License Requirements Note: * * *

License Exceptions

List of Items Controlled

Unit: $ value

Control(s) Country chart

NP applies to "technology" for items controlled by 1A002, 1A007, 1B001, 1B101, 1B201, 1B225 to 1B233, 1C002, 1C010, 1C111, 1C116, 1C202, 1C210, 1C216, 1C225 to 1C237, 1C239, or 1C240 for NP reasons.

Related Definitions: * * *

Items: * * *

13. In Supplement No. 1 to part 774 (the Commerce Control List), Category I—Special Materials and Related Equipment, Chemicals, “Microorganisms,” and “Toxins,” ECCN 1E101 is amended by revising the ECCN heading and by revising the License Requirements section to read as follows:

1E101 “Technology”, in accordance with the General Technology Note, for the “use” of commodities and software controlled by 1A101, 1A102, 1B001, 1B101, 1B102, 1B115 to 1B119, 1C001, 1C007, 1C011, 1C101, 1C107, 1C111, 1C116, 1C117, 1C118, 1D001, 1D101, or 1D103.

License Requirements

Reason for Control: MT, NP, AT

Control(s) Country chart

MT applies to entire entry.
NP applies to “technology” for items controlled by 1B001, 1B101, 1C111, 1C116, 1D001, or 1D101 for NP reasons.
AT applies to entire entry.

14. In Supplement No. 1 to part 774 (the Commerce Control List), Category I—Special Materials and Related Equipment, Chemicals, “Microorganisms,” and “Toxins,” ECCN 1E201 is amended by revising the ECCN heading to read as follows:

1E201 “Technology” according to the General Technology Note for the “use” of items controlled by 1A002, 1A007, 1A202, 1A225 to 1A227, 1B201, 1B225 to 1B232, 1B233.b, 1C002.b.3 and b.4, 1C010.a, 1C010.b, 1C010.e.1, 1C202, 1C210, 1C216, 1C225 to 1C237, 1C239, 1C240 or 1D201.

15. In Supplement No. 1 to part 774 (the Commerce Control List), Category I—Special Materials and Related Equipment, Chemicals, “Microorganisms,” and “Toxins,” add a new ECCN 1E608 between ECCNs 1E201 and 1E355 and 1E994 to read as follows:

1E608 “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul or refurbishing of equipment controlled in 1B608 or materials controlled by 1C608.

Related Definitions: CIV: N/A

Related Controls: (1) Technical data directly related to articles enumerated in USML Categories III, IV, or V are subject to the controls of those USML Categories, respectively. (2) “Technology” for chlorine trifluoride is controlled under ECCNs 1E001 (“development” and “production”) and 1E101 (“use”).

Related Definitions: N/A

Items:

a. “Technology” “required” for the “development”, “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 1B608 or 1C608.

b. “Technology” for the “development” or “production” of nitrocellulose with nitrogen content over 12.6% and at rates greater than 2000 pounds per hour.

c. “Technology” for the “development” or “production” of nitrate esters (e.g., nitroglycerine) at rates greater than 2000 pounds per hour.

d. through x. [RESERVED]

y. Specific “technology” “required” for the “development,” “production,” “operation,” installation, maintenance, repair, overhaul or refurbishing of commodities controlled by ECCN 1B608 or “software” controlled by ECCN 1D608, as follows:
y.1 through y.98. [RESERVED]
y.99. “Technology” not identified on the CCL that (i) has been determined, in an applicable commodity jurisdiction determination issued by the U.S. Department of State, to be subject to the EAR and (ii) would otherwise be controlled elsewhere in ECCN 1E608.

Kevin J. Wolf,
Assistant Secretary for Export Administration.

DEPARTMENT OF STATE
22 CFR Part 121
RIN 1400—AD02
[Public Notice 7861]
Amendment to the International Traffic in Arms Regulations: Revision of U.S. Munitions List Category V.

AGENCY: Department of State.

ACTION: Proposed rule.

SUMMARY: As part of the President’s Export Control Reform effort, the Department of State proposes to amend the International Traffic in Arms Regulations (ITAR) to revise Category V (explosives and energetic materials, propellants, incendiary agents, and their constituents) of the U.S. Munitions List (USML) to describe more precisely the articles warranting control on the USML.
DATES: The Department of State will accept comments on this proposed rule until June 18, 2012.

ADDRESSES: Interested parties may submit comments within 45 days of the date of publication by one of the following methods:

• Email: DDTCTResponseTeam@state.gov with the subject line, “ITAR Amendment—Category V.”
• Internet: At www.regulations.gov, search for this notice by using this rule’s RIN (1400–AD02).

Comments received after that date will be considered if feasible, but consideration cannot be assured. Those submitting comments should not include any personally identifying information they do not desire to be made public or information for which a claim of confidentiality is asserted because those comments and/or transmittal emails will be made available for public inspection and copying after the close of the comment period via the Directorate of Defense Trade Controls Web site at www.pmddtc.state.gov. Parties who wish to comment anonymously may do so by submitting their comments via www.regulations.gov, leaving the fields that would identify the commenter blank and including no identifying information in the comment itself. Comments submitted via www.regulations.gov are immediately available for public inspection.

FOR FURTHER INFORMATION CONTACT: Ms. Candace M. J. Goforth, Acting Director, Office of Defense Trade Controls Policy, Department of State, telephone (202) 663–2792; email DDTCTResponseTeam@state.gov. ATTN: Regulatory Change, USML Category V.

SUPPLEMENTARY INFORMATION: The Directorate of Defense Trade Controls (DDTC), U.S. Department of State, administers the International Traffic in Arms Regulations (ITAR) (22 CFR parts 120–130). The items subject to the jurisdiction of the ITAR, i.e., “defense articles,” are identified on the ITAR’s U.S. Munitions List (USML) (22 CFR 121.1). With few exceptions, items not subject to the export control jurisdiction of the ITAR are subject to the jurisdiction of the Export Administration Regulations (“EAR.”) 15 CFR parts 730–774, which includes the Commerce Control List in Supplement No. 1 to Part 774, administered by the Bureau of Industry and Security (BIS), U.S. Department of Commerce. Both the ITAR and the EAR impose license requirements on exports and reexports. Items not subject to the ITAR or to the exclusive licensing jurisdiction of any other set of regulations are subject to the EAR.

Export Control Reform Update

The Departments of State and Commerce described in their respective Advanced Notices of Proposed Rulemaking (ANPRM) in December 2010 the Administration’s plan to make the USML and the CCL positive, tiered, and aligned so that eventually they can be combined into a single control list (see “Commerce Control List: Revising Descriptions of Items and Foreign Availability.” 75 FR 76664 (December 9, 2010) and “Revision to the United States Munitions List,” 75 FR 76935 (December 10, 2010). The notices also called for the establishment of a “bright line” between the USML and the CCL to reduce government and industry uncertainty regarding export jurisdiction by clarifying whether particular items are subject to the jurisdiction of the ITAR or the EAR.

While the Administration’s ultimate Export Control Reform objectives, their concurrent implementation would be problematic in the near term. In order to more quickly reach the national security objectives of greater interoperability with U.S. allies, enhancing the defense industrial base, and permitting the U.S. Government to focus its resources on controlling and monitoring the export and reexport of more significant items to destinations, end-uses, and end-users of greater concern than NATO allies and other multi-regime partners, the Administration has decided, as an interim step, to propose and implement revisions to both the USML and the CCL that are more positive, but not yet tiered.

Specifically, in based on a review of the comments received in response to the December 2010 notices, the Administration has determined that fundamentally altering the structure of the USML by tiering and aligning it on a category-by-category basis would significantly disrupt the export control compliance systems and procedures of exporters and reexporters. For example, until the entire USML was revised and became final, some USML categories would follow the legacy numbering and control structures while the newly revised categories would follow a completely different numbering structure. In order to allow for the national security benefits to flow from these changes, the Administration is proposing a transition process with build down periods during which the Administration’s current screening and control systems will continue to operate.

Revision of Category V

This proposed rule revises USML Category V, covering explosives and energetic materials, propellants, incendiary agents, and their constituents, to establish a clear “bright line” between the USML and the CCL for the control of these materials.

One major change proposed to this category involves removal of broad catchalls with the listing of specific materials that warrant ITAR control caught by current catchalls. For example, paragraph (a)(35) as currently written broadly controls, “Any other explosive not elsewhere identified in this category specifically designed, modified, adapted, or configured (e.g., formulated) for military application.” This catchall is being removed. Examples of materials added because of deletion of catchalls are as follows: tetryazines (BTAT (Bis(2,2,2-trinitroethyl)-3,6-diaminotetrazene); LAX–112 (3,6-diamino-1,2,4,5-tetrazine-1,4-dioxide); PNO (Poly(3-nitro oxetane)); 4,5 diazidomethyl-1,2,3-triazole (iso- DAMTR)); TEPB (Tris(ethoxyphenyl) bismuth) (CAS 90591–48–3); and TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4,10-diazaisowurtzitane). Those materials currently captured in the catchalls that do not warrant control on the USML are to be controlled on the CCL. Examples of such materials to be removed from various catchalls and controlled on the CCL are spherical aluminum powder and hydrazine and its derivatives.

Another major change proposed to this category involves addressing U.S. obligations to multinational regimes. There is a limited catchall (a)(32) that is being changed from 8700 meters per second to 8000 meters per second to match the criteria from the Nuclear Suppliers Group. The proposed revision would read as follows (see paragraph (a)(38)): “Explosives, not otherwise enumerated in this paragraph or on the CCL in ECCN 1C608, with a detonation velocity exceeding 8,000m/s at maximum density or a detonation pressure exceeding 34 Gpa (340 kbar).” Additional hydrazine materials are specified by the Missile Technology Control Regime (MTCR) and these entries were added.

Additionally, some materials are to be added that are significant to the military but have little commercial application. For example, Dinitrotetrazine (Dinitrotriazine), a military explosive currently covered by the catchall in
(a)(35), will be controlled in paragraph (a)(11).

Request for Comments

As the U.S. Government works through the proposed revisions to the USML, some solutions have been adopted that were determined to be the best of available options. With the thought that multiple perspectives would be beneficial to the USML revision process, the Department welcomes the assistance of users of the lists and requests input on the following:

1. A key goal of this rulemaking is to ensure the USML and the CCL together control all the items that meet Wassenaar Arrangement commitments embodied in Munitions List Category 8 (WA–ML8). To that end, the public is asked to identify any potential lack of coverage brought about by the proposed rules for Category V contained in this notice and the new Category 1 ECCNs published separately by the Department of Commerce when reviewed together.

2. The key goal of this rulemaking is to establish a “bright line” between the USML and the CCL for the control of these materials. The public is asked to provide specific examples of explosives and energetic materials whose jurisdiction would be in doubt based on this revision.

Regulatory Analysis and Notices

Administrative Procedure Act

The Department of State is of the opinion that controlling the import and export of defense articles and services is a foreign affairs function of the United States Government and that rules implementing this function are exempt from §553 (Rulemaking) and §554 (Adjudications) of the Administrative Procedure Act. Although the Department is of the opinion that this rule is exempt from the rulemaking provisions of the APA, the Department is publishing this rule with a 45-day provision for public comment and without prejudice to its determination that controlling the import and export of defense services is a foreign affairs function. As noted above, and also without prejudice to the Department position that this rulemaking is not subject to the APA, the Department previously published a related Advance Notice of Proposed Rulemaking (RIN 1400–AC78), and accepted comments for 60 days.

Regulatory Flexibility Act

Since the Department is of the opinion that this rule is exempt from the rulemaking provisions of 5 U.S.C. 553, it does not require analysis under the Regulatory Flexibility Act.

Unfunded Mandates Reform Act of 1995

This proposed amendment does not involve a mandate that will result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any year and it will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

Small Business Regulatory Enforcement Fairness Act of 1996

This proposed amendment has been found not to be a major rule within the meaning of the Small Business Regulatory Enforcement Fairness Act of 1996.

Executive Orders 12372 and 13132

This proposed amendment will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 13132, it is determined that this proposed amendment does not have sufficient federalism implications to require consultations or warrant the preparation of a federalism summary impact statement. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this proposed amendment.

Executive Order 12866

The Department is of the opinion that controlling the import and export of defense articles and services is a foreign affairs function of the United States Government and that rules governing the conduct of this function are exempt from the requirements of Executive Order 12866. However, the Department has reviewed the proposed rule to ensure its consistency with the regulatory philosophy and principles set forth in the Executive Order.

Executive Order 13563

The Department of State has considered this rule in light of Executive Order 13563, dated January 18, 2011, and affirms that this regulation is consistent with the guidance therein.

Executive Order 12998

The Department of State has reviewed the proposed amendment in light of sections 3(a) and 3(b)(2) of Executive Order 12998 to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burden.

Executive Order 13175

The Department of State has determined that this rulemaking will not have tribal implications, will not impose substantial direct compliance costs on Indian tribal governments, and will not preempt tribal law. Accordingly, Executive Order 13175 does not apply to this rulemaking.

Paperwork Reduction Act

This proposed amendment does not impose any new reporting or recordkeeping requirements subject to the Paperwork Reduction Act, 44 U.S.C. Chapter 35.

List of Subjects in 22 CFR Part 121

Arms and munitions, Exports.

Accordingly, for the reasons set forth above, Title 22, Chapter I, Subchapter M, part 121 is proposed to be amended as follows:

PART 121—THE UNITED STATES MUNITIONS LIST

1. The authority citation for part 121 continues to read as follows:


2. Section 121.1 is amended by revising U.S. Munitions List Category V to read as follows:

§121.1 General. The United States Munitions List.

* * * * *

Category V—Explosives and Energetic Materials, Propellants, Incendiary Agents, and Their Constituents

*(a) Explosives, and mixtures thereof, as follows:

(1) ADNBF (aminodinitrobenzofuroxan or 7-Amino 4,6-dinitrobenzofurazane-1-oxide) (CAS 97096–78–1);
(2) BNCP (cis-bis(5-nitrotetrazolato) tetra amine-cobalt (III) perchlorate) (CAS 117421–28–9);
(3) CL–14 (diaminodinitrobenzofuroxan or 5,7-diamino-4,6-dinitrobenzofurazane-1-oxide) (CAS 117907–74–1);
(4) CL–20 (HNIW or Hexanitrohexaazaisowurtzitane) (CAS 135328–90–4); clathrates of CL–20;
(5) CP (2-(5-cyanotetrazolato) penta aminecobalt (III) perchlorate) (CAS 70247–32–4);
(6) DADE (1,1-diamino-2,2-dinitroethylen, FOX-7);
(7) DATB (Diaminotritirotbenzene) (CAS 1630–08–6);
(8) DDFF (1,4-dinitrofurazanopiperazine);
(9) DDPO (2,6-diamino-3-dinitropyrazine-1-oxide, PZO) (CAS 194486–77–6);
(10) DIPAM (3,3′-Diamo-2,2′,4,4′,6,6′-hexanitrophenyl or dipicramide) (CAS 17024–44–0);
(11) DNAN (2,4-Dinitroanisole) (CAS 119–27–7);
(12) DNNU (DINGU or dinitrotryazole) (CAS 55510–04–8);
(13) Furazans, as follows:
  (i) DAAOF (DAAF, DAAFox, or dinaaminooxyfurazan);
  (ii) DAAzF (dinaaminoazofurazan);
  (iii) DAAzF (dinaaminoazofurazan, 4-
        [2-(4-nitro-1,2,5-oxadiazol-3-yl) diazenyl]; or
  (iv) 1,2,5-Oxadiazol-3-amine, 4-
       [2-(4-nitro-1,2,5-oxadiazol-3-yl) azo]-
       (9CI); or
  (v) DAAzF (dinaaminoazofurazan or
       4-
       [2-(4-nitro-1,2,5-oxadiazol-3-yl) azo]-
       (9CI); or
  119–27–7);
(14) GUDN (Guanylurea dinitramide)
FOX-12 (CAS 217464–38–5);
(15) HMX and derivatives, as follows:
  (i) HMX
(Cyclohexyltritramethylenetetranitramine; octahydro-1,3,5,7-tetrazino-1,3,5,7-tetrazine; 1,3,5,7-tetrazino-1,3,5,7,9-
  tetrazoloctocyclane; octogen, octogone) (CAS 2691–41–0);
  (ii) Difluoroaminites analogs of HMX;
  (iii) K–55 (2,4,6,8-tetranitro-2,4,6,8-
       tetraazacyclo[3,3,0]octahexene, hexogen, or hexogene) (CAS 130400–72–3);
  (iv) Mixed fuels that incorporate both
       solid and liquid fuels, such as boron
       slurry, having a mass-based energy density of
       40 MJ/kg or greater; or
      (ii) Other high energy density fuels
       and fuel additives (e.g., cubic, ionic solutions, JP–7, JP–10) having a volume-
       based energy density of 37.5 GJ per
       cubic meter or greater, measured at 20
       °C and one atmosphere (101.325 kPa)
       pressure;
(b) Propellants, as follows:
(1) Any solid propellant with a theoretical specific impulse (see paragraph (k)(4) of this category) greater than:
  (i) 240 seconds for non-metallized, non-halogenated propellant;
  (ii) 220 seconds for non-metallized, halogenated propellant;
   or
  (iii) 220 seconds for metallized propellant;
(2) Propellants having a force constant of more than 1,200 Kf/Kg;
(3) Propellants that can sustain a steady-state burning rate more than 38mm/s under standard conditions (as measured in the form of an inhibited single strand) of 6.89 Mpa (68.9 bar)
   pressure and 294K (21 °C);
(4) Elastomer-modified cast double-based propellants with extensibility at maximum stress greater than 5% at 233
   K (–40 °C).
(c) Pyrotechnics, fuels and related substances, and mixtures thereof, as follows:
(1) Alane (aluminum hydride) (CAS
7784–21–6);
(2) Carbones; decaborane (CAS
17702–41–9); pentaborane and derivatives;
(3) Liquid high energy density fuels, as follows:
  (i) Mixed fuels that incorporate both
       solid and liquid fuels, such as boron
       slurry, having a mass-based energy density of
       40 MJ/kg or greater; or
      (ii) Other high energy density fuels
       and fuel additives (e.g., cubic, ionic solutions, JP–7, JP–10) having a volume-
       based energy density of 37.5 GJ per
       cubic meter or greater, measured at 20
       °C and one atmosphere (101.325 kPa)
       pressure;
Note to paragraph (c)(3)(ii): JP–4, JP–8;
  (a) Explosives, not otherwise
      enumerated in this paragraph or on the
      CCL in ECCN 1C608, with a detonation velocity exceeding 8,000 m/s
      at maximum density or a detonation pressure exceeding 34 GPa (340 kbar).
* (b) Propellants, as follows:
(1) Any solid propellant with a theoretical specific impulse (see paragraph (k)(4) of this category) greater than:
  (i) 240 seconds for non-metallized, non-halogenated propellant;
  (ii) 220 seconds for non-metallized, halogenated propellant;
   or
  (iii) 220 seconds for metallized propellant;
(2) Propellants having a force constant of more than 1,200 Kf/Kg;
(3) Propellants that can sustain a steady-state burning rate more than 38mm/s under standard conditions (as measured in the form of an inhibited single strand) of 6.89 Mpa (68.9 bar)
   pressure and 294K (21 °C);
(4) Elastomer-modified cast double-based propellants with extensibility at maximum stress greater than 5% at 233
   K (–40 °C).
(c) Pyrotechnics, fuels and related substances, and mixtures thereof, as follows:
(1) Alane (aluminum hydride) (CAS
7784–21–6);
(2) Carbones; decaborane (CAS
17702–41–9); pentaborane and derivatives;
(3) Liquid high energy density fuels, as follows:
  (i) Mixed fuels that incorporate both
       solid and liquid fuels, such as boron
       slurry, having a mass-based energy density of
       40 MJ/kg or greater; or
      (ii) Other high energy density fuels
       and fuel additives (e.g., cubic, ionic solutions, JP–7, JP–10) having a volume-
       based energy density of 37.5 GJ per
       cubic meter or greater, measured at 20
       °C and one atmosphere (101.325 kPa)
       pressure;
Note to paragraph (c)(3)(ii): JP–4, JP–8; fossil refined fuels or biofuels, or fuels for engines certificated for use in civil aviation are not included.
(4) Metal fuels, and fuel or pyrotechnic mixtures in particle form whether spherical, atomized, spheroidal, flaked, or ground,
manufactured from material consisting of 99% or more of any of the following:

(i) Metals, and mixtures thereof, as follows:
   - Beryllium (CAS 7440–41–7) in particle sizes of less than 60 micrometers; or
   - Iron powder (CAS 7439–89–6) with particle size of 3 micrometers or less produced by reduction of iron oxide with hydrogen;
   - Fuel mixtures or pyrotechnic mixtures, which contain any of the following:
     - Beryllium (CAS 7440–41–7) in particle sizes of less than 60 micrometers; or
     - Iron powder (CAS 7439–89–6) with particle size of 3 micrometers or less produced by reduction of iron oxide with hydrogen;

(ii) Explosives and fuels containing the metals or alloys listed in paragraphs (c)(4)(i) and (c)(4)(ii) of this category whether or not the metals or alloys are encapsulated in aluminum, magnesium, zirconium, or beryllium;

(f) Additives, as follows:
   - Basic copper salicylate (CAS 62320–94–9);
   - BHGEA (Bi–2-hydroxyethylglycolamide) (CAS 17409–41–5);
   - Ferric carboxylic acids and ferrocene carboxylic acid esters;
   - n-butylferrocene (CAS 31904–29–7);
   - Ethylferrocene (CAS 1273–69–8);
   - Propylferrocene;
   - Pentylferrocene (CAS 1274–00–6);
   - Dicyclopentylferrocene;
   - Dicyclopentylferrocene;
   - Diethylferrocene (CAS 1274–97–8);
   - Dibutylferrocene (CAS 1274–08–4);
   - Dihexyferrocene (CAS 93894–59–8);
   - Acetylferrocene (CAS 1271–55–2)/1,1′-diacetyl ferrocene (CAS 1273–94–5); or
   - Other ferrocene derivatives that do not contain a six carbon aromatic functional group attached to the ferrocene molecule;

(f) Additives, as follows:
   - Lead beta-resorcylate (CAS 20036–32–7);
   - Lead citrate (CAS 14450–60–3);
   - Lead-copper chelates of beta-resorcylate or salicylates (CAS 68411–07–4);
   - Lead maleate (CAS 19136–34–6);
   - Lead salicylate (CAS 15748–73–9); or
   - Lead stannate (CAS 12036–31–6);

(i) Neopentyl[diallyl]oxy, tri[dioctyl]phosphatotitanate (CAS 103850–22–2);
also known as titanium IV, 2,2[bis-2-propanolato-methyl, butanolato, tris (diocyl) phosphato] (CAS 110438–25–0), or LICA 12 (CAS 103850–22–2); 
(ii) Titanium IV, [(2-propanolato-1)methyl, n-propanolatomethyl] butanolato-1, tris(diocyl)pyrophosphate, or KR3538; or 
(iii) Titanium IV, [(2-propanolato-1)methyl, propanolatomethyl] butanolato-1, tris(diocyl) phosphate; 
(15) PCDE (Polycyanodifluoroaminoethylene oxide);
(16) Certain bonding agents, as follows: 
(i) 1,1R,1S-trimesoyl-tris(2-ethylaziridine) (HX–868, BITA) (CAS 7722–73–8); or 
(ii) Polyfunctional aziridine amides with isophthalic, trimesic, isocyanuric, 
or trimethyleneipadic backbone also having a 2-methyl or 2-ethyl aziridine group; 
Note to paragraph (f)(16)(ii): Included are 1) 1,1H-Isophthaloyl-bis(2-ethylaziridine) (HX–752) (CAS 7652–64–4); 2) 2,4,6-tris(2-ethyl-1-aziridinyl)-1,3,5-triazine (HX–874) (CAS 18924–91–9); and 3) 1,1H-trimethyleneimido-bis(2-ethylaziridine) (HX–877) (CAS 71463–62–2).
(17) Superfine iron oxide (Fe2O3, hematite) with a specific surface area more than 250 m2/g and an average particle size of 0.003 micrometers or less (CAS 1309–37–1); 
(18) TEPAN (HX–879) (tetraethylenepentamineacrylonitrile) (CAS 68412–45–3); cyanoethylated polyamines and their salts; 
(19) TEPANOL (HX–878) (tetraethylenepentamineacrylonitrileglycidol) (CAS 110445–33–5); cyanoethylated polyamines adducted with glycidol and their salts; 
(20) TBP (triphenyl bismuth) (CAS 603–33–8); or 
(21) Tris (ethoxyphenyl) bismuth (TEPB) (CAS 90591–48–3).
(g) Precursors, as follows: (1) BCMO (bischloromethyloxetane) (CAS 142173–26–9);
(2) DADN (1,5-diacyl-3,7-dinitro-1, 3, 5, 7-tetraazacyclocotane); 
(3) Dinitroazetidine-t-butyl salt (CAS 125735–38–8); 
(4) CL–20 precursors (any molecule containing hexaazaosowurtizane) (e.g., HBIW (hexabenzyhexaazaosowurtizane), TAIW (tetraacetyldibenzylhexaazaosowurtizane)); 
(5) TAT (1, 3, 5, 7-tetraacetyl-1, 3, 5, 7-tetraazacyclocotane) (CAS 41378–98–7); 
(6) Tetrazadecalin (CAS 5409–42–7); 
(7) 1,3,5-trichlorobenzene (CAS 108–70–3); or 
(8) 1,2,4-trihydroxybutane (1,2,4-butanoltriol) (CAS 3068–00–6).
(b) Any explosive, propellant, pyrotechnic, fuel, oxidizer, binder, additive, or precursor that: 
(1) is classified; 
(2) is manufactured using classified production data; or 
(3) is being developed using classified information.
“Classified” means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government.
(i) Developmental explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors therefor developed under a contract with the U.S. Government not otherwise controlled under this category. 
(j) Technical data (as defined in § 120.10 of this subchapter) and defense services (as defined in § 120.9 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (i) of this category (see also § 123.20 of this subchapter). 
(k) The following interpretations explain and amplify the terms used in this category and elsewhere in this subchapter:
(1) Category V contains explosives, energetic materials, propellants, and pyrotechnics and specially formulated fuels for aircraft, missile, and naval applications. Explosives are solid, liquid, or gaseous substances or mixtures of substances, which, in their primary, booster, or main charges in warheads, demolition, or other military applications, are required to detonate.
(2) The resulting product of the combination or conversion of any substance controlled by this category into an item not controlled will no longer be controlled by this category provided the controlled item cannot easily be recovered through dissolution, melting, sieving, etc. As an example, beryllium converted to a near net shape using hot isostatic processes will result in an uncontrolled part. A cured thermoset containing beryllium powder is not controlled unless meeting an explosive or propellant control. The mixture of beryllium powder in a cured thermoset shape is not controlled by this category. The mixture of controlled beryllium powder mixed with a typical propellant binder will remain controlled by this category. The addition of dry silica powder to dry beryllium powder will remain controlled.
(3) Paragraph (c)(4)(ii) of this category does not control boron and boron carbide enriched with boron-10 (20% or more of total boron-10 content).
(4) Theoretical specific impulse (Isp) is calculated using standard conditions (1000 psi chamber pressure expanded to 14.7 psi) and measured in units of pound-force-seconds per pound-mass (lbf-s/lbm) or simplified to seconds (s). Calculations will be based on shifting equilibrium.
(5) Particle size is the mean particle diameter on a weight basis. Best industrial practices will be used in determining particle size and the controls may not be undermined by addition of larger or smaller sized material to shift the mean diameter.

Note 1: To assist the exporter, an item has been categorized by the most common use. Also, where appropriate, references have been provided to the related controlled precursors.

Note 2: Chemical Abstract Service (CAS) registry numbers do not cover all the substances and mixtures controlled by this category. The numbers are provided as examples to assist government agencies in the license review process and exporters when completing their license application and export documentation.