

Export Control of Chemicals, Bio-Agents/Toxins

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I. EAR/CCL-Listed Biological Agents and Toxins 15 CFR 774, Supp. 1 (IC 351, IC 352, IC 353, IC 354, IC 360)	
<p>A. Reason for Listing</p> <p>1. Chemical and Biological Weapons Control (CB) (Column 1 of country chart)</p> <p style="text-align: center;"><u>And</u></p> <p>2. Anti-terrorism (AT) (Column 1 of country chart)</p> <p>➤ License required for export to all countries/foreign nationals and, if exclusion does not apply, for “deemed” export* of technology for the use, development or production of these agents and toxins; and considered on case-by-case basis</p> <p>➤ See Country chart 15 CFR 738, Supp. 1</p> <p>*Note: “Deemed” exports (exposure to foreign nationals in the U.S.) apply to technology and software, not merely to goods. 15 CFR 734.2(b)(1) and (2)(ii). When equipment is exposed to foreign nationals on a U.S. campus, it is usually accompanied by some transmittal of use or other information or instruction constituting “technology.” The same may be the case with chemicals and biologicals. However, the mere transmittal of a chemical or biological, without <u>any</u> accompanying information or instruction, in the U.S. is not an export or deemed export. Giving a chemical or biological to a recipient whom it is known may take the chemical or biological out of the U.S. (export), violates 15 CFR 736.2(b)(10).</p>	<p>Agent/Toxin</p> <p>IC 351</p> <p>a) Viruses, as follows: Chikungunya virus; Congo –Crimean haemorrhagic fever virus; Dengue fever virus; Eastern equine encephalitis virus; Ebola virus; Hantaan virus; Japanese encephalitis virus; Junin virus; Lassa fever virus; Lymphocytic choriomeningitis virus; Machupo virus; Marburg virus; Monkey pox virus; Rift Valley fever virus; Tick-borne encephalitis virus (Russian Spring-Summer encephalitis virus); Variola virus; Venezuelan equine encephalitis virus; Western equine encephalitis virus; White pox; Yellow fever virus; Kyasanur Forest virus; Louping ill virus; Murray Valley encephalitis virus; Omsk haemorrhagic fever virus; Oropouche virus; Powassan virus; Rocio virus; St. Louis encephalitis virus; Hendra virus (Equine morbillivirus); South American haemorrhagic fever (Sabia, Flexal, Guanarito); Pulmonary and renal syndrome-haemorrhagic fever viruses (Seoul, Dobrava, Puumala, Sin Nombre); or Nipah virus.</p> <p>b) Rickettsiae, as follows: Bartonella quintana (Rochalimea quintana, Rickettsia quintana); Coxiella burnetii; Rickettsia prowasecki; or Rickettsia rickettsii.</p> <p>c) Bacteria as follows: Bacillus anthracis; Brucella abortus; Brucella melitensis; Brucella suis; Burkholderia mallei (Pseudomonas mallei); Burkholderia pseudomallei (Pseudomonas pseudomallei); Chlamydia psittaci; Clostridium botulinum; Francisella tularensis; Salmonella typhi; Shigella dysenteriae; Vibrio cholerae; Yersinia pestis; Clostridium perfringens, epsilon toxin producing types; or Enterohaemorrhagic Escherichia coli, serotype O157 and other verotoxin producing serotypes.</p> <p>d) Toxins as follows: and subunits thereof: Botulinum toxins; Clostridium perfringens toxins; Conotoxin; Microcystin (Cyanoginosin); Shiga toxin; Staphylococcus aureus toxins; Tetrodotoxin; Verotoxin; Aflatoxins; Abrin; Cholera toxin; Diacetoxyscirpenol toxin; T-2 toxin; HT-2 toxin; Modeccin toxin; Volkensin toxin; Viscum Album Lectin 1 (Viscumin)</p> <p>IC 352</p> <p>a) Viruses, as follows: African swine fever virus, Avian influenza virus that are: Defined in EC Directive 92/40/EC (O.J. L.16 23.1.92 p.19) as having high pathogenicity, as follows: Type A Viruses with an IVPI (intra-venous pathogenicity index) in 6 week old chickens of greater than 1.2; or Type A viruses H5 or H7 subtype for which nucleotide sequencing has demonstrated multiple basic amino acids at the cleavage site of haemagglutinin; Bluetongue virus; Foot and mouth disease virus; Goat pox virus;</p>

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	<p>Porcine herpes virus (Aujeszky's disease); Swine fever virus (Hog cholera virus); Lyssa virus; Newcastle disease virus; Peste des petits ruminants virus; Porcine enterovirus type 9 (swine vesicular disease virus); Rinderpest virus; Sheep pox virus; Teschen disease virus; Vesicular stomatitis virus; Lumpy skin disease virus; African horse sickness virus.</p>
	<p>b) Bacteria, as follows: <i>Mycoplasma mycoides</i></p> <p><u>IC 353</u> Genetically modified organisms or genetic elements that contain nucleic acid sequences coding for any of the "toxins" controlled by IC351.d or 1C 360.d or "sub-units of toxins" thereof, or that contain nucleic acid sequences associated with the pathogenicity of micro-organisms controlled by IC 351 a-c, IC 352, IC 354, or IC 360.</p> <p><u>IC 354</u> Bacteria, as follows: <i>Xanthomonas albilineans</i>; <i>Xanthomonas campestris</i> pv. <i>citri</i> including strains referred to as <i>Xanthomonas campestris</i> pv. <i>citri</i> types A,B,C,D,E or otherwise classified as <i>Xanthomonas citri</i>, <i>Xanthomonas campestris</i> pv. <i>aurantifolia</i> or <i>Xanthomonas campestris</i> pv. <i>Citrumelo</i>; <i>Xanthomonas oryzae</i> pv. <i>Oryzae</i> (syn. <i>Pseudomonas campestris</i> pv. <i>Oryzae</i>); <i>Clavibacter michiganensis</i> subspecies <i>sepedonicus</i> (syn. <i>Corynebacterium michiganensis</i> subspecies <i>sepedonicum</i>); <i>Ralstonia solanacearum</i> Races 2 and 3 (syn. <i>Pseudomonas solanacearum</i> Races 2 and 3 or <i>Burkholderia solanacearum</i> Races 2 and 3).</p> <p>Fungi, as follows: <i>Colletotrichum coffeanum</i> var. <i>virulans</i> (<i>Colletotrichum kahawae</i>); <i>Cochliobolus miyabeanus</i> (<i>Helminthosporium oryzae</i>); <i>Microcyclus ulei</i> (syn. <i>Dothidella ulei</i>); <i>Puccinia graminis</i> (syn. <i>Puccinia graminis</i> f.sp. <i>tritici</i>) <i>Puccinia striiformis</i> (syn. <i>Puccinia glumarum</i>); <i>Magnaporthe grisea</i> (<i>pyricularia grisea/pyricularia oryzae</i>)</p> <p>Viruses, as follows: Potato Andean latent tymovirus; Potato spindle tuber viroid.</p> <p><u>IC 360</u> Human and zoonotic pathogens and toxins, as follows: Viruses, as follows: Central European tick-borne encephalitis viruses, as follows: Absettarov, Hanzalova, Hypr, Kumlinge; Cercopithecine herpesvirus 1 (Herpes B virus); Reconstructed replication competent forms of the 1918 pandemic influenza virus containing any portion of the coding regions of all eight gene segments; Fungi, as follows: <i>Coccidioides immitis</i>; <i>coccidioides posadasii</i> Toxins, as follows: Shiga-like ribosome inactivating proteins not controlled under ECCN 1C351.d.10;</p> <p>Animal pathogens, as follows: Viruses, as follows: Akabane virus; Bovine spongiform encephalopathy agent; Camel</p>

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	<p>pox virus; Malignant catarrhal fever virus; Menagle virus; Mycoplasma, as follows: Mycoplasma capricolum; Mycoplasma F38 Rickettsia, as follows: Ehrlichia ruminantium (a.k.a. Cowdria ruminantium); Plant pathogens, as follows: Bacteria, as follows: Candidatus Liberobacter africanus (a.k.a. Liberobacter africanus); Candidatus Liberobacter asiaticus (a.k.a. Liberobacter asiaticus); Xylella fastidiosa pv. Citrus variegated chlorosis (CVC); Fungi, as follows: Peronosclerospora philippinensis; Sclerophthora rayssiae var. zaeae; Synchytrium endobioticum.</p>
<p>B. Reason for Listing</p> <p>1. Chemical Weapons Convention (CWC) Compliance (CW), CB (Column 1 of country chart), and AT (Column 1 of country chart).</p> <ul style="list-style-type: none"> ➤ License required for export to <u>all</u> countries/foreign nationals and , if exclusion does not apply, for “deemed” exports* of technology for the development, use, and production of these agents and toxins. ➤ See 15 CFR 742.18 for CW licensing requirements (country chart n/a to chemicals, bio-agents/toxins controlled for CW reasons). ➤ Also review Country Chart (15 CFR 738, Supp. 1) to determine licensing requirements in connection with CB and AT listings. 	<p>Ricin (D and E) Saxitoxin</p>

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II. EAR/CCL-Listed Chemical Weapons Convention Chemicals/Toxins 15 CFR 774, Supp. 1 (IC 355) – Schedule 2 and 3 Chemical Weapons Convention Chemicals (not under IC 350 or ITAR USML)	
<p>A. Reason for Listing</p> <p>1. CW, AT</p> <ul style="list-style-type: none"> ➤ License required for export , and if exclusion does not apply, for deemed export* of technology for use, production or development, of Schedule 2 CWC Chemicals to <u>all</u> countries/foreign nationals that are <u>not</u> a party to the CWC, and conditions apply. <ul style="list-style-type: none"> - License generally will be denied for non-CWC countries ➤ See 15 CFR 742.18 for CW licensing requirements (country chart n/a to chemicals and bio-agents/toxins controlled for CW reasons). ➤ See 15 CFR 742 and 15 CFR 738, Supp. 1 for licensing requirements for AT reasons. A license is required for AT reasons for export or reexport for items controlled by 1C355 to Cuba, Iran, Iraq, Libya, North Korea, Sudan and Syria. 	<p>CW Schedule 2 Chemicals IC 355 a PFIB: 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (C.A.S. 382-21-8); Precursors: Family: Chemicals except for those listed in Schedule 1, containing a phosphorus atom to which is bonded one methyl, ethyl, or propyl (normal or iso) group with no additional carbon atoms in the structure; (Note: IC355.a.2.a does not control Fonofos; O-Ethyl S-phenylethylphosphonothiolothionate (C.A.S. 944-22-9)) Family: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides; Family: Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidates; Family: N,N-Dialyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-chlorides and corresponding protonated salts Family: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts Note: IC355.a.2.e does not control N,N-Dimethylaminoethanol and corresponding protonated salts (C.A.S. 108-01-0) or N,N-Diethylaminoethanol and corresponding protonated salts (C.A.S. 100-37-8) Family: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts</p> <p>Includes Mixtures where IC 355 a chemicals > 10% of weight, except mixtures containing PFIB are covered if PFIB > 1% of weight</p> <p>Mixtures containing IC 355 a or b chemicals that are normal ingredients of consumer goods packaged for retail sale for personal use or packaged for individual use are EAR 99 only.</p>

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<p>B. Reason for Listing</p> <p>1. CW, AT</p> <ul style="list-style-type: none"> ➤ License required for export and, if exclusion does not apply, for deemed export* of technology for use, development and production, of Schedule 3 CWC Chemicals to <u>all</u> countries/foreign nationals <u>not</u> a party to the CWC <u>unless</u> an End-User Certificate is issued by Governments of all Importing Countries <ul style="list-style-type: none"> -License will generally be denied for non-CWC countries. ➤ See 15 CFR 742.18 for CW licensing requirements (country chart n/a to chemicals and bio-agents/toxins controlled for CW reasons). ➤ See County Chart, 15 CFR 738, Supp1 also for licensing requirements related to AT listing. 	<p>CWC Schedule 3 Chemicals</p> <p>IC 355 b</p> <p>Phosgene: Carbonyl dichloride (75-44-5); Cyanogen chloride (506-77-4); Hydrogen cyanide (74-90-8); Chloropicrin trichloronitromethane (CAS 76-06-2)</p> <p>Precursors: Ethyldiethanolamine (139-87-7); Methyldiethanolamine (105-59-9)</p> <ul style="list-style-type: none"> - Includes mixtures where IC 355 b chemicals \geq 30% of weight - Mixtures containing IC 355 a or b chemicals that are normal ingredients of consumer goods packaged for retail sale for personal use or packaged for individual use are EAR 99 only.

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III. EAR/CCL-Listed Chemicals That May Be Precursors for Toxic Chemicals– 15 CFR 774 Supp. 1 (IC 350)	
<p>A. Reason for Listing</p> <p>1. CW, CB (country chart, column 2), and AT</p> <p>➤ License required for exports, and, if exclusion does not apply, for deemed export* of technology for use, production and development, of CW-listed chemicals for all countries/foreign nationals <u>not</u> parties to the CWC (but license required for <u>all</u> countries, if chemical is marked with * -- and, license required for all countries <u>not</u> parties to CWC unless Governments of all Importing Countries issue an End-User Certificate for chemicals marked with ** -- and license required for countries <u>not</u> a party to CWC for chemicals marked with "1".</p> <p>➤ See 15 CFR 742.18 for CW licensing requirements (country chart n/a to chemicals and bio-agents/toxins controlled for CW reasons)</p> <ul style="list-style-type: none"> - License generally will be denied for non-CWC countries. <p>B. See country chart, column 2 (15 CFR 738, Supp. 1) to determine licensing requirements in connection with CB listing.</p>	<p>IC 350</p> <p>(C.A.S. #7784-34-1) Arsenic trichloride; (C.A.S. #76-93-7) Benzilic acid;(C.A.S. #78-38-6) Diethyl ethylphosphonate; (C.A.S. #15715-41-0) Diethyl methylphosphonite; (C.A.S. #2404-03-7) Diethyl-N,N-dimethylphosphoroamidate; (C.A.S. #762-04-9) Diethyl phosphite; (C.A.S. #5842-07-9) N,N-Diisopropyl-beta-aminoethane thiol; (C.A.S. #4261-68-1) N,N-Diisopropyl-beta-aminoethyl chloride hydrochloride; (C.A.S. #96-80-0) N,N-Diisopropyl-beta-aminoethanol; (C.A.S. #96-79-7) N,N-Diisopropyl-beta-aminoethyl chloride; (C.A.S. #6163-75-3) Dimethyl ethylphosphonate; (C.A.S. #756-79-6) Dimethyl methylphosphonate; (C.A.S. #868-85-9) Dimethyl phosphite (dimethyl hydrogen phosphite); (C.A.S. #1498-40-4) Ethyl phosphonous dichloride [Ethyl phosphinyl dichloride];(C.A.S. #430-78-4) Ethyl phosphonous difluoride [Ethyl phosphinyl difluoride]; (C.A.S. #1066-50-8) Ethyl phosphonyl dichloride; (C.A.S. #10025-87-3) Phosphorus oxychloride; (C.A.S. #10026-13-8) Phosphorus pentachloride; (C.A.S. #7719-12-2) Phosphorus trichloride; (C.A.S. #464-07-3) Pinacolyl alcohol; (C.A.S. #1619-34-7) 3-Quinuclidinol; (C.A.S. #10025-67-9) Sulfur monochloride; (C.A.S. #10545-99-0) Sulfur dichloride; (C.A.S. #111-48-8) Thiodiglycol; (C.A.S. #7719-09-7) Thionyl chloride; (C.A.S. #102-71-6) Triethanolamine; (C.A.S. #122-52-1) Triethyl phosphite; (C.A.S. #121-45-9) Trimethyl phosphite; (C.A.S. #139-87-7) Ethyldiethanolamine; (C.A.S. #993-13-5) Methylphosphonic acid; (C.A.S. #667-43-0) N,N dimethylamino-phosphoryl dichloride; (C.A.S. #676-98-2) Methyphosphonothioic dichloride.</p> <p>- Includes mixtures in which at least one of the above chemicals constitutes $\geq 30\%$ of weight.</p> <p>- The following are controlled by the Department of State, Directorate of Defense Trade Controls: (C.A.S. #57856-11-8) O-Ethyl-2-diisopropylaminoethyl methyl phosphonite (QL); (C.A.S. #753-98-0) Ethyl phosphonyl difluoride; (C.A.S. #676-83-5) Methyl phosphonous dichloride [Methyl phosphinyl dichloride]; (C.A.S. #753-59-3) Methyl phosphonous difluoride [methyl phosphinyl difluoride]; (C.A.S. #676-97-1) Methyl phosphonyl dichloride; (C.A.S. #676-99-3) Methyl phosphonyl difluoride.</p>

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	<p>- Mixtures containing 1C 350 chemicals that are normal ingredients of consumer goods packaged for retail sale or personal use are classified as EAR 99 only.</p> <p>- Certain medical, analytic, diagnostic, and food testing kits containing small quantities of chemicals identified in 1C 350, except those containing chemicals identified with a ¹, are controlled under 1C 395 or 1C 995. Replacement reagents for such kits are controlled by 1C 350 if the reagents contain one or more of the precursor chemicals identified in this section in concentrations equal to or greater than the control levels for mixtures.</p>
<p>B. Reason for Listing</p> <p>1. CB (column 2 of country chart), AT</p> <p>➤ See country chart, 15 CFR 738, Supp. 1, to determine licensing requirements in connection with CB listing.</p>	<p>Precursor Chemicals as follows: (C.A.S. #1341-49-7) Ammonium hydrogen fluoride; (C.A.S. #107-07-3) 2-Chloroethanol; (C.A.S. #100-37-8) N.N. Diethylaminoethanol; (C.A.S. #108-18-9) Di-isopropylamine; (C.A.S. #124-40-3) Dimethylamine; (C.A.S. #506-59-2) Dimethylamine hydrochloride; (C.A.S. #7664-39-3) Hydrogen fluoride; (C.A.S. #3554-74-3) 3-Hydroxyl-1-methylpiperidine; (C.A.S. #76-89-1) Methyl benzilate; (C.A.S. #1314-80-3) Phosphorous pentasulfide; (C.A.S. #75-97-8) Pinacolone; (C.A.S. #151-50-8) Potassium cyanide; (C.A.S. #7789-23-3) Potassium fluoride; (C.A.S. #7789-29-9) Potassium bifluoride; (C.A.S. #3731-38-2) 3-Quinuclidone; (C.A.S. #1333-83-1) Sodium bifluoride; (C.A.S. #143-33-9) Sodium cyanide; (C.A.S. #7681-49-4) Sodium fluoride; (C.A.S. #1313-82-2) Sodium sulfide; (C.A.S. #637-39-8) Triethanolamine hydrochloride; (C.A.S. #116-17-6) Tri-isopropyl phosphite; (C.A.S. #2465-65-8) O,O-diethyl phosphorothioate; (C.A.S. #298-06-6) O,O-diethyl phosphorodithioate; (C.A.S. #16893-85-9) Sodium hexafluorosilicate</p> <p>- Includes mixtures where chemicals \geq 30 % of weight.</p> <p>- Mixtures containing 1C 350 chemicals that are normal ingredients of consumer goods packaged for retail sale or personal use are classified as EAR 99 only.</p> <p>- Certain medical, analytic, diagnostic, and food testing kits containing small quantities of chemicals identified in 1C 350, except those containing chemicals identified with a ¹, are controlled under 1C 395 or 1C 995. Replacement reagents for such kits are controlled by 1C 350 if the reagents contain one or more of the precursor chemicals identified in this section in concentrations equal to or greater than the control levels for mixtures.</p>

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IV. ITAR (22 CFR 121.1, Category XIV – Toxicological Agents and Equipment and Radiological Equipment)	
<p>A. ITAR License Required for exports, and, if exclusion does not apply, for deemed exports* of technology for use, production and development, to all countries/foreign nationals</p> <p>➤ Won't Get a License if ITAR – prohibited country or national is involved.</p>	<p>(a) Chemical agents to include:</p> <p>(1) Nerve agents:</p> <p>(i) <u>O-Alkyl</u> (equal to or less than C₁₀, including cycloalkyl) alkyl (Methyl, Ethyl, n-Propyl or Isopropyl)phosphonofluoridates, such as: Sarin (GB): O-Isopropyl methylphosphonofluoridate (CAS 107-44-8) (CWC Schedule 1A); and Soman (GD): O-Pinacolyl methylphosphonofluoridate (CAS 96-64-0) (CWC Schedule 1A);</p> <p>(ii) <u>O-Alkyl</u> (equal to or less than C₁₀, including cycloalkyl) N,N-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl)phosphoramidocyanidates, such as: Tabun (GA): O-Ethyl N, N-dimethylphosphoramidocyanidate (CAS 77-81-6) (CWC Schedule 1A);</p> <p>(iii) <u>O-Alkyl</u> (H or equal to or less than C₁₀, including cycloalkyl) S-2-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl)aminoethyl alkyl (Methyl, Ethyl, n-Propyl or Isopropyl)phosphonothiolates and corresponding alkylated and protonated salts, such as: VX: O-Ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate (CAS 50782-69-9) (CWC Schedule 1A);</p> <p>(2) Amiton: O,O-Diethyl S-[2(diethylamino)ethyl] phosphorothiolate and corresponding alkylated or protonated salts (CAS 78-53-5) (CWC Schedule 2A);</p> <p>(3) Vesicant agents:</p> <p>(i) <u>Sulfur mustards</u>, such as: 2-Chloroethylchloromethylsulfide (CAS 2625-76-5) (CWC Schedule 1A); Bis(2-chloroethyl)sulfide (CAS 505-60-2) (CWC Schedule 1A); Bis(2-chloroethylthio)methane (CAS 63839-13-6) (CWC Schedule 1A); 1,2-bis (2-chloroethylthio)ethane (CAS 3563-36-8) (CWC Schedule 1A); 1,3-bis (2-chloroethylthio)-n-propane (CAS 63905-10-2) (CWC Schedule 1A); 1,4-bis (2-chloroethylthio)-n-butane (CWC Schedule 1A); 1,5-bis (2-chloroethylthio)-n-pentane (CWC Schedule 1A); Bis (2-chloroethylthiomethyl)ether (CWC Schedule 1A); Bis (2-chloroethylthioethyl)ether (CAS 63918-89-8) (CWC Schedule 1A);</p> <p>(ii) <u>Lewisites</u>, such as: 2-chlorovinylchloroarsine (CAS 541-25-3) (CWC Schedule 1A); Tris (2-chlorovinyl) arsine (CAS 40334-70-1) (CWC Schedule 1A); Bis (2-chlorovinyl) chloroarsine (CAS 40334-69-8) (CWC Schedule 1A);</p> <p>Note: CAS#s do <u>not</u> cover all substances controlled and are for example and convenience only.</p>

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	<p>(iii) <u>Nitrogen mustards</u>, such as: HN1: bis (2-chloroethyl) ethylamine (CAS 538-07-8) (CWC Schedule 1A); HN2: bis (2-chloroethyl) methylamine (CAS 51-75-2) (CWC Schedule 1A); HN3: tris (2-chloroethyl)amine (CAS 555-77-1) (CWC Schedule 1A);</p> <p>(iv) <u>Ethylchloroarsine</u> (ED);</p> <p>(v) <u>Methylchloroarsine</u> (MD);</p> <p><u>(4) Incapacitating agents, such as:</u></p> <p>(i) <u>3-Quinuclidinyl benzilate</u> (BZ) (CAS 6581-06-2) (CWC Schedule 2A);</p> <p>(ii) <u>Diphenylchloroarsine</u> (DA) (CAS 712-48-1);</p> <p>(iii) <u>Diphenylcyanoarsine</u> (DC);</p> <p>(b) Biological agents and biologically derived substances specifically developed, configured, adapted, or modified for the purpose of increasing their capability to produce casualties in humans or livestock, degrade equipment or damage crops.</p> <p>(c) Chemical agent binary precursors and key precursors, as follows:</p> <p><u>(1) Alkyl</u> (Methyl, Ethyl, n-Propyl or Isopropyl) phosphonyl difluorides, such as: DF: Methyl Phosphonyldifluoride (CAS 676-99-3) (CWC Schedule 1B); Methylphosphinyldifluoride;</p> <p><u>(2) O-Alkyl</u> (H or equal to or less than C₁₀, including cycloalkyl) O-2-dialkyl (methyl, ethyl, n-Propyl or isopropyl)aminoethyl alkyl (methyl, ethyl, N-propyl or isopropyl)phosphonite and corresponding alkylated and protonated salts, such as: QL: O-Ethyl-2-di- isopropylaminoethyl methylphosphonite (CAS 57856-11-8) (CWC Schedule 1B);</p> <p><u>(3) Chlorosarin</u>: O-Isopropyl methylphosphonochloridate (CAS 1445-76-7) (CWC Schedule 1B);</p> <p><u>(4) Chlorosoman</u>: O-Pinakolyl methylphosphonochloridate (CAS 7040-57-5) (CWC Schedule 1B);</p> <p><u>(5) DC: Methylphosphonyl dichloride</u> (CAS 676-97-1) (CWC Schedule 2B); Methylphosphinyldichloride;</p>
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Export Control of Chemicals, Bio-Agents/Toxins

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	<p><u>(d) Tear gases and riot control agents including:</u></p> <ul style="list-style-type: none">(1) <u>Adamsite</u> (Diphenylamine chloroarsine or DM) (CAS 578-94-9);(2) <u>CA</u> (Bromobenzyl cyanide) (CAS 5798-79-8);(3) <u>CN</u> (Phenylacetyl chloride or w-Chloroacetophenone) (CAS 532-27-4);(4) <u>CR</u> (Dibenz-(b,f)-1,4-oxazepine) (CAS 257-07-8);(5) <u>CS</u> (o-Chlorobenzylidenemalononitrile or o-Chlorobenzalmalononitrile) (CAS 2698-41-1);(6) <u>Dibromodimethyl ether</u> (CAS 4497-29-4);(7) <u>Dichlorodimethyl ether</u> (CICl) (CAS 542-88-1);(8) <u>Ethyl dibromoarsine</u> (CAS 683-43-2);(9) <u>Bromo acetone</u>;(10) <u>Bromo methylethylketone</u>;(11) <u>Iodo acetone</u>;(12) <u>Phenylcarbylamine chloride</u>;(13) <u>Ethyl iodoacetate</u>; <p><u>(e) Defoliants, as follows:</u></p> <ul style="list-style-type: none">(1) <u>Agent Orange</u> (2,4,5-Trichlorophenoxyacetic acid mixed with 2,4-dichlorophenoxyacetic acid);(2) <u>LNF</u> (Butyl 2-chloro-4-fluorophenoxyacetate) <p><u>(f) Equipment and its components, parts, accessories, and attachments</u> specifically designed or modified for military operations and compatibility with military equipment for use with chemical and biological agents controlled in this section</p> <p><u>(g) Antibodies, polynucleoides, biopolymers or biocatalysts</u> specifically designed or modified for use with articles controlled in this category.</p> <p><u>(h) Certain medical countermeasures</u></p> <p><u>(i through l) Certain modeling or simulation tools</u>, test facilities, tooling and equipment specifically designed or modified for chemical or biological weapons design, development, employment, or destruction.</p> <p><u>(m) technical data related to the articles controlled in this category</u></p>
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Note: The CCL and USML also list and cover certain equipment used to disseminate, and/or to perform research with, listed or controlled biologicals and chemicals.

Note: The entries on this chart change frequently and should only be used as a guide to help determine export control threshold requirements. Anyone who intends to export a chemical or biological material or related equipment (abroad to anyone or in the U.S. to a foreign national) should first check for up-dates in the regulations and, if there is any question, consult with [specify central office administering export controls compliance.]

Updated as of 10.9.06. These listings are subject to change.