloride Silicon chloride

Tetrachlorosilane

**CAS No:** 10026-04-7

**Use:** Byproduct of L

---

**Chemical: Soda ash**

---

**See:** Sodium carbonate

---

**Chemical: Sodium**

---

**Synonym:** Natrium

**CAS No:** 7440-23-5

**Use:** Unscheduled precursor to Sarin

---

**Chemical: Sodium bifluoride**

---

**Synonym:** Sodium acid fluoride Sodium hydrogen fluoride

**CAS No:** 1333-83-1

**Use:** Sarin, Soman, and GF

---

**Chemical: Sodium acid fluoride**

---

**See:** Sodium bifluoride

---

**Chemical: Sodium borohydride**

---

**Synonym:** Sodium tetrahydridoborate Borate, tetrahydro-, sodium Sodium tetrahydroborate

**CAS No:** 16940-66-2

**Use:** Unscheduled precursor to BZ

---

**Chemical: Sodium carbonate**

---

**Synonym:** Carbonic acid, disodium salt

Soda ash

Solvay soda

**CAS No:** 497-19-8

**Use:** Unscheduled precursor to HN3

---

**Chemical: Sodium cyanide**

**Synonym:** Cymag  
Natrium cyanide  
Sodium cyanide (Na(CN))  
Cynogran  
Cyanide of Sodium  
Hydrocyanic acid, sodium salt  
**CAS No:** 143-33-9  
**Use:** Unscheduled precursor to Tabun

---

**Chemical:  
Sodium cyanide (Na(CN))**

**See:** Sodium cyanide

---

**Chemical:  
Sodium diethyl phosphite**

**See:** Sodium O,O-diethyl phosphite

---

**Chemical:  
Sodium diethoxyphosphine**

**See:** Sodium O,O-diethyl phosphite

---

**Chemical:  
Sodium diisopropyl phosphite**

**See:** Sodium diisopropyl phosphonate

---

**Chemical:  
Sodium diisopropyl phosphonate**

**Synonym:** Isopropyl sodium phosphite  
Phosphorous acid, diisopropyl ester, sodium salt  
Sodium diisopropyl phosphite  
**CAS No:** 27344-79-2  
**Use:** Unscheduled precursor to Sarin

---

**Chemical:  
Sodium dimethyl phosphonate**

**Synonym:** Sodium Dimethylphosphite  
Phosphonic acid, dimethyl-, sodium salt  
Sodium dimethyl phosphonic acid  
**Use:** Unscheduled precursor to Sarin and Soman

---

**Chemical: Sodium dimethyl phosphonic acid**

**See:** Sodium dimethyl phosphonate

---

**Chemical:  
Sodium dimethylphosphite**

**See:** Sodium dimethyl phosphonate

---

**Chemical: Sodium fluoride**

**Synonym:** Chemifluor  
FDA 0101  
Floridine  
Fluorigard  
Fluorol  
Flursol  
**CAS No:** 7681-49-4  
**Use:** Unscheduled precursor to "Perren-Kinnear" complex

---

**Chemical:  
Sodium hydrogen fluoride**

**See:** Sodium bifluoride

---

**Chemical: Sodium hydroxide**

**Synonym:** Aetznatron  
Ascarite  
Caustic soda  
**CAS No:** 1310-73-1  
**Use:** Unscheduled precursor to VX and HN2

---

**Chemical: Sodium methoxide**

**See:** Sodium methylate

---

**Chemical: Sodium methylate**

**Synonym:** Sodium methoxide  
Methanol, sodium salt  
**CAS No:** 124-41-4  
**Use:** Reaction catalyst in production of BZ

---

**Chemical: Sodium monosulfide**

**See:** Sodium sulfide

---

**Chemical:  
Sodium O,O-diethyl phosphite**

**Synonym:** Phosphonic acid, diethyl ester, sodium salt  
Sodium diethyl phosphite  
Diethyl sodium phosphite  
Diethyl sodium phosphonate  
Sodium diethoxyphosphine  
**CAS No:** 118080-94-7  
**Use:** Unscheduled precursor to Amiton

---

**Chemical: Sodium sulfide**

**Synonym:** Disodium monosulfide  
Disodium sulfide  
Sodium sulfide (Na<sub>2</sub>S)  
Sodium sulfuret  
Sodium monosulfide  
**CAS No:** 1313-82-2  
**Use:** Unscheduled precursor to Thiodiglycol

---

**Chemical: Sodium sulfide (Na<sub>2</sub>S)**

**See:** Sodium sulfide

---

**Chemical: Sodium sulfuret**

**See:** Sodium sulfide

---

**Chemical:  
Sodium tetrahydridoborate**

**See:** Sodium borohydride

---

**Chemical:  
Sodium tetrahydroborate**

**See:** Sodium borohydride

---

**Chemical:  
Sodium tetrahydroborate**

**See:** Lithium aluminum hydride

---

**Chemical: Solmethine**

**See:** Methylene dichloride

---

**Chemical: Solvy soda**

**See:** Sodium carbonate

---

**Chemical: Soman**

**Synonym:** O-Pinacolyl methylphosphonofluoridate GD

**Schedule:** 1A

**CAS No:** 96-64-0

**Synthesis:** DC, hydrogen fluoride, and pinacolyl alcohol

**Catalyst:** Tributylamine as a stabilizer

**Use:** Toxic chemical

---

**Chemical: Sonac**

**See:** Phosphoric acid

---

**Chemical: Spirit of Hartshorn**

**See:** Ammonia

---

**Chemical: STX**

**See:** Saxitoxin

---

**Chemical: Sulfinyl chloride**

**See:** Thionyl chloride

---

**Chemical: Sulfinyl dichloride**

**See:** Thionyl chloride

---

---

**Chemical: Sulfur**

**Synonym:** Atomic sulfur

Sulphur

Agri-sul

Asulfa-supra

Bisulfoid

Cosan 80

**CAS No:** 7704-34-9

**Use:** Unscheduled precursor to HD and VX; byproduct of HD

---

**Chemical: Sulfur oxochloride**

**See:** Thionyl chloride

---

**Chemical: Sulfur chloride**

**See:** Sulfur monochloride

---

**Chemical: Sulfur chloride oxide**

**See:** Thionyl chloride

---

**Chemical: Sulfur dichloride**

**Synonym:** Chlorine sulfide

Dichlorosulfane

Monosulfur dichloride

**Schedule:** 3B

**CAS No:** 10545-99-0

**Synthesis:** Sulfur monochloride and chlorine

**Catalyst:** Iron, antimony, or aluminum chloride

**Use:** Scheduled precursor to Mustard gas and Thionyl chloride

---

---

**Chemical: Sulfur monochloride**

**Synonym:** Sulfur chloride

Disulfur dichloride

Sulfur subchloride

Thiosulfurous dichloride

**Schedule:** 3B

**CAS No:** 10025-67-9

**Synthesis:** 1) sulfur and chlorine; 2) carbon disulfide and chlorine, nitrogen

**Catalyst:** iron filings, iodine, or ferric chloride

**Use:** Scheduled precursor to Mustard gas, Lewisite 1, Arsenic trichloride, and Thionyl chloride

---

**Chemical: Sulfur monochloride**

**Synonym:** Sulfur chloride

**CAS No:** 10025-67-9

**Use:** Sulfur mustard

---

**Chemical: Sulfur subchloride**

**See:** Sulfur monochloride

---

**Chemical: Sulfurous dichloride**

**See:** Thionyl chloride

---

**Chemical: Sulfurous oxochloride**

**See:** Thionyl chloride

---

**Chemical: Sulfuryl chloride**

**CAS No:** 7791-25-5

**Use:** Unscheduled precursor to Sarin and HD

---

**Chemical: Sulphur**

**See:** Sulfur

---

---

**Chemical: Sulphuret of carbon**

**See:** Carbon disulfide

---

**Chemical: SWS**

**See:** Methylphosphonothioic dichloride

---

**Chemical: T**

**See:** O-Mustard

---

**Chemical: T-1790**

**See:** HN1

---

**Chemical: T-724**

**See:** O-Mustard

---

**Chemical: t-Butyl chloride**

**Synonym:** tert-Butyl chloride

2-Chloro-2-methyl propane

Propane, 2-chloro-2-methyl

**CAS No:** 507-20-0

**Use:** Unscheduled precursor to Pinacolyl alcohol

---

**Chemical: T9**

**See:** HN3

---

---

**Chemical: Tabun**

**Synonym:** O-Ethyl N,N-dimethylphosphoramidocyanidate GA

**Schedule:** 1A

**CAS No:** 77-81-6

**Synthesis:** N,N-dimethylphosphoramidic dichloride and sodium cyanide

**Use:** Toxic chemical

---

**Chemical: TBA**

**See:** HN3

---

**Chemical: Tedegyl**

**See:** Bis(2-hydroxyethyl)sulfide

---

**Chemical: Teflon**

**See:** Polytetrafluoroethylene

---

**Chemical: tert-Butyl chloride**

**See:** t-Butyl chloride

---

**Chemical: tert-Butyl methyl**

keytone

**See:** Pinacolone

---

**Chemical: Tetrachloromethylphosphorane**

**See:** Methylphosphorus tetrachloride

---

**Chemical: Tetrachlorosilane**

**See:** Silicon tetrachloride

---

**Chemical: Tetrafluoroethene homopolymer**

**See:** Polytetrafluoroethylene

---

**Chemical: Tetrafluoroethylene**

**Synonym:** Ethane, tetrafluoro-Tetrafluoroethylene monomer  
**CAS No:** 116-14-3

**Use:** Unscheduled precursor to PFIB

---

**Chemical: Tetrafluoroethylene monomer**

**See:** Tetrafluoroethylene

---

**Chemical: Tetraisopropyl orthosilicate**

**Synonym:** Silicic acid, tetrakis (1-methylethyl) ester

**CAS No:** 1992-48-9

**Use:** Unscheduled precursor to Sarin and Soman

---

**Chemical: Tetram**

**See:** Amiton

---

**Chemical: Tetramethylethylene glycol**

**See:** 2,3-Dimethyl-2,3-butanediol

---

**Chemical: Thiodiethylene glycol**

**See:** Thiodiglycol

---

**Chemical: Thiodiglycol**

**See:** Bis(2-hydroxyethyl)

---

**Chemical: Thionyl chloride**

**Synonym:** Sulfurous oxychloride  
Sulfurous dichloride

Sulfinyl chloride

Sulfur chloride oxide

Thionyl dichloride

Sulfur oxychloride

Sulfinyl dichloride

**Schedule:** 3B

**CAS No:** 7719-09-7

**Synthesis:** Sulfur monochloride and sulfur dichloride

**Catalyst:** Activated carbon; iron chloride

**Use:** Scheduled precursor to Mustard gas, Lewisite 1, HN1, DC, and Arsenic trichloride

---

**Chemical: Thionyl dichloride**

**See:** Thionyl chloride

---

**Chemical: Thiosulfurous dichloride**

**See:** Sulfur monochloride

---

**Chemical: TR**

**See:** Diethyl methylphosphonite

---

**Chemical: Tributylamine**

**Synonym:** 1-Butanamine  
N,N-Dibutyl-

N,N-Dibutyl-1-butanamine

**CAS No:** 100-82-9

**Use:** Stabilizer for Soman

---

**Chemical: Trichloro (1-chloroethenyl) silane**

**See:** 2-Chlorovinyl-trichlorosilane

---

**Chemical: Trichloro (2-chloroethenyl) silane**

**See:** Trichloro (2-chloroethenyl) silicide

---

**Chemical: Trichloro (2-chloroethenyl) silicide**

**Synonym:** Silane, trichloro (2-chloroethenyl)-  
Trichloro (2-chloroethenyl) silane

**CAS No:** 690-18-6

**Use:** Unscheduled precursor to L1-3

---

**Chemical: Trichloroarsine**

**See:** Arsenic trichloride

---

**Chemical: Trichloronitromethane**

**See:** Chloropicrin

---

**Chemical: Triethanol ammonium chloride**

**See:** Triethanolamine hydrochloride (HN-3)

---

---

**Chemical: Triethanolamine**

**Synonym:** Tris(2-hydroxyethyl)amine  
2,2,2-Nitrioltriethanol  
Trolamine

**Schedule:** 3B

**CAS No:** 102-71-6

**Synthesis:** Ethylene oxide and ammonia

**Use:** Scheduled precursor to HN3

---

**Chemical: Triethanolamine hydrochloride (HN-3)**

**Synonym:** Triethanolamine hydrochloride acid salt  
Triethanol ammonium chloride  
Tris(2-hydroxyethyl) amine hydrochloride  
Ethanol, 2,2',2'', -nitrioltris-, hydrochloride

**CAS No:** 637-39-8

**Use:** Nitrogen mustard

---

**Chemical: Triethanolamine hydrochloride acid salt**

**See:** Triethanolamine hydrochloride (HN-3)

---

**Chemical: Triethyl ester**

**See:** Triethyl phosphite

---

---

**Chemical: Triethyl phosphite**

**Synonym:** Phosphorus acid Triethyl ester

**Schedule:** 3B

**CAS No:** 122-52-1

**Synthesis:** Ethanol and phosphorus oxychloride

**Catalyst:** Diethylaniline or petroleum ether

**Use:** Scheduled precursor to DMMP

---

**Chemical: Triethylamine, 2-chloro-, hydrochloride**

**See:** (N,N-diethylamino) ethyl chloride hydrochloride

---

**Chemical: Trimethyl ester**

**See:** Trimethyl phosphite

---

**Chemical: Trimethyl phosphite**

**Synonym:** Trimethyl ester

**Schedule:** 3B

**CAS No:** 121-45-9

**Synthesis:** Phosphorus trichloride and methanol

**Catalyst:** Diethylaniline, petroleum ether

**Use:** Scheduled precursor to DMMP

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**Chemical: Trimethylene dichloride**

**See:** 1,3-Dichloropropane

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**Chemical: Trimethylethylene**

**See:** 2-Methyl-2-butane

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**Chemical: Trinitrophenol**

**See:** Picric acid

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**Chemical: Triphenylcarbinol**

**Synonym:** Trityl alcohol  
Benzenemethanol, alpha-diphenyl-Triphenylmethanol  
Tritanol

**CAS No:** 76-84-6

**Use:** Stabilizer for HN2 and HN3

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**Chemical: Triphenylmethanol**

**See:** Triphenylcarbinol

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**Chemical: Tris(.beta.-chloroethyl) amine hydrochloride**

**See:** Tris(2-chloroethyl) amine hydrochloride

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**Chemical: Tris(2-hydroxyethyl) amine hydrochloride**

**See:** Triethanolamine hydrochloride (HN-3)

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**Chemical: Tris(2-chloroethyl) amine hydrochloride**

**Synonym:** Tris(.beta.-chloroethyl) amine hydrochloride  
2-Chloro-N,N-bis(2-chloroethyl) ethanamine hydrochloride  
Ethanamine, 2-chloro-N,N-bis(2-chloroethyl)

**CAS No:** 817-09-4

**Use:** Unscheduled precursor to HN3

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**Chemical: Tris(2-chloroethyl)amine**

**See:** HN3

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**Chemical: Tris(2-chlorovinyl)arsine**

**See:** Lewisite 3

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**Chemical: Tris(2-hydroxyethyl)amine**

**See:** Triethanolamine

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**Chemical: Tritanol**

**See:** Triphenylcarbinol

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**Chemical: Trityl alcohol**

**See:** Triphenylcarbinol

---

**Chemical: Trolamine**

**See:** Triethanolamine

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## CWC CHEMICALS

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### Chemical: TRS

See: O,O Diethyl methylphosphonothionate

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### Chemical: TZ

See: Saxitoxin

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### Chemical: VCL

See: Vinyl chloride

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### Chemical: VCM

See: Vinyl chloride

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### Chemical: Vinyl chloride

Synonym: Chloroethylene

1-Chloroethylene  
Chloroethene VCL  
Monochloroethylene  
VCL  
VCM

CAS No: 75-01-4

Use: Unscheduled precursor to QT

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### Chemical: Vinyl sulfide

See: Divinyl sulfide

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### Chemical: Vinylene

See: Acetylene

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### Chemical: Vinylsulfanylene

See: Divinyl sulfide

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### Chemical: VX

Synonym: O-Ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate

Schedule: 1A

CAS No: 50782-69-9

Synthesis: QL and sulfur

Use: Toxic chemical

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### Chemical: WC-Reiniger

See: Phosphoric acid

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### Chemical: Yellow cross

See: See Bis(2-chloroethyl)sulfide

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### Chemical: YL

See: O-Ethyl methyl phosphinic acid

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### Chemical: YLS

See: O-Ethyl methylphosphonothioic acid

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### Chemical: Yperite

See: Bis(2-chloroethyl)sulfide

CAS No	Chemical	CAS No	Chemical
50-00-0	Formaldehyde	102-71-6	Triethanolamine
51-75-2	HN2	105-59-9	Methyl diethanolamine
55-22-1	Isonicotinic acid	107-07-3	2-Chloroethanol
60-24-2	2-Hydroxyethanethiol	107-16-4	Hydroxyacetoneitrile
64-17-5	Ethanol	107-31-3	Methyl formate
67-56-1	Methanol	107-44-8	O-Isopropyl methylphosphonofluoridate
67-63-0	Isopropanol		2-(N,N-Dimethylamino) ethyl chloride
74-82-8	Methane	107-99-3	Diisopropylamine
74-85-1	Ethylene		4-Methylpyridine
74-86-2	Acetylene	108-18-9	Diethylamine
74-87-3	Methyl chloride	109-89-4	Diethanolamine
74-88-4	Methyl iodide	109-89-7	Diethylene glycol
74-89-5	Methylamine	111-42-2	Bis(2-hydroxyethyl)sulfide
74-90-8	Hydrogen cyanide	111-46-6	Perfluoro cyclobutane
75-01-4	Vinyl chloride	111-48-8	Tetrafluoroethylene
75-04-7	Ethylamine	115-25-3	Perfluoropropylene
75-05-2	Methylene chloride	116-14-3	Benzoin
75-09-2	Methylene dichloride	116-15-4	Trimethyl phosphite
75-15-0	Carbon disulfide	119-53-9	Triethyl phosphite
75-21-8	Ethylene oxide	121-45-9	Dimethylamine
75-44-5	Phosgene	122-52-1	Sodium methylate
75-83-2	2,2-Dimethylbutane	124-40-3	Benzil
75-97-8	Pinacolone	124-41-4	Ethyldiethanolamine
76-06-2	Chloropicrin	134-81-6	Ethanolamine
76-09-5	2,3-Dimethyl-2,3-butanediol	139-87-7	Mesityl oxide
		141-43-5	1,3-Dichloropropane
76-84-6	Triphenylcarbinol	141-79-7	Sodium cyanide
76-89-1	Methyl benzilate	142-28-9	Potassium cyanide
76-93-7	2,2-Diphenyl-2-hydroxyacetic acid (benzilic acid)	143-33-9	PFIB
		151-50-8	Ethylphosphonous difluoride
77-81-6	Tabun	382-21-8	Pinacolyl alcohol
78-38-6	Diethyl ethylphosphonate	430-78-4	Sodium carbonate
78-53-5	Amiton	464-07-3	Diphosgene
88-89-1	Picric acid	497-19-8	Bis(2-chloroethyl)sulfide
96-64-0	Soman	503-38-8	Dimethylamine HCl
96-79-7	N,N-Diisopropyl-(beta)-aminoethyl chloride	505-60-2	Cyanogen bromide
		506-59-2	Cyanogen chloride
96-80-0	N,N-Diisopropyl-(beta)-aminoethanol	506-68-3	t-Butyl chloride
		506-77-4	2-Methyl-2-butane
100-35-6	2-(N,N-Diethylamino)ethyl chloride	507-20-0	1,2-Bis(2-hydroxyethylthio)ethane
		513-35-9	HN1
100-38-9	N,N-Diethylaminoethanethiol	524-43-8	1,2-Ethanedithiol
		538-07-8	Lewisite 1
100-58-3	Phenyl magnesium bromide	540-63-6	
100-82-9	Tributylamine	541-25-3	



CAS No	Chemical	CAS No	Chemical	CAS No	Chemical	CAS No	Chemical
542-88-1	Bis(chloromethyl)ether	1193-65-3	3-Quinuclidinone	6581-11-1	BZ	35523-89-8	Saxitoxin
555-77-1	HN3		hydrochloride	6996-81-2	O,O Diethyl	36716-60-6	2-(N,N-Dipropylamino)
589-57-1	Diethylphosphorachloridite	1310-73-1	Sodium hydroxide		methylphosphonothionate		ethyl chloride
627-51-0	Divinyl sulfide	1313-82-2	Sodium sulfide	7040-57-5	Chlorosoman	40334-69-8	Lewisite 2
628-76-2	1,5-Dichloro-n-pentane	1314-56-3	Phosphorus pentoxide	7040-58-6	O,O-Dipinacolyl	40334-70-1	Lewisite 3
637-39-8	Triethanolamine	1314-80-3	Phosphorus pentasulfide		methylphosphonate	40881-98-9	N,N
	hydrochloride (HN-3)	1333-83-1	Sodium bifluoride	7426-02-0	Bis(2-		Dipropylphosphoramidic
676-83-5	Methylphosphonous	1445-75-6	DIMP		hydroxyethylthioethyl)ether		dichloride
	dichloride	1445-76-7	Chlorosarin	7440-23-5	Sodium	44860-68-6	Bis(2-
676-97-1	Methylphosphonyl	1498-40-4	Ethylphosphonous	7446-70-0	Aluminum chloride		hydroxyethylthio)methane
	dichloride		dichloride	7447-39-4	Cupric chloride	50782-69-9	VX
676-98-2	Methylphosphonothioic	1570-45-2	Ethyl isonicotinate	7487-94-7	Mercuric chloride	57856-11-8	O-Ethyl,2-diisopropyl
	dichloride	1619-34-7	Quinuclidine-3-ol	7647-01-0	Hydrochloric acid (HCl)		aminoethyl
676-99-3	Methylphosphonyl	1627-53-3	Arsenic trioxide	7664-38-2	Phosphoric acid		methylphosphonate
	difluoride	1809-20-7	Diisopropyl phosphonate	7664-39-3	Hydrogen fluoride	57856-12-9	Bis(2-diisopropylamino
677-43-0	N,N	1809-20-9	DIHP	7664-41-7	Ammonia		ethyl) methylphosphonite
	Dimethylphosphoramidic	1838-39-7	1-Carboxymethyl-4-	7681-49-4	Sodium fluoride	63869-13-6	Bis(2-
	dichloride		carboxypiperidine	7704-34-9	Sulfur		chloroethylthio)methane
690-18-6	Trichloro (2-chloroethenyl)	1992-48-9	Tetraisopropyl orthosilicate	7719-09-7	Thionyl chloride	63905-10-2	1,3-Bis(2-chloroethylthio)
	silicide	2404-03-7	Diethyl N,N-dimethyl	7719-12-2	Phosphorus trichloride		npropane
691-96-3	O,O-Diisopropyl		phosphoramidate	7782-50-5	Chlorine	63918-89-8	O-Mustard
	hydrogenphosphonate	2441-27-2	2-Chlorovinyl-trichlorosilane	7784-34-1	Arsenic trichloride	63918-90-1	Bis(2-
753-59-3	Methylphosphonous	2510-93-2	O-Ethyl N,N-dimethyl	7789-23-3	Potassium fluoride		chloroethylthiomethyl)ether
	difluoride		phosphoramidochloridate	7789-29-9	Potassium bifluoride	71840-25-0	O-Ethyl O-2-
753-98-0	Ethylphosphonyl	2524-04-1	O,O-Diethyl	7791-25-5	Sulfuryl chloride		Diisopropylaminoethyl
	difluoride		phosphorothionochloridate	9002-84-0	Polytetrafluoroethylene		methylphosphonothionate
756-79-6	Dimethyl	2625-76-5	2-	9009-86-3	Ricin	73207-98-4	S-2-Diisopropylaminoethyl
	methylphosphonate		Chloroethylchloromethylsulfide	10025-67-9	Sulfur monochloride		methylphosphonothioic
762-04-9	Diethyl phosphite	2632-87-3	O,O-Diethyl N,N	10025-67-9	Sulfur monochloride sulfur		acid
814-49-3	O,O		dimethylphosphoramidite		chloride	97931-20-9	O-Pinacolyl
	Diethylphosphorochloridate	2725-68-0	Methylphosphorus	10025-87-3	Phosphorus oxychloride		ethylphosphonofluoridate
817-09-4	Tris(2-chloroethyl) amine		tetrachloride	10026-04-7	Silicon tetrachloride	118080-94-7	Sodium O,O-diethyl
	hydrochloride	3238-75-3	2-(N,N-Dipropylamino)	10026-13-8	Phosphorus pentachloride		phosphite
868-85-9	Dimethyl phosphite		ethanol	10545-99-0	Sulfur dichloride	135469-38-4	3,3-Diemethylbutane-2-
869-24-9	(N,N-diethylamino) ethyl	3554-74-3	3-Hydroxy-1	15715-41-0	Diethyl methylphosphonite		sulfonic acid
	chloride hydrochloride		methylpiperdine	16260-48-3	1,3-Bis(2-hydroxyethylthio)-	142868-93-7	1,4-Bis(2-chloroethylthio)
1002-41-1	Bis(2-chloroethyl)	3563-36-8	Sesquimustard		n-propane		nbutane
	disulfide	3731-38-2	3-Quinuclidinone	16391-07-4	O-Ethyl methyl phosphinic	142868-94-8	1,5-Bis(2-chloroethylthio)
1066-50-8	Ethylphosphonic	4083-88-9	"Perren-Kinnear" complex		acid		npentane
	dichloride	4261-68-1	2-(N,N-Diisopropylamino)	16853-85-3	Lithium aluminum hydride		
1066-52-0	Methyl		ethyl chloride hydrochloride	16940-66-2 S	odium borohydride		
	methylphosphonochloridate	4535-86-8	(N,N-Dipropylamino) ethyl	18005-40-8	O-Ethyl		
1066-53-1	O-Methyl		chloride hydrochloride		methylphosphonothiolic		
	methylphosphonate	4584-46-7	(N,N-Dimethylamino) ethyl		acid		
1070-90-2	1,2-Dimethyldiphosphonic	5842-07-9	chloride hydrochloride	23306-80-1	N,N-Diisopropyl		
	acid		N,N		phosphoramidic dichloride		
1189-87-3	O-Isopropyl		Diisopropylaminoethanethiol	27344-79-2	Sodium diisopropyl		
	ethylphosphonofluoridate	6163-75-3	Dimethyl ethylphosphonate		phosphonate		

## LIST OF ABBREVIATIONS

(EXCLUDING CHEMICAL NAMES)

<b>CAS</b>	Chemical Abstracts Service
<b>CWC</b>	Chemical Weapons Convention
<b>DTIRP</b>	Defense Treaty Inspection Readiness Program
<b>DTRA</b>	Defense Threat Reduction Agency
<b>EIF</b>	Entry Into Force

## RELATED MATERIALS

Order through DTIRP Outreach Program Coordinator  
1-800-419-2899

101B Challenge Inspections under the  
Chemical Weapons Convention  
**Bulletin**

102P Chemical Weapons Convention-The Impact  
**Pamphlet**

104V Chemical Weapons Convention—The Impact  
**Video**

107V Managed Access under the Chemical Weapons Convention  
**Video**

108P CWC - Questions Facing the U.S. Defense Industry  
**Pamphlet**

112P Managed Access under the Chemical Weapons Convention  
**Pamphlet**

114P Features of Chemical Facilities  
**Pamphlet**

115P Routine Inspections under the Chemical Weapons Convention  
**Pamphlet**

117P Guide for Challenge Inspections under  
the Chemical Weapons Convention  
**Pamphlet**

118P Guide for Initial and Routine Inspections under  
the Chemical Weapons Convention  
**Pamphlet**

119P CWC Challenge Inspection Planning Considerations  
**Pamphlet**

- 122P Guide to Managed Access under  
the Chemical Weapons Convention  
**Pamphlet**
- 123A Development of a Chemical Weapons Convention  
Pre-Inspection Briefing  
**Article**
- 125P CWC Inspection Preparation Guide  
**Pamphlet**
- 127C Chemical Weapons Agreements Information  
**CD-ROM**
- 131P Rights & Obligations of the Inspection Team & the Inspected State  
Party under the Chemical Weapons Convention  
**Pamphlet**
- 132P Quick Reference Guide to Chemical Equipment  
**Pamphlet**
- 133B Role of the Requesting State Party Observer in  
CWC Challenge Inspection  
**Bulletin**
- 152P CWC Inspector's Privileges and Immunities  
**Pamphlet**
- 407C Arms Control Treaties Information  
**CD-ROM**
- 408P Arms Control Agreements Synopses  
**Pamphlet**
- 410P Quick Reference Guide to Arms Control Inspection Timelines  
**Pamphlet**
- 906B Transparency During Arms Control Inspections  
**Bulletin**
- 907P DTIRP Arms Control Outreach Catalog  
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**Video**
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**CD-ROM**
- 950V The Technical Equipment Inspection (TEI) Process  
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**Video**
- 952V Arms Control Security Countermeasures: Selection & Application  
**Video**
- 953V Arms Control Inspection: Site & Building Preparation  
**Video**
- 954T Why TEI?  
**Tri-fold Brochure**

## NOTES

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