

**6. Chemical Precursors and Associated Equipment, Technology and Software
(Sections 742.2, 744.4 and 744.6)**

Export Control Program Description And Licensing Policy

The United States maintains export controls over certain chemicals, equipment, materials, software, technology, and whole plants to further U.S. foreign policy opposing the proliferation and use of chemical weapons.¹ The United States implements these controls in coordination with the Australia Group (AG), an informal forum of 30 nations cooperating to halt the proliferation of chemical and biological weapons. (See Appendix II for complete list of members.)

Australia Group Controls: The licensing requirements for chemicals, equipment, materials, software, technology, and whole plants imposed in accordance with the AG agreements are as follows:

A. The United States requires a license for the export to all destinations, except AG-member countries, of the precursor and intermediate chemicals used in the production of toxic chemical warfare agents; relevant process control software; technology for their use, production, and/or disposal; and the facilities designed to produce them.

The United States requires a license for the export to specified destinations of certain chemical manufacturing facilities and equipment, toxic gas monitoring systems, and detectors that can be used in the production of chemical warfare agents, as well as technology for the use of such items. The countries to which these licensing requirements apply are indicated in Column CB:3 of the Commerce Country Chart, Export Administration Regulations (EAR), Part 738, Supplement No.1, as well as the embargoed destinations identified in EAR Part 746.²

The United States also requires a license for the export of any commodity, technology, or software when the exporter knows that it will be used in the design, development, production, stockpiling, or use of chemical weapons in, or by, specified countries. (Country Group D:3, EAR, Part 740, Supplement No. 1.³) The United States may inform the exporter or reexporter that a license is required due to an unacceptable risk that the items will be used in, or diverted to, chemical weapons activities anywhere in the world.

No U.S. person may export, reexport, or transfer any item without a license, when that person knows that the item will be used in the design, development, production, stockpiling, or use of chemical weapons in, or by, a country listed in Country Group D:3. Additionally, no U.S.

person may knowingly support such an export, reexport, or transfer without a license. "Support" is defined as any action, including financing, transportation, or freight forwarding, that facilitates the export, reexport, or transfer of these items.

No U.S. person may, without a license, perform any contract, service, or employment knowing that it will directly assist in the design, development, production, stockpiling, or use of chemical weapons in, or by, a country listed in Country Group D:3.

B. The United States will consider applications for licenses on a case-by-case basis to determine whether the export would make a material contribution to the design, development, production, stockpiling, or use of chemical weapons. When Commerce determines that an export will make such a contribution, the United States will deny the export.

On May 18, 1999, Commerce published an interim rule in the *Federal Register* amending the Export Administration Regulations (EAR) to implement the export control and reporting provisions of the Chemical Weapons Convention (CWC, the Convention).⁴ The CWC bans the development, production, stockpiling, and retention of chemical weapons, and provides for an extensive verification regime. The CWC Annex on chemicals groups specified chemicals, which include both toxic chemicals and chemical precursors, into three schedules based on the level of toxicity and other properties that enable their use in chemical weapons. The toxic chemicals and precursors on Schedule 1 pose the highest risk to the purpose of the Convention and have few commercial applications, the toxic chemicals and precursors on Schedule 2 pose a significant risk to the purpose of the Convention and have certain commercial applications, and the toxic chemicals and precursors on Schedule 3 pose a risk to the purpose of the Convention and have wide commercial applications. Chemical warfare agents deemed to have direct military application are controlled by the State Department under the International Traffic in Arms Regulations.

CWC Controls: The export restrictions and licensing requirements for chemicals and technology imposed in fulfillment of CWC treaty obligations are as follows:

A. Exports of Schedule 1 chemicals are banned to countries that have not ratified the CWC (non-States Parties). A license and prior notification is required for exports of Schedule 1 chemicals to all States Parties, including Canada.

End-use certificates from the governments of importing countries are required for exports of Schedule 2 and Schedule 3 chemicals to non-States Parties. If end-user certificates are obtained, no license is required. Beginning April 29, 2000, the export to non-States Parties of Schedule 2 chemicals will be banned.

A new export classification control number (ECCN), 1C355, was created for Schedule 2 and Schedule 3 chemicals not included in ECCN 1C350. For CWC compliance purposes, Schedule 2

and Schedule 3 chemicals classified as 1C355 require licenses only if no end-use certificate is obtained.

In addition, the United States has unilaterally imposed a licensing requirement for chemical weapons reasons for the export of technology to produce four chemicals to all non-States Parties (except Israel and Taiwan).⁵ This requirement is the result of interagency discussions stemming from concerns by other agencies of the U.S. Government over the potential chemical weapons use of the four chemicals.

B. The United States generally approves applications to export Schedule 1 chemicals to States Parties and generally denies applications to export Schedule 1 chemicals to non-States Parties.

Commerce generally denies applications to export Schedule 2 and 3 chemicals controlled under ECCNs 1C350 and 1C355 to non-States Parties. The United States will deny applications to export Schedule 2 chemicals controlled under 1C350 and 1C355 to non-States Parties beginning on April 29, 2000.

The United States reviews exports and reexports of technology controlled under ECCN 1E355 on a case-by-case basis. There is a policy of denial for exports of such technology to Cuba, Iran, Iraq, Libya, Sudan, and North Korea. For Syria, the Department applies a policy of denial for military end-users and end-uses and reviews applications for civilian end-users and end-uses on a case-by-case basis.

Analysis of Control as Required by Section 6(f) of The Act

A. The Purpose of the Control

The purpose of these controls is to support the multilaterally coordinated efforts of the AG to halt the proliferation of chemical weapons and to comply with international obligations under the CWC. In addition, these controls implement certain measures specified in Executive Order No. 12735 of November 16, 1990, and its successor, Executive Order No. 12938 of November 14, 1994, and the Enhanced Proliferation Control Initiative (EPCI) announced by President Bush on December 13, 1990 (and endorsed by President Clinton). In so doing, the controls provide the United States with authority to control the export of any item from the United States when there is a significant risk that it will be used for chemical weapon purposes.

The AG works to further nonproliferation objectives through the harmonization of export controls, the exchange of information, and other diplomatic means. In addition to furthering the objectives of the AG, these controls are necessary for U.S. compliance with the CWC, which prohibits the development, production, stockpiling, retention, or transfer of chemical weapons. To ensure that States Parties do not transfer chemicals that could assist countries in acquiring chemical weapons, the Convention requires that States Parties restrict the export of the chemicals

listed in the Convention's Annex on Chemicals. The controls also support the goals of the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, which prohibits the use of chemical or biological weapons.

B. Considerations and/or Determinations of the Secretary of Commerce

1. *Probability of Achieving the Intended Foreign Policy Purpose.* Many of the items covered by these controls have commercial uses and are widely available from foreign sources. Some of the major sources of these items are in industrialized countries that are members of the AG and Parties to the CWC. While it is not expected that export controls alone can prevent the proliferation of chemical weapons, these controls strengthen U.S. efforts to stem the spread of such weapons and continue to be a significant part of the United States' overall nonproliferation strategy. Accordingly, the Secretary has determined that these controls are likely to achieve the intended foreign policy purpose.

2. *Compatibility with Foreign Policy Objectives.* In extending these controls, the Secretary has determined that the controls are compatible with the foreign policy objectives of the United States. The United States has a strong interest in remaining at the forefront of international efforts to stem the proliferation of chemical weapons. These controls are compatible with the multilateral export controls for chemicals and related equipment and technology agreed to by the AG. Moreover, the United States has a binding international commitment under the CWC to the complete prohibition and elimination of chemical weapons, and not to assist anyone, in any way, in CW activities.

3. *Reaction of Other Countries.* The Secretary has determined that the reaction of other countries to these controls by the United States is not likely to render the controls ineffective in achieving their intended foreign policy purpose or to be counterproductive to U.S. foreign policy interests. The United States continues to discuss chemical and biological export controls with countries outside of the AG to advance the goals of nonproliferation. The governments of some developing countries believe that AG export controls discriminate against less industrialized nations by depriving them of goods and assistance in the field of chemical and biological technology. The United States does not agree that the evidence supports this position. In international fora the United States has sought to dispel this perception by clarifying the purpose of the controls and demonstrating that the United States denies very few export requests. All AG members have ratified both the CWC and the Biological Weapons Convention (BWC), and support the full implementation of both treaties.

4. *Economic Impact on United States Industry.* The Secretary has determined that the potential impact of these export controls on the U.S. position is minimal. In Fiscal Year 1999, Commerce received 840 license applications, valued at \$1 billion, for the export or reexport of controlled chemical precursors and equipment. Of these, the United States approved 760 applications, denied 5 and returned without action 75. The actual trade in these controlled

commodities is significantly greater than the value of the license applications because exporters may export many of these commodities to selected countries without a license.

5. Enforcement of Control. The vast size, dispersion, diversity, and specialized nature of the dual-use chemical industry make detecting and investigating potential violations difficult for enforcement personnel. Challenges include distinguishing commercial procurement from chemical weapons-related transactions, establishing appropriate commodity thresholds for targeting and tracking exports and re-exports for verification of end-use and end-users. In addition, enforcement officers may be exposed to personal safety risks when seizing and inspecting chemical materials.

To meet the challenge of effective enforcement of these controls, Commerce has directed resources toward preventive enforcement. (This is in addition to continued efforts to aggressively pursue all leads provided by intelligence, industry, and other sources on activity of concern.) Analysis of Shipper's Export Declarations helps ensure that the shipments labeled "No License Required" (NLR) do not in fact require licenses. Also, Commerce uses its extensive outreach program to educate companies about export controls related to chemical products to help prevent the illegal export of dual-use products that can be used to make chemical weapons.

Finally, the United States is preparing for new enforcement responsibilities as required by the implementation of the Chemical Weapons Convention by enhancing agent training.

C. Consultation with Industry

On November 30, 1999, the Department of Commerce, via the *Federal Register*, solicited comments from industry on the effectiveness of export policy. A detailed review of the comments is available in Appendix I.

The Department maintains ongoing interaction with the chemical industry on several levels: as individual companies seek export licenses, through the Commerce-chartered Technical Advisory Committees (TACs), and through trade associations. Commerce consults regularly with exporting firms on proposed export transactions and marketing plans to facilitate thorough, yet prompt, review of export license applications. Through the TACs, Commerce keeps industry representatives abreast of proposals for review of items on the control list and gives them the opportunity to provide technical input.

Commerce is working with chemical industry associations, including the Chemical Manufacturers Association and the Synthetic Organic Chemical Manufacturers Association, and with other government agencies, such as the Federal Bureau of Investigation and the Department of Defense's Defense Threat Reduction Agency, to gain valuable input regarding Chemical Weapons Convention (CWC) implementation and meet its CWC responsibilities. (See CWC under Section E, "Alternative Means.")

D. Consultation with Other Countries

These U.S. controls are consistent with the multilateral export control criteria of the 30 member-nation AG, which includes many of the world's major chemical producers and traders. In addition, a number of non-AG countries -- including Bulgaria, Russia, and Ukraine -- have taken steps to adopt AG-type controls. An important element of the AG's efforts to curb the proliferation of chemical weapons is contacting non-members to encourage them to observe like-minded export controls. The United States continues to encourage harmonization of export control provisions among AG participants to ensure a level playing field for U.S. exporters.

E. Alternative Means

The United States continues to address the problem of the proliferation of chemical weapons on a number of fronts. Direct negotiations with countries intent on acquiring chemical weapons are not likely to prevent the use of U.S.-origin materials in such activities, nor are such negotiations likely to affect the behavior of these countries.

Alternative means to curtail the acquisition and development of chemical warfare capabilities, such as diplomatic negotiations, do not obviate the need for controls. Examples of additional means that the United States has used and will continue to use in an attempt to curb the use and spread of chemical weapons include:

- o U.S. legislation: The Chemical and Biological Weapons Control and Warfare Elimination Act of 1991 (Title III, Pub. L. 102-182) provides for the imposition of sanctions on foreign entities and countries for certain kinds of chemical and biological weapons-related activity. The United States has imposed sanctions on certain entities for chemical weapons-related activities;
- o The Chemical Weapons Convention: As another tool for stemming the proliferation of chemical weapons, the Convention imposes a global ban on the development, production, stockpiling, retention, and use of chemical weapons (CW). The Convention also prohibits the direct or indirect transfers of CW, as well as restricting trade in certain chemicals to non-States Parties, and creates an international organization to monitor the destruction of CW and the production of toxic chemicals for industrial, agricultural, medical and other peaceful purposes in countries party to the Convention.

Pursuant to passage of the CWC Implementation Act (CWCIA) on October 21, 1998, the Department expects to be responsible for industry compliance with the Convention. In addition to the final rule implementing the CWC revisions to the EAR, published in the *Federal Register* on August 7, 1999, Commerce has recently promulgated the Chemical Weapons Convention Regulations (CWCR) addressing data declaration and inspection requirements. Under the CWCR, Commerce will collect industry reports regarding production, processing, consumption, import, and export of toxic chemicals for purposes not prohibited by the Convention (e.g.,

industrial, agricultural, and other peaceful purposes) and will forward required information to the Organization for the Prohibition of Chemical Weapons (OPCW). Commerce will also escort inspections by the OPCW of certain U.S. chemical production facilities.

F. Foreign Availability

Past reviews conducted by the Department of Commerce reveal that a wide range of AG chemical precursors and production equipment was available from non-AG countries. Non-AG suppliers of precursors and/or related production equipment include Brazil, Chile, Colombia, India, Mexico, China (PRC), South Africa, the countries of the former Soviet Union, Taiwan, Thailand, and Turkey. However, most of these countries have acceded to the CWC and will take steps under this treaty to prevent CW proliferation.

ENDNOTES

1. *Anti-terrorism controls also apply to exports of these items to countries designated as state sponsors of terrorism by the Secretary of State.*
2. *As of the date of submission of this report, the countries in the Commerce Country Chart CB column 3 included Afghanistan, Armenia, Azerbaijan, Bahrain, Belarus, Bulgaria, Burma, China (PRC), Egypt, Georgia, India, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Moldova, Mongolia, Oman, Pakistan, Qatar, Russia, St. Kitts & Nevis, Saudi Arabia, Syria, Taiwan, Tajikistan, Turkmenistan, Ukraine, United Arab Emirates, Uzbekistan, Vietnam, and Yemen.*
3. *As of the date of submission of this report, the countries in Country Group D:3 included Afghanistan, Armenia, Azerbaijan, Bahrain, Belarus, Bulgaria, Burma, China (PRC), Cuba, Egypt, Georgia, India, Iran, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Libya, Moldova, Mongolia, North Korea, Oman, Pakistan, Qatar, Russia, Saudi Arabia, Syria, Taiwan, Tajikistan, Turkmenistan, Ukraine, United Arab Emirates, Uzbekistan, Vietnam, and Yemen.*
4. *The Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on their Destruction (the "Chemical Weapons Convention" or CWC) was ratified by the United States on April 25, 1997, and entered into force on April 29, 1997. As of December 8, 1999, 128 nations were States Parties to the treaty.*
5. *A license also is required to export this technology to Iran, Sudan, and Syria for anti-terrorism (AT) reasons (see Chapter 4 of this report). In addition, this technology was already controlled and subject to denial under existing U.S. regulations for Cuba, Iran, Iraq, Libya, Sudan, and North Korea.*

