DoD Manual 4160.28, Volume 2

Defense Demilitarization: Demilitarization Coding

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Purpose: This manual is composed of several volumes, each containing its own purpose. In accordance with the authority in DoD Directive (DoDD) 5134.01 and DoDD 5134.12 and the policy in DoD Instruction (DoDI) 4160.28:

- This manual implements policy, assigns responsibilities, and provides procedures for assessing demilitarization (DEMIL) requirements and performing physical DEMIL of DoD personal property.
- This volume assigns responsibilities and prescribes procedures for assigning DEMIL codes for controlling DoD personal property within DoD.

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SECTION 1: GENERAL ISSUANCE INFORMATION

1.1. APPLICABILITY.

This volume:

a. Applies to OSD, the Military Departments (including the Coast Guard at all times, including when it is a Service in the Department of Homeland Security by agreement with that Department), the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this issuance as the "DoD Components").

b. Does not apply to nuclear material controlled by the Defense Threat Reduction Agency, technical data controlled under DoDI 5230.24 or DoD Manual (DoDM) 5200.01 (except when included on an item of supply such as labels), or software.

c. Does not provide determinations, authority, or procedures for the export of items controlled by the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR). References to the ITAR and the EAR are provided for guidance on descriptions of materiel that could be a risk, if released from DoD control.

1.2. SUMMARY OF CHANGE 3.

Change 3:

a. Clarifies that the issuance does not provide export determinations, authority, or procedures under ITAR or EAR.

b. Clarifies that the ITAR and EAR are used as guidance in DEMIL code assignment.

c. Revises DEMIL coding tables to synchronize with changes to the ITAR and EAR.

d. Identifies risks to public safety and public confidence as factors to consider in DEMIL code assignment.

e. Revises and expands requirements for DEMIL of armor.

f. Inserts an explicit option for assignment of DEMIL code "G" for thermal batteries.

g. Updates office symbols.

SECTION 2: RESPONSIBILITIES

2.1. ASSISTANT SECRETARY OF DEFENSE FOR SUSTAINMENT (ASD(S)). Under the authority, direction, and control of the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)), and consistent with DoDD 5134.12, the ASD(S) implements the DoD DEMIL program.

2.2. DIRECTOR, DEFENSE LOGISTICS AGENCY (DLA). Under the authority, direction, and control of the USD(A&S), through the ASD(S), and in addition to the responsibilities in Paragraph 2.3, the Director, DLA:

a. Provides guidelines for the identification and DEMIL of DoD personal property to prevent its unauthorized use and the potential compromise of U.S. national security.

b. Evaluates program deficiencies and advances in technology in coordination with the Defense Technology Security Administration and recommends changes to lists of defense articles requiring DEMIL and other controls.

c. Establishes DEMIL instructions in a readily available location for every DLA-managed item with a national item identification number that requires such instructions.

2.3. DOD COMPONENT HEADS. The DoD Component heads:

a. Use the procedures in this volume to determine DEMIL codes.

b. Ensure that this volume is implemented across their respective Components in a uniform, consistent manner.

c. Use DEMIL codes throughout the life-cycle, to identify control requirements before releasing DoD personal property from DoD.

d. Use DEMIL codes to identify DEMIL actions to eliminate the functional capabilities and inherent military design features from DoD personal property.

e. Complete all required DEMIL actions, prior to releasing DoD personal property from DoD control.

2.4. SECRETARIES OF THE MILITARY DEPARTMENTS AND COMMANDANT OF THE U.S. COAST GUARD. In addition to the responsibilities in Paragraph 2.3, the Secretaries of the Military Departments and Commandant of the U.S. Coast Guard:

a. Assign an accurate DEMIL code to every item of DoD personal property for which each Military Department has management responsibility.

b. Develop DEMIL instructions and post them in a readily available location for every managed national item identification number that requires such instructions.

SECTION 3: DEMIL CODING

3.1. INTRODUCTION. DoD Components will:

a. Evaluate all DoD personal property for DEMIL requirements.

b. Train, resource, and equip DEMIL coding personnel, to assign DEMIL codes that:

(1) Reflect the risk of releasing DoD personal property out of DoD control.

(2) Consider the risks to public safety and public confidence of releasing DoD personal property.

(3) Consider the materiel descriptions in this volume, that are derived from the ITAR and the EAR, for guidance.

(4) Aid in the identification of items that require elimination of functional capability and inherent military design features prior, to release from DoD control.

(5) Aid in the identification of items that require mutilation (MUT) based on a sensitive or non-sensitive determination, in accordance with Paragraph 4.2.

(6) Aid in identification of the type of trade security control measures to apply to all DoD personal property, in accordance with DoDI 2030.08.

c. Assign a DEMIL code listed in Table 1 to all DoD personal property in accordance with the code assignment process in Paragraph 3.3. Table 1 includes items that:

(1) Require DEMIL (i.e. DEMIL codes “G,” “P,” “F,” “D,” “C,” and “E”).

(2) Do not require physical DEMIL, but require the lesser disposition policy driven control of MUT (i.e. DEMIL code “B;” DEMIL code “Q” with an integrity code (IC) of 3; and DEMIL code “Q” with an IC of 6 outside the United States).

(3) Do not require DEMIL or mutilation, and require applicable trade security control measures only upon release from DoD control (i.e. DEMIL code “A”).

Table 1. DEMIL Codes

Code	DEMIL Requirements
G	U.S. Munitions List (USML) or Commerce Control List (CCL) Military Items – **DEMIL required** – ammunition and explosives (AE). This code applies to both unclassified and classified AE items.
P	USML Items – **DEMIL required**. Security classified items.
F	USML or CCL Military Items – **DEMIL required**. Item managers, equipment specialists, or product specialists must furnish special DEMIL instructions
D	USML or CCL Military Items – **DEMIL required**. Destroy item and components to prevent restoration or repair to a usable condition.
C	USML or CCL Military Items – **DEMIL required**. Remove or demilitarize installed key point(s) items as DEMIL code "D."
E	DoD DEMIL Program Office reserves this code for its exclusive-use only. DEMIL instructions must be furnished by the DoD DEMIL Program Office.
B	USML Items – MUT to the point of scrap required worldwide.
Q	Commerce Control List Item (CCLI) – MUT to the point of scrap required outside the United States. Inside the United States, MUT is required when the DEMIL integrity code (IC) is "3" and MUT is not required when the DEMIL IC is "6."
A	Items subject to the Export Administration Regulations (EAR) in parts 730-774 of Title 15, Code of Federal Regulations (CFR) (CCLI or EAR99) and determined by the DoD to present a low risk when released out of DoD control. No DEMIL, MUT, or end use certificate is required. May require an export license from DOC.

d. Post the DEMIL code for national stock number (NSN) items to the Federal Logistics Information System upon completion of the provisioning process in accordance with DoD 4100.39-M.

e. For non-NSN items, store the DEMIL code in acquisition program-managed inventory management systems.

f. Comply with trade security controls in accordance with DoDI 2030.08 for all DoD export-controlled personal property.

3.2. DEMIL CODE ASSIGNMENT OVERVIEW.

a. General. The process for determining the DEMIL code that best characterizes the DEMIL requirements for an item is represented by the code assignment process in Paragraph 3.3. This overview provides general information about the process, table specific information, and preparatory information needed before starting the process.

(1) DoD Components must assign DEMIL codes for end items as well as parts components, accessories, and attachments for the given end item.

(2) When NSNs are required, DoD Components will assign the DEMIL code needed to support the provisioning process as the DEMIL code is a required data element for entry into the Federal Logistics Information System. In other cases, when an NSN is not required, a DEMIL code will still be required before the first disposition for that item.

(3) DoD Components will:

(a) Assign a DEMIL code to an item based on its technical characteristics including form, fit, and function.

(b) Use the DEMIL code assignment process in Paragraph 3.3 to determine the appropriate DEMIL code at the time of procurement or NSN assignment.

(c) Conduct a DEMIL code review after changes have been made that alter the original technical characteristics of an item, e.g., field hardware modifications or loading of classified data or software. Apply DEMIL code changes only to the items that have been altered and not to the original NSN or part number. Accomplish a re-identification of the item or altered items to a new NSN or part number.

(d) Include research and development material and partially complete materials when evaluating DEMIL requirements. Research and development material is often unique, will not have an NSN assigned, and may not have the extent of documentation available for a production version. Partially complete materials may arise due to discontinuation of a manufacturing process or as an outcome of a repair or parts cannibalization process.

b. Preparatory Information. Before starting the coding process, coders will:

(1) Review the general characteristics (e.g., item name, end item application, classification, and material content) of the item.

(2) Collect additional technical information (e.g., range, payload, operating frequency) as needed to address the technical criteria in Tables 3 to 23.

c. Table Specific.

(1) Review Tables 3 to 23 to determine which DEMIL coding table provides the best description for the end item. Components, accessories, and attachments will usually appear in the same tables as that of the end item. However, this is not always true. A notable example is an aircraft gas turbine engine that is found in Table 21, "Gas Turbine Engines and Associated Equipment," rather than in Table 10, "Aircraft and Related Articles."

(2) Coders will use DEMIL codes in Tables 3 to 23 as a recommendation. Tables 3 to 23 do not provide specifications for export requirements. A coder must evaluate each item using the DEMIL code assignment process in Paragraph 3.3 before assigning a DEMIL code to the item.

(3) Coders will apply the recommended DEMIL codes of "C," "D," "F," "P," or "G" in Part I of Tables 3 to 23 to items which are preceded by a black diamond symbol (♦) which designates significant military equipment (SME). The designation as SME provides coders with the correlation of the tables to the DoDI 4160.28 policy requirements for the DEMIL before

release of SME. Recommended DEMIL codes are also provided for the coders to consider for all other items with significant military utility that are not designated with a diamond as SME.

d. Specially Designed. Coders identify specially designed items by using Tables 3 to 23 in a catch and release process. Coders catch an item if it is used in or with an item listed in the Tables 3 to 23 and consider the item as specially designed. Coders release an item from being considered specially designed if the item:

(1) Is, regardless of form or fit, a fastener (e.g., screw, bolt, nut, nut plate, stud, insert, clip, rivet, pin), washer, spacer, insulator, grommet, bushing, spring, wire, or solder; or

(2) Has the same function, performance capabilities, and the same (or equivalent) form and fit, as another item that is used in or with an item that is or was in production, and:

(a) Is used in or with an item that is not in Tables 3 to 23, or

(b) Is in Part 2 of Tables 3 to 23 and the indicated export control classification number (ECCN) is controlled by the DOC for anti-terrorism reasons only.

3.3. DEMIL CODE ASSIGNMENT PROCESS.

DLA and the Military Departments will assign DEMIL codes using the process illustrated in Figure 1, steps described in Table 2, and supporting information in Tables 3 to 23.

Figure 1. DEMIL Code Assignment Process

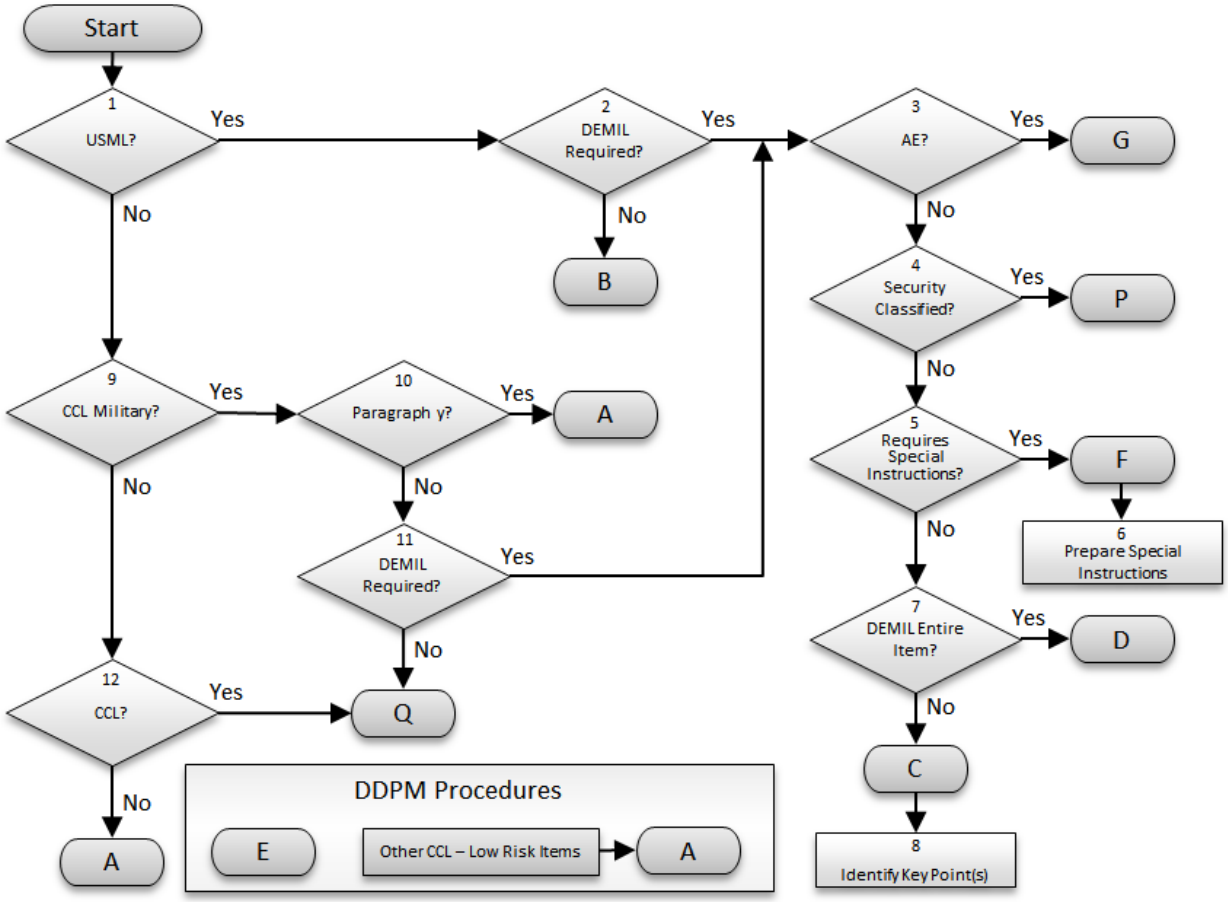


Table 2. Steps for Determining DEMIL Codes

Review the general characteristics of the item before Step 1.
Step 1: Is the item described in Part 1 of the applicable table?
1a. Review Tables 3 to 23 to locate the table which best fits the end item or item to be coded.
1b. If the item is listed in Part 1 of one of the tables, go to Step 2; if not, go to Step 9.
Step 2: Does the item require DEMIL?
2a. Determine if item is described with a recommended DEMIL code of "C," "D," "F," "P," or "G."
2b. If yes, go to Step 3; if no, assign DEMIL code "B."
Step 3: Is the item either security classified or unclassified AE?
AE includes, but is not necessarily limited to, all items of U.S.-titled (i.e., owned by the U.S. Government through the DoD Components) ammunition; propellants, liquid and solid; pyrotechnics; high explosives; guided missiles; warheads; devices; and chemical agent substances, devices, and components presenting real or potential hazards to life, property, and the environment.
3a. Based on item technical and logistics information, determine if it can be defined as AE.
3b. If item is AE assign DEMIL code "G"; if the item is not AE, go to Step 4.

Table 2. Steps for Determining DEMIL Codes, Continued

Step 4: Is the item security classified?
4a. Determine the item's security classification from the systems original classification authority issued security classification guidelines or other derived technical and logistics information. The ability to process or store classified data alone is not sufficient to assign DEMIL code "P."
4b. If the item's classification level is CONFIDENTIAL or higher assign DEMIL code "P"; if not, go to Step 5.
Step 5: Determine if the item requires special DEMIL instructions
5a. Assess whether item contains hazardous constituents that will cause environmental or personnel safety risks during physical performance of DEMIL. (See item's technical and logistics information or the item's safety data sheet for hazardous constituents.)
5b. Assess whether item presents a physical safety hazard which would create a personnel safety risk during physical performance of DEMIL. (See item technical information and procedures for potential safety hazards.)
5c. If item contains hazardous constituents or presents a physical safety hazard or requires occupational expertise, assign DEMIL code "F" and go to Step 6 and prepare special instructions. If not, go to Step 7.
Step 6: Prepare Special Instructions.
See https//demil.osd.mil for information on DEMIL instruction development guidelines for DEMIL code "F" items.
Step 7: Determine if the entire item requires destruction.
If item requires destruction, assign DEMIL code "D"; if not, assign DEMIL code "C" and go to Step 8.
Step 8: Identify key points for DEMIL
8a. Review the definition of key points for DEMIL in this volume.
8b. See Section 3 of Volume 3 of DoDM 4160.28 and review for examples of key points.
Step 9: Is the item described in Part 2 of Tables 3 to 23
9a. Review DEMIL coding Tables 3 to 23.
9b. If the item is listed in Part 2 of Tables 3 to 23, go to Step 10; if not listed or Table has no Part 2, go to Step 12.
Step 10: Is the item described in Paragraph (y), Part 2 of Tables 3 to 23?
10a. Determine if the item is described in Paragraph (y), Part 2 of Tables 3 to 23, and also meets the definition of specially designed.
10b. If yes, assign DEMIL code "A." If no, or no Paragraph (y) is listed, continue to Step 11.
Step 11: Does item require DEMIL?
11a. Determine if item is described with a DEMIL code of "C," "D," "F," or "G."
11b. If yes, go to Step 3; if no, assign DEMIL code "Q."
Step 12: Is the item on the CCL under a non-600 series ECCN?
12a. Review the ECCNs on the CCL in Part 774 of Title 15, CFR on website at https://www.bis.doc.gov/.
12b. Determine if the item is specified on the CCL under a specific ECCN.
12c. If a specific ECCN applies, assign DEMIL code "Q," and if not, assign DEMIL code "A."

Table 3. Firearms, Close Assault Weapons, and Combat Shotguns



Description of items for DEMIL coding	DEMIL Code
Military items described in the USML Category I	
♦ (a) Non-automatic and semi-automatic firearms up to and including .50 caliber (12.7 millimeters (mm)).	D
♦ (b) Fully automatic firearms up to .50 caliber (12.7mm).	D
♦ (c) Firearms or other weapons (e.g., insurgency-counterinsurgency and close assault weapons systems) having a special military application regardless of caliber.	D
♦ (d) Combat shotguns. This includes any shotgun with a barrel length less than 18 inches.	D
♦ (e) Silencers, mufflers, and sound and flash suppressors for the articles listed in this table and their specifically designed, modified, or adapted components and parts.	D
(f) Riflescopes manufactured to military specifications. DEMIL codes for night sighting devices are located in Paragraph (c) of Table 14.	D
♦ (g) Barrels, cylinders, receivers (frames), or complete breech mechanisms for the articles listed in this table.	D
(h) Major components, parts, accessories, and attachments specifically designed or modified for the articles listed in this table. For example, includes but is not limited to:	D
(1) Gun mounts including bipods or tripods.	
(2) Magazine.	
(3) Metallic parts and components.	
(i) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified	D
(j) Minor components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles listed in this table and not otherwise listed in Paragraphs (a) through (h) of this table.	B

Table 3. Firearms, Close Assault Weapons, and Combat Shotguns, Continued

Description of items for DEMIL coding	DEMIL Code
(k) Non-combat shotguns, pyrotechnic pistols, starter guns, and ground signal projectors.	D
(l) Military test equipment containing DEMIL required components listed in Tables 3 through 23.	C
(m) Military test equipment not containing components listed in Tables 3 through 23.	B

Table 4. Guns and Armament

Description of items for DEMIL coding	DEMIL Code
Guns and armament described in USML Category II	
♦ (a) Guns over .50 caliber (12.7mm), whether towed, airborne, self-propelled, or fixed, including, but not limited to, howitzers, mortars, cannons, recoilless rifles and grenade launchers.	C
(b) Flame throwers specifically designed or modified for military applications.	C
(c) Apparatus and devices for launching or delivering ordnance, other than those articles described in Table 6.	C
♦ (d) Kinetic energy weapon systems specifically designed or modified for destruction or rendering mission-abort of a target. The kinetic energy weapons systems include but are not limited to:	D
(1) Coil guns.	D
(2) Homing seeker, guidance, or divert propulsion (lateral acceleration) systems for projectiles.	D
(3) Launch systems and subsystems capable of accelerating masses larger than 0.1 grams to velocities in excess of 1.6 kilometers (km) per second, in single or rapid-fire modes, using methods such as electromagnetic, electrothermal, plasma, light gas, or chemical.	D
(4) Mass drivers.	D
(5) Prime power generation, electric armor, energy storage, thermal management; conditioning, switching or fuel-handling equipment; and the electrical interfaces between power supply gun and other turret electric drive function.	D
(6) Railguns.	D
(7) Ram accelerators.	D
(8) Target acquisition, tracking fire control, or damage assessment systems.	D
(e) Signature control materials (e.g., parasitic, structural, coatings, screening), techniques, and equipment specifically designed, developed, configured, adapted, or modified to alter or reduce the signature (e.g., muzzle flash	D

Table 4. Guns and Armament, Continued

Description of items for DEMIL coding	DEMIL Code
suppression, radar, infrared, visual, laser or electro-optical, acoustic) of defense articles in this table.	
♦ (f) Engines specifically designed or modified for the self-propelled guns and howitzers in this table.	D
(g) Tooling and equipment specifically designed or modified for the production of defense articles in this table.	D
(h) Test and evaluation equipment and test models specifically designed or modified for the defense articles in this table. This includes, but is not limited to, diagnostic instrumentation and physical test models.	C
(i) Autoloading systems for electronic programming of projectile function for the defense articles in this table.	C
(j) Major components, parts, accessories, and attachments specifically designed for the defense articles in this table. This includes but is not limited to:	D
(1) Armor plates.	D
(2) Breechblocks.	D
(3) Breech chambers.	D
(4) Breech couplings.	D
(5) Breech housings.	D
(6) Breech plugs.	D
(7) Breech rings.	D
(8) Breech yokes.	D
(9) Buffer mechanisms.	D
(10) Equilibrators (must be demilitarized before turn-in for disposition).	F
(11) Feeder mechanisms (including those for auto-cannon).	D
(12) Firing mechanisms.	D
(13) Flame hiders.	D
(14) Flame thrower operating mechanisms.	D
(15) Gun carriages.	D
(16) Gun mounts.	D
(17) Muzzle breaks.	D
(18) Receivers.	D
(19) Recoil mechanisms (must be demilitarized before turn-in for disposition).	F
(20) Recuperators (must be demilitarized before turn-in for disposition).	F

Table 4. Guns and Armament, Continued

Description of items for DEMIL coding	DEMIL Code
(21) Release mechanisms.	D
(22) Trunnion blocks.	D
(23) Tubes and gun barrels to include liners and sleeves.	D
(24) Turret rings.	D
(k) Decals, labels and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(l) Minor components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles listed in this table and not otherwise listed in Paragraphs (a) through (k) of this table.	B
(m) Military test equipment containing DEMIL required components listed in Tables 3 through 23.	C
(n) Military test equipment not containing components listed in Tables 3 through 23.	B
INTERPRETATIONS. The defense articles in this table include any end item, component, accessory, attachment part, firmware, software, or system designed or manufactured using technical data and defense services in this table.	

Table 5. Ammunition and Ordnance

Description of items for DEMIL coding	DEMIL Code
Ammunition and ordnance as described in USML Category III	
♦ (a) Ammunition and ordnance for the defense articles listed in Tables 3 and 4.	G
(b) Ammunition and ordnance handling equipment specifically designed or modified for the defense articles in this table, such as belting, linking, and de-linking equipment.	D
(c) Equipment and tooling specifically designed or modified for the production of defense articles in this table.	D
(d) Major components, parts, accessories, attachments, and associated equipment specifically designed or modified for the defense articles in this table. This includes, but is not limited to:	D
(1) Ammunition manufacturing and loading machines.	D
(2) Armor piercing ammunition, cores, and components.	G
(3) Cartridges.	G
(4) Detonating devices for ammunition.	G
♦ (5) Guidance and control components for the defense articles in this table.	C
(6) Incendiary ammunition agents; except those having dual military and commercial use (e.g. ECCN IC608,1C018). The EAR does not control devices or charges containing materials controlled by USML	G
(7) Metallic and composite sabots.	D
(8) Primers and components.	G
(9) Rotating bands.	D
(10) Specialized containers that are not found in Table 15, ECCN 0A617 Paragraph (y)(3).	D
♦ (11) Non-explosive safing, arming, and fuzing components (including target detection and localization devices) for the defense articles listed in this table.	D

Table 5. Ammunition and Ordnance, Continued

Description of items for DEMIL coding	DEMIL Code
(e) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified. This includes blueprints, drawings, photographs, plans, instructions, or documentation.	D
(f) Projectiles over .50 caliber that have had their energetic material removed.	D
(g) Minor components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles listed in this table and not otherwise listed in Paragraphs (a) through (h) of this table.	B
(h) Military test equipment containing DEMIL required components listed in Tables 3 to 23	C
(h) Military test equipment not containing components listed in Tables 3 to 23.	B

INTERPRETATIONS:
The components, parts, accessories, and attachments for the defense articles described in this table include, but are not limited to:

- Cartridge cases.
- Powder bags (or other propellant charges).
- Bullets.
- Jackets.
- Cores.
- Shells (excluding shotgun shells).
- Projectiles (including canister rounds and submunitions).
- Boosters.
- Firing components.
- Primers.
- Other detonating devices for the defense articles described in this table.

The defense articles listed in this table include any end item, component, accessory, attachment, part, firmware, software, or system designed or manufactured using technical data and defense services in this table.

The articles specifically designed or modified for military application described in this table include any article specifically developed, configured, or adapted for military application.

Table 5. Ammunition and Ordnance, Continued

EXCLUSIONS. This table does not control expended cartridge cases for items in Paragraphs (a) and (b) of Table 3. See Volume 3 of this manual for special processing of expended cartridge cases. This table does not apply to cartridge and shell casings that, before release from DoD control, have been rendered useless beyond the possibility of restoration for use as a cartridge or shell casing by means of heating, flame treatment, mangling, crushing, cutting, or popping.
Equipment and tooling in this table does not include equipment for hand-loading ammunition and similar items in ECCN 0B986 covered by the EAR in accordance with Parts 730-774 of Title 15, CFR.

Table 6. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines

Description of items for DEMIL coding	DEMIL Code
Part 1. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines Items described in USML Category IV	
♦ (a) Rockets, space launch vehicles (SLVs), missiles, bombs, torpedoes, depth charges, mines, and grenades:	
(1) Rockets, SLVs, and missiles capable of delivering at least a 500 kilogram (kg) payload to a range of at least 300 km.	G
(2) Rockets, SLVs, and missiles capable of delivering less than a 500 kg payload to a range of at least 300 km.	G
(3) Man-portable air defense systems (MANPADS).	G
(4) Anti-tank missiles and rockets.	G
(5) Rockets, SLVs, and missiles not matching the description in Paragraphs (a)(1) through (a)(4).	G
(6) Bombs.	G
(7) Torpedoes.	G
(8) Depth charges.	G
(9) Anti-personnel, anti-vehicle, or anti-armor land mines (e.g., area denial devices).	G
(10) Anti-helicopter mines.	G
(11) Naval mines.	G
(12) Fragmentation and high explosive hand grenades.	G
(13) Inert, dummy, and practice rockets, missiles, bombs, torpedoes, depth charges, mines, and grenades containing no AE.	*D*
♦ (b) Launchers for rockets, SLVs, and missiles:	
(1) Fixed launch sites and mobile launcher mechanisms for any system listed in Paragraphs (a)(1) and (a)(2).	C

Table 6. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines, Continued

Description of items for DEMIL coding	DEMIL Code
(2) Fixed launch sites and mobile launcher mechanisms for any system listed in Paragraphs (a)(3) through (a)(5) (e.g., launch tables, tube-launched, optically tracked, wire-guided missile, MANPADS).	C
(c) Apparatus and devices specially designed for the handling, control, activation, monitoring, detection, protection, discharge, or detonation of the defense articles listed in Paragraphs (a) and (b).	D
♦ (d) Rocket, SLV, and missile power plants:	
(1) Except as listed in Paragraph (d)(2) or (d)(3), individual rocket stages for the defense articles listed in Paragraph (a)(1), (a)(2), or (a)(5).	G
(2) Solid propellant rocket motors, hybrid or gel rocket motors, or liquid propellant rocket engines having a total impulse capacity equal to or greater than 1.1×10^6 Newton second (N•s).	G
(3) Solid propellant rocket motors, hybrid or gel rocket motors, or liquid propellant rocket engines having a total impulse capacity equal to or greater than 8.41×10^5 N•s, but less than 1.1×10^6 N•s.	G
(4) Combined cycle, pulsejet, ramjet, or scramjet engines.	D
(5) Air-breathing engines that operate above Mach 4 not listed in Paragraph (d)(4).	C
(6) Pressure gain combustion-based propulsion systems not listed in Paragraphs (d)(4) and (d)(5).	C
(7) Rocket, SLV, and missile engines and motors not otherwise listed in Paragraphs (d)(1) through (d)(6) or Part 1 of Table 21.	C
(e) Reserved.	N/A
(f) Reserved.	N/A
♦ (g) Non-nuclear warheads for rockets, bombs, and missiles (e.g., explosive, kinetic, electromagnetic pulse, thermobaric, shape charge, and fuel air explosive).	G
(h) Systems, subsystems, parts, components, accessories, attachments, or associated equipment:	
(1) Flight control and guidance systems (including guidance sets) specially designed for defense articles listed in Paragraph (a).	D
(2) Seeker systems specially designed for defense articles listed in Paragraph (a) (e.g., radiofrequency, infrared).	D
(3) Kinetic kill vehicles and specially designed parts and components.	D
(4) Missile or rocket thrust vector control systems.	D

Table 6. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines, Continued

Description of items for DEMIL coding	DEMIL Code
(5) MANPADS grip stocks and specially designed parts and components.	D
(6) Rocket or missile nozzles and nozzle throats, and specially designed parts and components.	D
(7) Rocket or missile nose tips, nose fairings, or aerospikes, and specially designed parts and components.	D
(8) Re-entry vehicle or warhead heat shields.	D
(9) Missile and rocket safing, arming, fuzing, and firing components (to include target detection and proximity sensing devices) and specially designed parts.	D
(10) Self-destruct systems specially designed for defense articles listed in Paragraph (a).	D
(11) Separation mechanisms, staging mechanisms, and interstages useable for defense articles listed in Paragraph (a), and specially designed parts and components.	D
(12) Post-boost vehicles.	D
(13) Engine or motor mounts specially designed for defense articles listed in Paragraphs (a) and (b).	D
(14) Combustion chambers specially designed for defense articles listed in Paragraphs (a) and (d) and specially designed parts and components.	D
(15) Injectors specially designed for defense articles described in this table.	D
(16) Solid rocket motor or liquid engine igniters.	G
(17) Re-entry vehicles and specially designed parts and components not elsewhere specified in this table.	D
(18) Specially designed parts and components for articles described in Paragraph (g) not elsewhere specified in this table.	D
(19) Penetration aids and specially designed parts and components (e.g., physical or electronic countermeasure suites, re-entry vehicle replicas or decoys, or submunitions).	D
(20) Rocket motor cases and specially designed parts and components (e.g., flanges, flange seals, end domes).	D
(21) Solid rocket motor liners and rocket motor insulation; and rocket motor insulation usable in systems in Paragraphs (a)(1) and (a)(2).	D
(22) Radomes, sensor windows, and antenna windows specially designed for articles listed in Paragraph (a).	D
(23) Rocket or missile payload fairings.	D
(24) Rocket or missile launch canisters.	D

Table 6. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines, Continued

Description of items for DEMIL coding	DEMIL Code
(25) Fuzes specially designed for articles listed in Paragraph (a) (e.g., proximity, contact, electronic, dispenser proximity, airburst, variable time delay, or multioption).	G
(26) Rocket or missile liquid propellant tanks.	G
(27) Rocket or missile altimeters specially designed for use in defense articles listed in Paragraph (a)(1).	D
(28) Pneumatic, hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire systems) and attitude control equipment specially designed for use in the rockets or missiles listed in Paragraph (a)(1).	D
(29) Umbilical and interstage electrical connectors specially designed for use in the rockets or missiles listed in Paragraph (a)(1) or (a)(2).	D
♦ (30) Any part, component, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D
(i) Decals, labels and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D

Part 2. Military items described in the CCL	
ECCN 0A604	**Commodities related to military explosive devices and charges**
(a) Demolition blocks, and detonators designed, modified, or adapted.	G
(b) Military explosive excavating devices.	G
(c) Smoke hand grenades and stun hand grenades (e.g., flashbangs) not described in ECCN 1A984.	G
(d) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments that are for an ECCN 0A604 item listed in Paragraph (a) of Part 2 or a defense article in Part 1.	Q

Table 6. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines, Continued

Description of items for DEMIL coding		DEMIL Code
ECCN 9A604	**Commodities related to launch vehicles, missiles, and rockets**	
(a) Thermal batteries specially designed for systems described under Part 1 capable of a range equal to or greater than 300 km:		
(1) U.S. Department of Transportation (USDOT) hazardous material (HazMat) rating of 1.4 or higher (e.g., 1.3, 1.2 are higher ratings) are considered explosive (as defined in the Class 1 Definitions in Part 173.50 of Title 49, CFR).		G
(2) USDOT HazMat rating of less than 1.4.		F
(b) Thermal batteries, except for thermal batteries described by Paragraph (a) of this ECCN, that are specially designed for systems described under Part 1:		
(1) USDOT HazMat rating of 1.4 or higher (e.g., 1.3, 1.2 are higher ratings) are considered explosive (as defined in the Class 1 Definitions in Part 173.50 of Title 49, CFR.)		G
(2) USDOT HazMat rating of less than 1.4.		F
(c) Components specially designed for ramjet, scramjet, pulse jet, or combined cycle engines described under Part 1, including devices to regulate combustion in such commodities.		Q
(d) Components specially designed for hybrid rocket motors described in Part 1 usable in rockets, missiles, or unmanned aerial vehicles (UAV) capable of a range equal to or greater than 300 km.		Q
(e) Components specially designed for pressure gain combustion-based propulsion systems described in Part 1.		Q
(f) Composite structures, laminates, and manufactures thereof specially designed for the following items described in Part 1:		
(1) Systems capable of a range equal to or greater than 300 km.		Q
(2) Individual rocket stages usable in ECCN 9A604, Paragraph (f)(1).		Q
(3) Solid propellant rocket motors or hybrid rocket motors having a total impulse capacity equal to or greater than 8.41×10^5 N•s. or		Q
(4) Liquid propellant rocket engines integrated, designed, or modified to be integrated, into a liquid propellant propulsion system which has a total impulse capacity equal to or greater than 8.41×10^5 N•s.		Q
(5) Thrust vector control systems usable in rockets, SLVs, and missiles capable of delivering at least a 500 kg payload to a range of at least 300 km.		Q

Table 6. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines, Continued

Description of items for DEMIL coding	DEMIL Code
(6) Re-entry vehicles or warhead heat shields usable in rockets, SLVs, and missiles capable of delivering at least a 500 kg payload to a range of at least 300 km.	Q
(7) Safing, arming, fuzing, and firing components usable in rockets, SLVs, and missiles capable of delivering at least a 500 kg payload to a range of at least 300 km.	Q
(g) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments for an item listed in this table.	Q
ECCN 0B604	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities in ECCN 0A604 or related defense articles in USML Category IV**
(a) Test, inspection, and other production equipment that are specially designed for the development, production, repair, overhaul, or refurbishing of commodities listed in Part 2 or for bombs, torpedoes, depth charges, mines, and hand grenades, and parts, components, accessories, and attachments listed in Part 1.	Q
(b) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments that are for an item listed for ECCN 0B604 in Paragraph (a), Part 2.	Q
ECCN 9B604	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities in ECCN 9A604 or related defense articles in USML Category IV**
(a) Production facilities specially designed for items that are described in Paragraphs (a)(1) or (a)(2) of Part 1.	Q
(b) Test, calibration, and alignment equipment specially designed for items that are described in Paragraph (h)(28) of Part 1.	Q
(c) Test, inspection, and other production equipment that is specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 9A604, Part 2, or defense articles described under Part 1, and not specified in ECCN 0B604 in Paragraph (a) or in ECCN 9B604 Paragraphs (a), (b), or (d) of Part 2.	Q
(d) Specially designed production facilities or production equipment for systems, sub-systems, and components described in Paragraphs (d)(1), (d)(7), (h)(1), (h)(4), (h)(6), (h)(7), (h)(8), (h)(9), (h)(11), (h)(20), (h)(21), (h)(26), or (h)(28) in Part 1.	Q
(e) through (w) Reserved.	N/A

Table 6. Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs, and Mines, Continued

Description of items for DEMIL coding	DEMIL Code
(x) Parts, components, accessories, and attachments that are specially designed for an item subject to ECCN 9B604 in Paragraph (a) or (b) of Part 2.	Q

Table 7. Explosives and Energetic Materials, Propellants, Incendiary Agents, and their Constituents

Description of items for DEMIL coding	**DEMIL Code**
Part 1. Explosives and Energetic Materials, Propellants, Incendiary Agents described in USML Category V	
♦ (a) Explosives and mixtures (see Subpart 121.1 of Title 22, CFR for a complete list).	G
♦ (b) Propellants (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(c) Pyrotechnics, fuels, and related substances, and mixtures (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(d) Oxidizers (see Subpart 121.1 of Title 22, CFR for a complete list).	G
♦ (e) Binders and mixtures (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(f) Additives (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(g) Precursors (see Subpart 121.1 of Title 22, CFR for a complete list).	G
♦ (h) Any explosive, propellant, pyrotechnic, fuel, oxidizer, binder, additive, or precursor that:	
(1) Is classified.	G
(2) Is unclassified but being developed using classified information.	G
(i) Developmental explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors funded by DoD via contract or other funding authorization.	G
(j) Decals, labels, and technical manuals containing technical data directly related to the items listed described as either:	
(1) Classified or	P
(2) Unclassified.	D

Table 7. Explosives and Energetic Materials, Propellants, Incendiary Agents and Their Constituents, Continued

Description of items for DEMIL coding	DEMIL Code
(k) The interpretations at the end explain and amplify the terms used in this table.	N/A
(l) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 1B608	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities listed in ECCN 1C608 or USML Category V.**
(a) Equipment specially designed for the development, production, repair, overhaul, or refurbishing of items described in ECCN 1C608 or listed in Part 1 and not elsewhere specified on the USML.	Q
(b) Complete installations specially designed for the development, production, repair, overhaul, or refurbishing of items described in ECCN 1C608 or listed in Part 1 and not elsewhere specified on the USML.	Q
(c) Environmental test facilities specially designed for the certification, qualification, or testing of items described in ECCN 1C608 or listed in Part 1.	Q
(d) through (w) Reserved.	N/A
(x) Parts, components, accessories, and attachments that are specially designed for an item described in ECCN 1B608 or a defense article listed in Part 1 and not elsewhere specified on the USML.	Q
ECCN 1C608	**Energetic materials and related commodities**
(a) Single base, double base, and triple base propellants having nitrocellulose with nitrogen content greater than 12.6 percent in the form of either:	
(1) Sheetstock or carpet rolls; or	G
(2) Grains with diameter greater than 0.10 inches. This entry does not control propellant grains used in shotgun shells, small arms cartridges, or rifle cartridges.	G
(b) Shock tubes containing greater than 0.064 kg per meter (300 grains per foot), but not more than 0.1 kg per meter (470 grains per foot) of controlled materials.	G
(c) Cartridge power devices containing greater than 0.70 kg, but not more than 1.0 kg of controlled materials.	G
(d) Detonators (electric or nonelectric) and specially designed assemblies containing greater than 0.01 kg, but not more than 0.1 kg of controlled materials.	G

Table 7. Explosives and Energetic Materials, Propellants, Incendiary Agents and Their Constituents, Continued

Description of items for DEMIL coding	DEMIL Code
(e) Igniters not described in Part 1 USML Categories III or IV that contain greater than 0.01 kg, but not more than 0.1 kg of controlled materials.	G
(f) Oil well cartridges containing greater than 0.015 kg, but not more than 0.1 kg of controlled materials.	G
(g) Commercial cast or pressed boosters containing greater than 1.0 kg, but not more than 5.0 kg of controlled materials.	G
(h) Commercial prefabricated slurries and emulsions containing greater than 10 kg and less than or equal to 35 percent by weight of USML controlled materials.	G
(i) Reserved.	N/A
(j) Pyrotechnic devices specially designed for commercial purposes (e.g., theatrical stages, motion picture special effects, and fireworks displays), and containing greater than 3.0 kg, but not more than 5.0 kg of controlled materials.	G
(k) Other commercial explosive devices or charges specially designed for commercial applications, not described in Paragraphs (c) through (g) of this ECCN, containing greater than 1.0 kg, but not more than 5.0 kg of controlled materials.	G
(l) Propyleneimine.	G
(m) Any oxidizer or mixture thereof that is a compound composed of fluorine and one or more of the following: other halogens, oxygen, or nitrogen.	G
(n) Any explosives, propellants, oxidizers, pyrotechnics, fuels, binders, or additives that are specially designed for military application and not listed or otherwise described in Part 1 or elsewhere on the USML. This entry does not apply to the following aircraft fuels: JP–4, JP–5, and JP–8.	G

INTERPRETATIONS:
The following interpretations explain and amplify the terms used in this table.

(a) Part 1.

(1) This table provides DEMIL codes for USML Category V 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 described in this table into an item not controlled will no longer be described in this table 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

Table 7. Explosives and Energetic Materials, Propellants, Incendiary Agents and Their Constituents, Continued

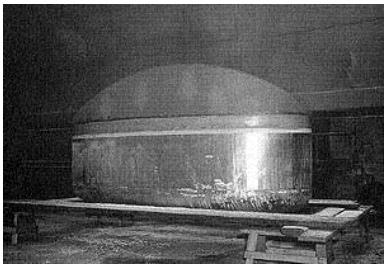
not controlled unless meeting an explosive or propellant control. The mixture of beryllium powder in a cured thermoset shape is not described in this table. Use this table to determine the DEMIL code for the mixture of controlled beryllium powder mixed with a typical propellant binder. The addition of dry silica powder to dry beryllium powder will remain controlled. (3) Paragraph (c)(4)(ii)(A) of Subpart 121.1 of Title 22, CFR does not apply to boron and boron carbide enriched with boron-10 (20 percent or more of total boron-10 content).

(4) Theoretical specific impulse is calculated using standard conditions (1000 psi chamber pressure expanded to 14.7 psi) and measured in units of pound-force (lbf) seconds per pound-mass (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.

(b) Part 2. For items listed in Part 2, the term controlled materials means controlled energetic materials listed in Part 1 or for ECCN 1C608 in Part 2.

Table 8. Surface Vessels of War and Special Naval Equipment

Description of items for DEMIL coding	DEMIL Code
Part 1. Surface Vessels of War and Special Naval Equipment described in USML Category VI	
♦ (a) Warships and other combatant vessels (i.e., battleships, aircraft carriers, destroyers, frigates, cruisers, corvettes, littoral combat ships, mine sweepers, mine hunters, mine countermeasure ships, dock landing ships, amphibious assault ships), Coast Guard cutters (with or equivalent to those with U.S. designations as "W" for Coast Guard vessels high endurance cutters (WHEC), medium endurance cutters (WMEC), maritime security cutter, large (WMSL), or patrol boats (WPB) for the purpose of this table), or foreign-origin vessels specially designed to provide functions equivalent to the vessels listed here.	C
(b) Other vessels not described in Paragraph (a):	
(1) High-speed air cushion vessels for transporting cargo and personnel, ship-to-shore and across a beach, with a payload over 25 tons.	C
(2) Surface vessels integrated with nuclear propulsion plants or specially designed to support naval nuclear propulsion plants.	C
(3) Vessels armed or specially designed to be used as a platform to deliver munitions or otherwise destroy or incapacitate targets (e.g., firing lasers, launching torpedoes, rockets, missiles, or firing munitions greater than .50 caliber).	C
(4) Vessels incorporating any mission systems described in Tables 3 to 23.	C
(c) Developmental vessels and specially designed parts, components, accessories, and attachments, funded by the DoD via contract or other funding authorization.	C
(d) Reserved.	N/A
♦ (e) Naval nuclear propulsion plants and prototypes and special facilities for their construction, support, and maintenance.	C
(f) Vessel and naval equipment components, parts, accessories, attachments, associated equipment, and systems:	
(1) Hulls or superstructures, including support structures that:	D

Table 8. Surface Vessels of War and Special Naval Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
a. Are specially designed for any vessels described in Paragraph (a) of Table 8.	
b. Have armor, active protection systems, or developmental armor systems.	
c. Are specially designed to survive 12.5 percent or greater damage across the length as measured between perpendiculars.	
(2) Systems that manage, store, create, distribute, conserve, and transfer energy, and specially designed parts and components that have:	D
a. Storage exceeding 30 megajoules;	
b. A discharge rate less than 3 seconds; and	
c. A cycle time under 45 seconds.	
(3) Shipborne auxiliary systems for chemical, biological, radiological, and nuclear compartmentalization, over-pressurization and filtration systems, and specially designed parts and components.	F
♦ (4) Control and monitoring systems for autonomous unmanned vessels capable of on-board, autonomous perception and decision-making necessary for the vessel to navigate while avoiding fixed and moving hazards, and obeying rules-of-the-road without human intervention.	D
♦ (5) Any machinery, device, component, or equipment, including production, testing, and inspection equipment, and tooling, specially designed, or modified for plants or facilities described in Paragraph (e).	D
(6) Parts, components, accessories, attachments, and equipment specially designed for integration of articles described in Part 1 of Tables 4, 6, and 20 or catapults for launching aircraft or arresting gear for recovering aircraft.	D
(7) Shipborne active protection systems (i.e., defensive systems that actively detect and track incoming threats and launch a ballistic, explosive, energy, or electromagnetic countermeasure(s) to neutralize the threat before contact with a vessel) and specially designed parts and components.	D
(8) Minesweeping and mine hunting equipment (including mine countermeasures equipment deployed by aircraft) and specially designed parts and components.	D
♦ (9) Any component, part, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D
(g) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	

Table 8. Surface Vessels of War and Special Naval Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(1) Classified or	P
(2) Unclassified.	D
(h) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 8A609	**Surface vessels of war and related commodities.**
(a) Surface vessels of war specially designed for a military use and not listed in Part 1:	
(1) Underway replenishment ships.	C
(2) Surface vessel and submarine tender and repair ships, ships, except vessels that are specially designed to support naval nuclear propulsion plants.	C
(3) Non-submersible submarine rescue ships.	C
(4) Other auxiliaries (e.g., auxiliary deep submergence support ship, auxiliary miscellaneous command ship, auxiliary missile range instrumentation ship, auxiliary organic research ship, auxiliary ocean surveillance ship, auxiliary hospital ship , auxiliary transport , auxiliary repair ship, small auxiliary aviation logistic support ship , auxiliary guided missile ship, and auxiliary aircraft landing training ship).	C
(5) Amphibious warfare craft except those that are armed.	C
(6) Unarmored and unarmed coastal, patrol, roadstead, and Coast Guard and other patrol craft with mounts or hard points for firearms of .50 caliber or less.	C
(b) Non-magnetic diesel engines with a power output of 50 horsepower or more and either of the following:	
(1) Non-magnetic content exceeding 25 percent of total weight; or	Q
(2) Non-magnetic parts other than crankcase, block, head, pistons, covers, end plates, valve facings, gaskets, and fuel, lubrication, and other supply lines.	Q
(c) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments that are for an item listed in ECCN 8A609 in Part 2 or a defense article in Part 1 and not listed in ECCN 8A609 in Paragraph (y), Part 2.	Q
(y) Specific parts, components, accessories, and attachments specially designed for an item described in Part 2 of this table	
(1) Public address systems.	A

Table 8. Surface Vessels of War and Special Naval Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(2) Filters and filter assemblies, hoses, lines, fittings, couplings, and brackets for pneumatic, hydraulic, oil, and fuel systems.	A
(3) Galleys.	A
(4) Lavatories.	A
(5) Magnetic compass, magnetic azimuth detector.	A
(6) Medical facilities.	A
(7) Potable water tanks, filters, valves, hoses, lines, fittings, couplings, and brackets.	A
(8) Panel knobs, indicators, switches, buttons, and dials whether unfiltered or filtered for use with night vision imaging systems.	A
(9) Emergency lighting.	A
(10) Gauges and indicators.	A
(11) Audio selector panels.	A
ECCN 8B609	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities listed in ECCN 8A609 or USML Category VI.**
(a) Test, inspection, and production equipment specially designed for the development, production, repair, overhaul, or refurbishing of commodities listed in ECCN 8A609 in Part 2 or in Part 1, and parts, components, accessories, and attachments specially designed.	C
(b) Reserved.	N/A
ECCN 8C609	**Materials specially designed for the development or production of commodities described in 8A609 not elsewhere specified in the USML.**
(a) Materials not listed in Part 1 specially designed for commodities listed in ECCN 8A609 in Part 2.	Q
(b) Reserved.	N/A
INTERPRETATIONS: (a) Surface vessels of war are those manned or unmanned that: (1) Are warships and other combatant vessels (battleships, aircraft carriers, destroyers, frigates, cruisers, corvettes, littoral combat ships, mine sweepers, mine hunters, mine	

Table 8. Surface Vessels of War and Special Naval Equipment, Continued

countermeasures ships, dock landing ships, amphibious assault ships), or Coast Guard cutters (with or equivalent to designations WHEC, WMEC, WMSL, or WPB).

(2) Are foreign-origin vessels specially designed to provide functions equivalent to those of the vessels listed in Paragraph (a)(1) of these interpretations.

(3) Are high-speed air cushion vessels for transporting cargo and personnel, ship-to-shore and across a beach, with a payload over 25 tons.

(4) Are surface vessels integrated with nuclear propulsion systems or specially designed to support naval nuclear propulsion plants.

(5) Are armed or are specifically designed to be used as a platform to deliver munitions or otherwise destroy or incapacitate targets (e.g., firing lasers, launching torpedoes, rockets, or missiles, or firing munitions greater than .50 caliber).

(6) Incorporate any mission systems described in Tables 3 to 23. This refers to specific functions such as military communication, electronic warfare, target designation, surveillance, target detection, or sensor capabilities.

(b) Vessels specially designed for military use that are not described in Paragraph (a) of this table are subject to the EAR in accordance with Parts 730-774 of Title 15, CFR under ECCN 8A609, including any demilitarized vessels, regardless of origin or designation, manufactured before 1950 and unmodified since 1949. Modifications made to incorporate safety features required by law, are cosmetic (e.g., different paint), or that add parts or components otherwise available before 1950 are considered unmodified for the purposes of this paragraph.

Table 9. Ground Vehicles



Description of items for DEMIL coding	DEMIL Code
Part 1. Ground Vehicles described in USML Category VII	
♦ (a) Armored combat ground vehicles:	
(1) Tanks.	D
(2) Infantry fighting vehicles.	D
♦ (b) Ground vehicles (not listed in Paragraph (a)) and trailers that are armed or are specially designed to serve as a firing or launch platform.	C
(c) Ground vehicles and trailers equipped with any mission systems described in Part 1 of Tables 3 to 23.	C
(d) Reserved.	N/A
♦ (e) Armored support ground vehicles capable of off-road or amphibious use specially designed to transport or deploy personnel or materiel, or to move with other vehicles over land in close support of combat vehicles or troops (e.g., personnel carriers, resupply vehicles, combat engineer vehicles, recovery vehicles, reconnaissance vehicles, bridge launching vehicles, ambulances, and command and control vehicles).	
(1) Armor integral to structure.	D
(2) Add-on armor (i.e., bolted, welded, or otherwise attached).	C
(f) Reserved.	N/A
(g) Ground vehicle parts, components, accessories, attachments, and associated equipment.	
(1) Armored hulls, armored turrets, and turret rings.	D
(2) Active protection systems (i.e., defensive systems that actively detect and track incoming threats and launch a ballistic, explosive, energy, or electromagnetic countermeasure(s) to neutralize the threat before contact with a vehicle) and specially designed parts and components.	D
(3) Composite armor parts and components specially designed for the vehicles in this table.	D

Table 9. Ground Vehicles, Continued

Description of items for DEMIL coding	DEMIL Code
(4) Non-explosive spaced armor components and parts, including slat armor parts and components and parts specially designed for the vehicles in this table.	D
(5) Reactive armor parts and explosive parts and components.	G
(6) Electromagnetic armor parts and components, including pulsed power specially designed parts and components.	D
(7) Built in test equipment to evaluate the condition of weapons or other mission systems for vehicles described in this table, excluding equipment that provides diagnostics solely for a subsystem or component for the basic operation of the vehicle.	D
(8) Gun mount, stabilization, turret drive, and automatic elevating systems, and specially designed parts and components.	D
(9) Self-launching bridge components rated for 60 tons or above for deployment by vehicles listed in this table.	D
(10) Suspension components.	
a. Rotary shock absorbers specially designed for the vehicles weighing more than 30 tons in this table.	D
b. Torsion bars specially designed for the vehicles weighing more than 50 tons in this table.	D
(11) Kits specially designed to convert a vehicle in this table into either an unmanned or a driver-optional vehicle. For a kit to be described by this paragraph, it must, at a minimum, include equipment for: a. Remote or autonomous steering. b. Acceleration and braking. c. A control system.	D
(12) Fire control computers, mission computers, vehicle management computers, integrated core processers, stores management systems, armaments control processors, vehicle-weapon interface units, and computers.	D
(13) Test or calibration equipment for the mission systems of the vehicles described in this table, except those listed elsewhere; or	D
♦ (14) Any part, component, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but is being developed using classified information.	D

Table 9. Ground Vehicles, Continued

Description of items for DEMIL coding	DEMIL Code
(h) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(i) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 0A606 — **Ground vehicles and related commodities.**	
(a) Ground vehicles, whether manned or unmanned, specially designed for a military use and not listed in Part 1 of Table 9.	
(1) Reserved.	N/A
(2) Reserved.	N/A
(3) Unarmored, unarmed military recovery and other support vehicles.	Q
(4) Unarmored, unarmed vehicles with key points for DEMIL (e.g. mounts or hard points) for firearms of .50 caliber or less.	C
(5) Trailers specially designed for use with other ground vehicles listed in Part 1 or Paragraph (a) of Part 2, and not separately listed in Part 1.	Q
(b) Other ground military vehicles, parts, and components:	
(1) Unarmed vehicles that are derived from civilian vehicles and that have **any** of the following:	C
a. Manufactured or fitted with materials or components other than reactive or electromagnetic armor to provide ballistic protection;	D
b. A transmission to provide drive to both front and rear wheels simultaneously, including those vehicles having additional wheels for load bearing purposes whether driven or not;	Q
c. Gross vehicle weight rating greater than 4,500 kg; and	Q
d. Designed or modified for off-road use	Q
(2) Parts and components	
a. Specially designed for vehicles specified in Paragraph (b)(1) of Part 2.	Q
b. Providing ballistic protection.	D
(c) Air-cooled diesel engines and engine blocks for armored vehicles that weigh more than 40 tons.	Q

Table 9. Ground Vehicles, Continued

Description of items for DEMIL coding	DEMIL Code
(d) Fully automatic continuously variable transmissions for tracked combat vehicles.	D
(e) Deep water fording kits specially designed for ground vehicles described in Part 1 or for ECCN 0A606 in Paragraph (a), Part 2.	Q
(f) Self-launching bridge components not listed in Paragraph (g), Part 1, specially designed for deployment by ground vehicles listed in Part 1 or in ECCN 0A606, Part 2.	Q
(g) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments that are for a defense article in Part 1 or for an item listed in ECCN 0A606 (other than Paragraph (b) or (y)) of Part 2.	Q
(y) Specific parts, components, accessories, and attachments specially designed for an item listed in this ECCN (other than Paragraph (b)) or a defense article in Part 1, and parts components, accessories, and attachments specially designed:	
(1) Brake discs, rotors, drums, calipers, cylinders, pads, shoes, lines, hoses, vacuum boosters, and parts.	A
(2) Alternators and generators.	A
(3) Axles.	A
(4) Batteries.	A
(5) Bearings (e.g., ball, roller, wheel).	A
(6) Cables, cable assembles, and connectors.	A
(7) Cooling system hoses.	A
(8) Hydraulic, fuel, oil, and air filters, other than those described in ECCN 1A004.	A
(9) Gaskets and o-rings.	A
(10) Hydraulic system hoses, fittings, couplings, adapters, and valves.	A
(11) Latches and hinges.	A
(12) Lighting systems, fuses, and components.	A
(13) Pneumatic hoses, fittings, adapters, couplings, and valves.	A
(14) Seats, seat assemblies, seat supports, and harnesses.	A
(15) Tires, except run flat.	A
(16) Windows, except those for armored vehicles.	A

Table 9. Ground Vehicles, Continued

Description of items for DEMIL coding		DEMIL Code
ECCN 0B606	**Test, inspection, and production equipment and related commodities, not listed on the USML, specially designed for the development or production, repair, overhaul, or refurbishing of commodities listed in ECCN 0A606 or USML Category VII.**	
(a) Test, inspection, and production equipment specially designed for the development, production, repair, overhaul, or refurbishing of commodities listed in this table except ECCN 0A606 Paragraphs (b) and (y), and parts, components, accessories, and attachments specially designed including:		Q
(1) Armor plate drilling machines, other than radial drilling machines.		
(2) Armor plate planning machines.		
(3) Armor plate quenching presses.		
(4) Tank turret bearing grinding machines.		
(b) Environmental test facilities specially designed for the certification, qualification, or testing of commodities listed in ECCN 0A606 in Part 2 (except for Paragraph (b)), or in Part 1, and equipment specially designed.		Q
ECCN 0C606	**Materials specially designed for commodities described by 0A606 not elsewhere specified the USML.**	
(a) Materials specially designed for commodities listed in ECCN 0A606 or Part 1, not elsewhere specified in the USML or the CCL.		Q

INTERPRETATIONS:

(a) Armored ground vehicles, for purposes of Paragraph (a):

(1) Are ground vehicles that have integrated, fully armored hulls or cabs, or

(2) Are ground vehicles on which add-on armor has been installed to provide ballistic protection. Armored vehicles do not include those that are merely capable of being equipped with add-on armor.

(b) Ground vehicles include any vehicle meeting the definitions or control parameters regardless of the surface (e.g., highway, off-road, rail) upon which the vehicle is designed to operate.

(c) Ground vehicles specially designed for military applications that are not described above are subject to the EAR in accordance with Parts 730-774 of Title 15, CFR under ECCN 0A606, including any unarmed ground vehicles, regardless of origin or designation, manufactured

Table 9. Ground Vehicles, Continued

before 1956 and unmodified since 1955. Modifications made to incorporate safety features required by law, are cosmetic (e.g., different paint, repositioning of bolt holes), or that add parts or components otherwise available before 1956 are considered unmodified for the purposes of this paragraph. ECCN 0A606 also includes unarmed vehicles derived from otherwise EAR99 civilian vehicles that have been modified or otherwise fitted with materials to provide ballistic protection and that do not have reactive or electromagnetic armor. (d) Reactive armor employs explosives, propellants, or other materials between plates for the purpose of enhancing plate motion during a ballistic event or otherwise defeating the penetrator.

Table 10. Aircraft and Related Articles

Description of items for DEMIL coding	DEMIL Code
Part 1. Aircraft and Related Articles described in USML Category VIII	
(a) Aircraft, whether manned, unmanned, remotely piloted, or optionally piloted:	
♦ (1) Bombers.	C
♦ (2) Fighters, fighter bombers, and fixed wing attack aircraft.	C
♦ (3) Turbofan- or turbojet-powered trainers used to train pilots for fighter, attack, or bomber aircraft.	C
♦ (4) Attack helicopters.	C
♦ (5) UAVs incorporating or specially designed to incorporate a defense article.	C
♦ (6) Reserved.	N/A
♦ (7) Aircraft specially designed to incorporate a defense article, for the purpose of performing an intelligence, surveillance, and reconnaissance function.	C
♦ (8) Aircraft specially designed to incorporate a defense article for the purpose of performing an electronic warfare function, airborne warning and control aircraft, or aircraft specially designed to incorporate a defense article for the purpose of performing command, control, and communications.	C
(9) Aircraft specially designed to incorporate a defense article for the purpose of performing an air refueling function.	C
(10) Target drones.	C
(11) Reserved.	N/A
(12) Aircraft capable of being refueled in flight including hover-in-flight refueling.	C
(13) Reserved.	N/A
(14) Aircraft with a roll-on and roll-off ramp, capable of airlifting payloads over 35,000 pounds to ranges over 2,000 nautical miles (nmi) without being refueled in-flight, and landing onto short or unimproved airfields, other than L-100 and LM-100J.	C

Table 10. Aircraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
♦ (15) Aircraft not listed in Paragraphs (a)(1) through (a)(14).	
a. U.S.-origin aircraft that bear an original military designation of A, B, E, F, K, M, P, R, or S.	C
b. Foreign-origin aircraft specially designed to provide functions equivalent to those of the aircraft listed in Paragraph (a)(15)(a).	C
(16) Aircraft that are armed or are specially designed to be used as a platform to deliver munitions or otherwise destroy targets (e.g., firing lasers, launching rockets, firing missiles, dropping bombs, or strafing).	C
(b) Reserved.	N/A
(c) Reserved.	N/A
(d) Launching and recovery equipment specially designed to allow an aircraft described in Paragraph (a) to take off or land on a vessel described in Table 8 Part 1 Paragraphs (a) through (c).	D
(e) Reserved.	N/A
(f) Developmental aircraft and specially designed parts, components, accessories, and attachments funded by the DoD.	C
(g) Reserved.	N/A
(h) Aircraft parts, components, accessories, attachments, associated equipment, and systems.	
(1) Parts, components, accessories, and attachments specially designed for the following U.S.-origin aircrafts: The B-1B, B-2, B-21, F-15SE, F/A-18 E/F, EA-18G, F-22, F-35, and future variants thereof; or the F-117 or U.S. Government technology demonstrators, and not common to other aircraft. For example, parts, components, accessories and attachments of the F-15SE or F/A-18 E/F that are common to earlier models, not listed in paragraph (h)(1), are subject to the EAR, and therefore will be listed in Part 2 of this Table unless listed in paragraphs (h)(2) through (29).	D
(2) Rotorcraft gearboxes with internal pitch line velocities exceeding 20,000 feet per minute and operating 30 minutes with loss of lubrication without an emergency or auxiliary lubrication system and specially designed parts and components.	D
(3) Tail boom folding systems, stabilator folding systems, or automatic rotor blade folding systems, and specially designed parts and components.	D
(4) Wing folding systems and specially designed parts and components.	D

Table 10. Aircraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code

(5) On-aircraft arresting gear (e.g. tail hooks and drag chutes) and specially designed parts and components.	D
(6) Bomb racks, missile launchers, missile rails, weapon pylons, pylon-to launcher adapters, UAV launching systems, external stores support systems for ordnance or weapons, and specially designed parts and components	D
(7) Damage or failure-adaptive flight control systems that do not consist solely of redundant internal circuitry specially designed for aircraft described in this table.	D
(8) Threat-adaptive autonomous flight control systems.	D
(9) Non-surface-based flight control systems and effectors (e.g., thrust vectoring from gas ports other than main engine thrust vector).	D
(10) Radar altimeters with output power management low probability of intercept (LPI) or signal modulation (i.e., frequency hopping, chirping, direct sequence-spectrum spreading) LPI capabilities.	D
(11) Air-to-air refueling systems and hover-in-flight refueling systems and specially designed parts and components.	D
(12) UAV flight control systems and vehicle management systems with swarming capability (i.e., UAVs interact with each other to avoid collisions and stay together, or, if weaponized, coordinate targeting).	D
(13) Reserved.	N/A
(14) Lift fans, clutches, and roll posts for short take-off, vertical landing aircraft and specially designed parts and components for such lift fans and roll posts.	D
(15) Integrated helmets incorporating optical sights or slewing devices, which include the ability to aim, launch, track, or manage munitions (e.g., helmet mounted cueing systems, joint helmet mounted cueing systems, helmet mounted displays, display and sight helmets and specially designed parts, components, accessories, and attachments.	D
(16) Fire control computers, stores management systems, armaments control processors, aircraft-weapon interface units and computers (e.g., anti-radiation guided missile 88 high-speed anti-radiation missile aircraft launcher interface computer).	D
(17) Mission computers, vehicle management computers, and integrated core processers specially designed for aircraft described in this table or in ECCN 9A610 in Part 2.	D
(18) Drive systems and flight control systems specially designed to function after impact of a 7.62 mm or larger projectile.	D

Table 10. Aircraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(19) Thrust reversers specially designed to be deployed in flight for aircraft described in this table or in ECCN 9A610 in Part 2.	D
♦ (20) Any part, component, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D
(21) Reserved.	N/A
(22) Reserved.	N/A
(23) Reserved.	N/A
(24) Reserved.	N/A
(25) Reserved	N/A
(26) Reserved.	N/A
(27) Variable speed gearboxes capable of varying output speed by 50 percent or greater and providing power to rotors, proprotors, propellers, propfans, or liftfans; and specially designed parts and components.	D
(28) Electrical power or thermal management systems integrated with an engine listed in Table 21 having any of the following:	D
a. Electrical power generators that provide greater than 300 kilowatts (kW) of electrical power (per generator) with gravimetric power densities exceeding 2kW/pound:	
b. Heat exchangers that exchange 60 kW/K-m3 or 1 kW/K of heat or greater into the gas turbine engine flow path; or	
c. Direct-cooling thermal electronic package heat exchangers that transfers 20kW of heat or greater at 100W/cm2 or greater.	
(29) The following, if specially designed for the B-1B, B-2, B-21, F-15SE, F/A-18 E/F, EA-18G, F-22, F-35, and future variants thereof; or the F-117 or U.S. Government technology demonstrators.	
a. Wind tunnel and other scale test models.	D
b. Full scale iron bird ground rigs used to test major aircraft systems.	D
c. Autonomic logistics information system.	D

Table 10. Aircraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
d. Jigs, locating fixtures, templates, gauges, molds, dies, and caul plates, for production of airframe parts and components.	D
(i) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(j) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 9A610 Military aircraft and related commodities other than those listed in 9A991.a.	
(a) Military aircraft that are not listed in Part 1 specially designed for a military use. This includes the LM–100J aircraft and any aircraft to the extent they were specially designed for a military use and are not listed in Part 1: trainer aircraft; cargo aircraft; utility fixed wing aircraft; military helicopters; observation aircraft; military non-expansive balloons and other lighter than air aircraft and unarmed military aircraft, regardless of origin or designation.	C
(b) L100 aircraft manufactured before 2013.	C
(c) to (d) Reserved.	N/A
(e) Mobile aircraft arresting and engagement runway systems for aircraft in this table.	D
(f) Pressure refueling equipment and equipment that facilitates operations in confined areas, specially designed for aircraft listed in this table.	C
(g) Aircrew life support equipment, aircrew safety equipment and other devices for emergency escape from aircraft described by either Part 1 or Part 2.	D
(h) Parachutes, paragliders, complete parachute canopies, harnesses, platforms, electronic release mechanisms specially designed for use with aircraft described by either Paragraph (a), Part 1 or Paragraph (a) of ECCN 9A610 in Part 2 and equipment specially designed for military high altitude parachutists, such as suits, special helmets, breathing systems, and navigation equipment.	D
(i) Controlled opening equipment or automatic piloting systems designed for parachuted loads.	D
(j) Ground effect machines, including surface effect machines and air cushion vehicles, specially designed for use by a military.	C
(k) through (s) Reserved.	N/A

Table 10. Aircraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(t) Composite structures, laminates, and manufactures thereof specially designed for UAVs described in Paragraph (a), Part 1 with a range equal to or greater than 300 km.	Q
(u) Apparatus and devices specially designed for the handling, control, activation, and non-ship-based launching of UAVs or drones described by either Paragraph (a), Part 1 or ECCN 9A610, Paragraph (a), Part 2 and capable of a range equal to or greater than 300 km.	D
(v) Radar altimeters designed or modified for use in UAVs or drones described by either Paragraph (a), Part 1 or ECCN 9A610, Paragraph (a), Part 2 and capable of delivering at least 500 kilograms payload to a range of at least 300 km.	D
(w) (1) Pneumatic, hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire systems and fly-by-light systems) and attitude control equipment designed or modified for UAVs or drones described by either Paragraph (a), Part 1 or ECCN 9A610, Paragraph (a), Part 2 and capable of delivering at least 500 kilograms payload to a range of at least 300 km. (2) Flight control servo valves, designed or modified for the systems in 9A610(w)(1) and designed or modified to operate in a vibration environment greater than 10g rms over the entire range between 20Hz and 2 kHz.	D D
(x) Specially designed parts, components, accessories, and attachments that are for an item listed in this ECCN or in Part 1 and that are not listed in Paragraph (y), Part 2 and not listed Paragraph (h)(1), Part 1.	Q
(y) Specific parts, components, accessories, and attachments specially designed for an item listed in this ECCN or in Part 1, or in Table 21, Part 2, ECCN 9A619.	
(1) Aircraft tires.	A
(2) Analog gauges and indicators.	A
(3) Audio selector panels.	A
(4) Check valves for hydraulic and pneumatic systems.	A
(5) Crew rest equipment.	A
(6) Ejection seat mounted survival aids.	A
(7) Energy dissipating pads for cargo (for pads made from paper or cardboard).	A
(8) Fluid filters and filter assemblies.	A
(9) Galleys.	A
(10) Fluid hoses, straight and unbent lines, fittings, couplings, clamps, and brackets.	A

Table 10. Aircraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(11) Lavatories.	A
(12) Life rafts.	A
(13) Magnetic compass, magnetic azimuth detector.	A
(14) Medical litter provisions.	A
(15) Cockpit or cabin mirrors.	A
(16) Passenger seats including palletized seats.	A
(17) Potable water storage systems.	A
(18) Public address systems.	A
(19) Steel brake wear pads (does not include sintered mix or carbon/carbon materials).	A
(20) Underwater locator beacons.	A
(21) Urine collection bags, pads, cups, pumps.	A
(22) Windshield washer and wiper systems.	A
(23) Filtered and unfiltered cockpit panel knobs, indicators, switches, buttons, and dials.	A
(24) Lead-acid and nickel-cadmium batteries	A
(25) Propellers, propeller systems, and propeller blades used with reciprocating engines.	A
(26) Fire extinguishers.	A
(27) Flame and smoke/carbon dioxide detectors.	A
(28) Map cases.	A
(29) Military aircraft that were first manufactured from 1946 to 1955 that do not incorporate defense articles listed or otherwise described on the USML, unless the items are required to meet safety or airworthiness standards of a Wassenaar Arrangement Participating State (found on website www.wassenaar.org); and do not incorporate weapons listed or otherwise described on the USML in accordance with Part 121.1 of Title 22, CFR, unless inoperable and incapable of being returned to operation.	A
(30) Parts, components, accessories, and attachments, other than electronic items or navigation equipment, for use in or with an item described in Paragraph (h).	A
(31) Identification plates.	A
(32) Fluid manifolds.	A
Description of items for DEMIL coding	**DEMIL Code**
ECCN 9B610	**Test, inspection, and production equipment and related commodities specially designed for the development or production of commodities listed in ECCN 9A610 or Part 1 USML Category VIII.**

Table 10. Aircraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(a) Test, inspection, and production equipment specially designed for the production, development, repair, overhaul, or refurbishment of commodities listed in ECCN 9A610 in Part 2 or Part 1, and parts, components, accessories, and attachments specially designed.	C
(b) Environmental test facilities designed for the certification, qualification, or testing of commodities listed in ECCN 9A610 in Part 2 or Part 1 and parts, components, accessories, and attachments specially designed.	C
(c) Production facilities designed or modified for UAVs or drones that are described by either Paragraph (a), Part 1 or for Paragraph (a) ECCN 9A610 and capable of a range equal to or greater than 300 km.	C
ECCN 9C610	**Materials specially designed for items described by Part 1 or Part 2 ECCN 9A610 not elsewhere specified in Tables 3 through 23 or the CCL.**
(a) Materials not elsewhere specified in the CCL or Part 1 of Tables 3 through 23 and specially designed for commodities listed in this table (except paragraph (y)).	Q
(b) Reserved.	N/A
INTERPRETATIONS: Aircraft specially designed for military applications that are not described in Paragraph (a) of Part 1 of this table are subject to the EAR in accordance with Parts 730-774 of Title 15, CFR and described in ECCN 9A610 as Part 2, including any unarmed military aircraft, regardless of origin or designation, manufactured before 1956 and unmodified since manufacture. Modifications made to incorporate safety of flight features or other Federal Aviation Administration or National Transportation Safety Board modifications such as transponders and air data recorders are considered unmodified for the purposes of this paragraph. Aircraft with modifications made to incorporate safety of flight features or other Federal Aviation Administration or National Transportation Safety Board modifications such as transponders and air data recorders are unmodified for the purposes of paragraph (a) of Part 2 of this table. Paragraph (a) of Part 2 of this table does not control military aircraft that: a. Were first manufactured before 1946; b. Do not incorporate defense articles listed or otherwise described on the USML, unless the items are required to meet safety or airworthiness standards of a Wassenaar Arrangement Participating State; and c. Do not incorporate weapons enumerated or otherwise described on the USML, unless inoperable and incapable of being returned to operation.	

Table 11. Military Training Equipment

		
Description of items for DEMIL coding		**DEMIL Code**
Part 1. Military Training Equipment described in USML Category IX		
(a) Training equipment.		
(1) Ground, surface, submersible, space, or towed airborne targets that:		
a. Have an infrared, radar, acoustic, magnetic, or thermal signature that mimic a specific defense article, other item, or specific person; or		C
b. Are instrumented to provide hit or miss performance information for defense articles described in Tables 3-23.		C
(2) Devices that are mockups of articles listed on the USML used for maintenance training or disposal training for ordnance in Part 1 of Tables 5, 6, and 7 that reveal technical data or contain parts, components, accessories, or attachments described in the USML.		C
(3) Air combat maneuvering instrumentation and ground stations.		C
(4) Physiological flight trainers for fighter aircraft or attack helicopters.		C
(5) Radar trainers specially designed for training on radar described in Part 1 of Table 13.		C
(6) Training devices specially designed to be attached to a crew station, mission system, or weapon of an article controlled on the USML.		C
(7) Anti-submarine warfare trainers.		C
(8) Missile launch trainers.		C
(9) Radar target generators.		C
(10) Infrared scene generators.		C
♦ (11) Any training device that:		
a. Is classified.		P
b. Contains classified software.		P
c. Is unclassified but being developed using classified information.		D

Table 11. Military Training Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(b) Simulators:	
(1) System specific simulators that replicate the operation of an individual crew station, a mission system, or a weapon of an end item that is described in Tables 3-23.	C
(2) Reserved.	N/A
(3) Reserved.	N/A
(4) Software and associated databases.	N/A
♦ (5) Simulators that:	
a. Are classified.	P
b. Contain classified software.	P
c. Are being developed using classified information.	D
(c) Reserved.	N/A
(d) Reserved.	N/A
(e) Decals, labels, and technical manuals containing technical data directly related to the items listed described as either:	
(1) Classified or	P
(2) Unclassified.	D
(f) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 0A614	**Military training equipment.**
(a) Equipment specially designed for military training that is not listed or otherwise described in Part 1.	Q
(b) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments that are for an item described in Paragraph (a) or a defense article in Part 1.	Q

Table 11. Military Training Equipment, Continued

Description of items for DEMIL coding		DEMIL Code
ECCN 0B614	**Test, inspection, and production equipment for military training equipment and specially designed parts, components, accessories and attachments**	
(a) Test, inspection, and other production equipment specially designed for the development, production, repair, overhaul, or refurbishing of items described in ECCN 0A614 of Part 2 or articles listed or otherwise described in Part 1.		Q
(b) through (w) Reserved.		N/A
(x) Parts, components, accessories, and attachments that are specially designed for an item described for ECCN 0B614 in Paragraph (a), Part 2.		Q
INTERPRETATIONS: Parts, components, accessories, or attachments of a simulator in this table that are common to the system or end item being simulated are contained in the table of the simulated system or simulated end item. ECCN 0A614 includes operational flight trainers, radar target trainers, flight simulators for aircraft classified under ECCN 9A610, Paragraph (a), Part 2, human-rated centrifuges, radar trainers for radars classified under ECCN 3A611, Part 2 of Table 13, instrument flight trainers for military aircraft, navigation trainers for military items, target equipment, armament trainers, military pilotless aircraft trainers, mobile training units and training equipment for ground military operations.		

Table 12. Personal Protective Equipment

Description of items for DEMIL coding	DEMIL Code
Part 1. Personal Protective Equipment described in USML Category X	
(a) Personal protective equipment:	
(1) Body armor.	D
(2) Personal protective clothing, equipment, or face paints specially designed to protect against or reduce detection by radar, infrared, or other sensors at wavelengths greater than 900 nanometers (nm).	D
(3) Reserved.	N/A
(4) Reserved.	N/A
(5) Integrated helmets, not specified in Paragraph (h)(15), Part 1 of Table 10 or Part 1 of Table 14, incorporating optical sights or slewing devices, which include the ability to aim, launch, track, or manage munitions.	D
(6) Helmets and helmet shells.	D
(7) Goggles, spectacles, or visors, employing other than common broadband absorptive dyes and ultraviolet inhibitors as a means of protection (e.g., narrow band filters or dyes or broadband limiters or coatings with high visible transparency), with optical density greater than 3 that protect against:	D
a. Visible (in-band) laser wavelengths.	D
b. Thermal flashes associated with nuclear detonations, or	D
c. Near infrared or ultraviolet (out of-band) laser wavelengths.	D
(8) Developmental personal protective equipment and specially designed parts, components, accessories, and attachments, developed for the DoD via contract or other funding authorization.	D
(b) Reserved.	N/A
(c) Reserved.	N/A
(d) Parts, components, assemblies, and associated equipment for the personal protective equipment described in this part:	

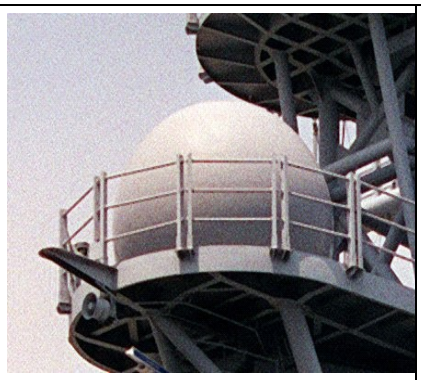
Table 12. Personal Protective Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(1) Ceramic or composite plates.	D
(2) Lenses, substrates, or filters specially designed for the items described in Paragraph (a)(7).	D
(3) Materials and coatings specially designed for the articles covered in Paragraph (a)(7) with optical density greater than 3:	
a. Narrowband absorbing dyes.	D
b. Broadband optical switches or limiters (i.e., nonlinear material, tunable or switchable agile filters, optical power limiters, near infrared interference based filters).	D
c. Narrowband interference based notch filters (i.e., multi-layer dielectric coatings, rugate, holograms or hybrid interference with dye) protecting against multiple laser wavelength and having high visible band transparency.	D
♦ (4) Any component, part, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D
(e) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(f) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 1A613	**Armored and protective equipment and related commodities.**
(a) Armored plate specially designed for military use and not described in Part 1 of Tables 3 to 23.	D
(b) Shelters specially designed to:	
(1) Provide ballistic protection for military systems; or	D
(2) Protect against nuclear, biological, or chemical contamination.	D
(c) Military helmets (other than conventional military steel helmets) and ballistic helmet shells.	D

Table 12. Personal Protective Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(d) Body armor and protective garments:	
(1) Soft body armor and protective garments manufactured to military standards or specifications, or to their equivalents, that provide ballistic protection.	D
(2) Hard body armor plates that provide ballistic protection.	D
(e) Atmospheric diving suits specially designed for rescue operations for submarines described in the USML or the CCL.	Q
(f) Other personal protective equipment specially designed for military applications not described in the USML, not elsewhere controlled on the CCL.	Q
(g) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments that are for an item listed in this ECCN or a defense article in Part 1 and not listed in Paragraph (y), Part 2.	Q
(y) Other commodities:	
(1) Conventional military steel helmets.	A
ECCN 1B613	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 1A613 or USML Category X.**
(a) Test, inspection, and production equipment, not described in Paragraph (c), Part 1, that is specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 1A613 and listed in this table.	Q
(b) Plasma pressure compaction equipment specially designed for the production of ceramic or composite body armor plates described in ECCN 1A613 in Part 2 or Part 1.	Q

Table 13. Military Electronics


Description of items for DEMIL coding	DEMIL Code
Part 1. Military electronics described in USML Category XI	
♦ (a) Electronic equipment and systems not included in Part 1 of Table 14:	
♦ (1) Underwater hardware, equipment, or systems:	
a. Active or passive acoustic array sensing systems or acoustic array equipment capable of real-time processing that survey or detect and also track, localize (e.g., determine range and bearing), classify, or identify, surface vessels, submarines, other undersea vehicles, torpedoes, or mines, having:	D
1. Multi-static capability;	
2. Operating frequency less than 20 kilohertz (kHz); or	
3. Operating bandwidth greater than 10 kHz.	
b. Underwater single acoustic sensor system that distinguishes non-biologic tonals and locates the origin of the sound.	D
c. Non-acoustic systems that survey or detect and also track, localize (e.g., determine range and bearing), classify, or identify, surface vessels, submarines, other undersea vehicles, torpedoes, or mines.	D
d. Acoustic modems, networks, and communications equipment with real-time adaptive compensation or employing LPI of an underwater modem to assess the water conditions to select the best algorithm to receive and transmit data. An underwater modem with the capability to assess the water conditions to select the best algorithm to receive and transmit data is considered adaptive compensation.	D
e. Low frequency or very low frequency electronic modems, routers, interfaces, and communications equipment, specially designed for submarine communications.	D

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
f. Autonomous systems and equipment that enable cooperative sensing and engagement by fixed (bottom mounted or seabed) or mobile autonomous underwater vehicles.	D
♦ (2) Underwater acoustic countermeasures or counter-countermeasures systems or equipment.	D
♦ (3) Radar systems and equipment:	
a. Airborne radar that maintains positional state of an object or objects of interest, other than weather phenomena, in a received radar signal through time;	D
b. Synthetic aperture radar incorporating image resolution less than (better than) 0.3 meter, or incorporating coherent change detection with geo-registration accuracy less than (better than) 0.3 meter, not including concealed object detection equipment operating in the frequency range from 30 gigahertz (GHz) to 3,000 GHz and having a spatial resolution of 0.1 milliradians up to and including 1 milliradian at a standoff distance of 100 meters;	D
c. Inverse synthetic aperture radar;	D
d. Radar that geodetically-locates (i.e., geodetic latitude, geodetic longitude, and geodetic height) with a target location error 50 less than or equal to 10 meters at ranges greater than 1 km;	D
e. Any ocean surveillance radar with an average-power-aperture product of greater than 50 Wm^2;	D
f. Any ocean surveillance radar that transmits a waveform with an instantaneous bandwidth greater than 100 megahertz (MHz) and has an antenna rotation rate greater than 60 revolutions per minute;	D
g. Air surveillance radar with free space detection of 1 square meter radar cross section (RCS) target at 85 nmi or greater range, scaled to RCS values as RCS to the 1⁄4 power;	D
h. Air surveillance radar with free space detection of 1 square meter RCS target at an altitude of 65,000 feet and an elevation angle greater than 20 degrees (e.g., counter-battery);	D
i. Air surveillance radar with multiple elevation beams, phase or amplitude monopulse estimation, or 3D height-finding;	D
j. Air surveillance radar with a beam solid angle less than or equal to 16 degrees squared that performs free space tracking of 1 square meter RCS target at a range greater or equal to 25 nmi with revisit rate greater or equal to 1⁄3 Hz;	D

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
k. Instrumentation radar for anechoic test facility or outdoor range that maintains positional state of an object of interest in a received radar signal through time or provides measurement of RCS of a static target less than or equal to minus 10 RCS of target in decibels, or RCS of a dynamic target;	D
l. Radar incorporating pulsed operation with electronics steering of transmit beam in elevation and azimuth;	D
m. Radar with mode(s) for ballistic tracking or ballistic extrapolation to source of launch or impact point of articles listed in Part 1 of Tables 5, 6, or 17;	D
n. Active protection radar and missile warning radar with mode(s) implemented for detection of incoming munitions;	D
o. Over the horizon high frequency sky-wave (ionosphere) radar.	D
p. Radar that detects a moving object through a physical obstruction at distance greater than 0.2 meter from the obstruction;	D
q. Radar having moving target indicator or pulse-Doppler processing where any single Doppler filter provides a normalized clutter attenuation of greater than 60 decibel (dB);	D
r. Radar having electronic protection or electronic counter-countermeasures other than manual gain control, automatic gain control, radio frequency selection, constant false alarm rate, and pulse repetition interval jitter;	D
s. Radar employing electronic attack mode(s) using the radar transmitter and antenna;	D
t. Radar employing electronic support mode(s) (i.e., the ability to use a radar system for electronic support purposes in one or more of the following: as a high-gain receiver, as a wide-bandwidth receiver, as a multi-beam receiver, or as part of a multi-point system);	D
u. Radar employing non-cooperative target recognition (i.e., the ability to recognize a specific platform type without cooperative action of the target platform);	D
v. Radar employing automatic target recognition (i.e., recognition of target using structural features (e.g., tank versus car) of the target with system resolution better than (less than) 0.3 meter);	D
w. Radar that sends interceptor guidance commands or provides illumination keyed to an interceptor seeker;	D
x. Radar employing waveform generation for LPI other than frequency modulated continuous wave with linear ramp modulation;	D
y. Radar that sends and receives communications;	D

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
z. Radar that tracks or discriminates ballistic missile warhead from debris or countermeasures;	D
aa. Bi-static or multi-static radar that exploits greater than 125 kHz bandwidth and is lower than 2 GHz center frequency to passively detect or track using radio frequency (RF) transmissions (e.g., commercial radio, television stations);	C
ab. Radar target generators, projectors, or simulators, specially designed for radars described in this table; or	D
ac. Radar and laser radar systems specially designed for defense articles in Paragraph (a)(1), Part 1, Table 6 or Paragraphs (a)(5), (a)(6), or (a)(13), Part 1, Table 10.	D
♦ (4) Electronic combat (i.e., electronic warfare) systems and equipment:	
a. Electronic support systems and equipment that search for, intercept and identify, or locate sources of intentional or unintentional electromagnetic energy specially designed to provide immediate threat detection, recognition, targeting, planning, or conduct of future operations;	D
b. Systems and equipment that detect and automatically discriminate acoustic energy emanating from weapons fire (e.g., gunfire, artillery, rocket propelled grenades, or other projectiles), determining location or direction of weapons fire in less than 2 seconds from receipt of event signal, and able to operate on-the-move (e.g., operating on personnel, land vehicles, sea vessels, or aircraft while in motion); or	D
c. Systems and equipment specially designed to introduce extraneous or erroneous signals into radar, infrared based seekers, electro-optic based seekers, radio communication receivers, navigation receivers, or that otherwise hinder the reception, operation, or effectiveness of adversary electronics (e.g., active or passive electronic attack, electronic countermeasure, electronic counter-countermeasure equipment, jamming, and counter jamming equipment).	D
♦ (5) Command, control, and communications; command, control, communications, and computers; command, control, communications, computers, intelligence, surveillance, and reconnaissance, and identification systems or equipment:	
a. Are specially designed to integrate, incorporate, network, or employ defense articles that are described in this table that do not use the term specially designed.	D
b. Incorporate U.S. Government identification friend or foe modes 4 or 5.	D

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
c. Implement active or passive electronic counter-countermeasures used to counter acts of communication disruption (e.g., radios that incorporate HAVE QUICK I/II, single channel ground and airborne radio system, Second Generation Antijam Tactical Ultrahigh Frequency Radio for North Atlantic Treaty Organization).	D
d. Specially designed, rated, certified, or otherwise specified or described to be in compliance with U.S. Government National Security Telecommunications and Information Systems Security Advisory Memorandum TEMPEST 1–92 standards or Committee on National Security Systems Advisory Memorandum TEMPEST 01–02, to implement techniques to suppress compromising emanations of information bearing signals.	D
e. Transmit voice or data signals specially designed to elude electromagnetic detection.	D
(6) Reserved.	N/A
(7) Developmental electronic equipment or systems funded by the DoD.	C
(8) Unattended ground sensor systems or equipment having all of the following: a. Automatic target detection. b. Automatic target tracking, classification, recognition, or identification. c. Self-forming or self-healing networks. d. Self-localization for geo-locating targets.	D
(9) Electronic sensor systems or equipment for non-acoustic antisubmarine warfare or mine warfare (e.g., magnetic anomaly detectors, electric-field, electromagnetic induction).	D
(10) Electronic sensor systems or equipment for detection of concealed weapons, having a standoff detection range of greater than 45 meters for personnel or detection of vehicle-carried weapons, not including concealed object detection equipment operating in the frequency range from 30 GHz to 3,000 GHz and having a spatial resolution of 0.1 milliradians up to and including 1 milliradians at a standoff distance of 100 m.	D
(11) Test sets specially designed for testing defense articles described in Paragraphs (a)(3), (a)(4), (a)(5), or (b).	D
(12) Direction finding equipment for determining bearings to specific electromagnetic sources or terrain characteristics specially designed for defense articles in Paragraph (a)(1), Part 1 of Table 6 or Paragraphs (a)(5), (a)(6), or (a)(13), Part 1 of Table 10.	D

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
♦ (b) Electronic systems or equipment, not elsewhere described in Tables 3-23, specially designed for intelligence purposes that collect, survey, monitor, or exploit the electromagnetic spectrum (regardless of transmission medium), or for counteracting such activities.	D
(c) Parts, components, accessories, attachments, and associated equipment:	
(1) Application specific integrated circuits (ASICs) and programmable logic devices (PLD) programmed for defense articles in this table.	D
(2) Printed circuit boards and populated circuit card assemblies for which the layout is specially designed for defense articles in this table.	D
(3) Multichip modules for which the pattern or layout is specially designed for defense articles in this table.	D
(4) Transmit or receive modules or transmit modules that have any two perpendicular sides, with either length d (in cm) equal to or less than 15 divided by the lowest operating frequency in GHz: [d≤15cm*GHz/frequency in GHz] With an electronically variable phase shifter or phasers that are a monolithic microwave integrated circuit (MMIC) or incorporate a MMIC or discrete RF power transistor.	D
(5) High-energy storage capacitors with a repetition rate of 6 discharges or more per minute and full energy life greater than or equal to 10,000 discharges, at greater than 0.2 amps per joule peak current, that have any of the following:	D
a. Volumetric energy density greater than or equal to 1.5 joules per cubic centimeter; or	
b. Mass energy density greater than or equal to 1.3 kilojoules per kilogram.	
(6) Radio frequency circulators of any dimension equal to or less than one quarter wavelength of the highest operating frequency and isolation greater than 30 dB.	D
(7) Polarimeter that detects and measures polarization of RF signals within a single pulse.	D
(8) Digital RF memory with RF instantaneous input bandwidth greater than 400 MHz, and 4 bit or higher resolution whose output signal is a translation of the input signal (e.g., changes in magnitude, time, frequency) and specially designed parts and components.	D
(9) Vacuum electronic devices:	

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
a. Multiple electron beam or sheet electron beam devices rated for operation at frequencies of 16 GHz or above, and with a saturated power output greater than 10,000 W (70 decibel-milliwatts (dBm)) or a maximum average power output greater than 3,000 W (65 dBm); or	D
b. Cross-field amplifiers with a gain of 15 dB to 17 dB or a duty factor greater than 5 percent.	D
(10) Antenna and specially designed parts and components that:	
a. Employ four or more elements, electronically steer angular beams, independently steer angular nulls, create angular nulls with a null depth greater than 20 dB, and achieve a beam switching speed faster than 50 milliseconds;	D
b. Form adaptive null attenuation greater than 35 dB with convergence time less than one second;	D
c. Detect signals across multiple RF bands with matched left hand and right hand spiral antenna elements for determination of signal polarization; or	D
d. Determine signal angle of arrival less than two degrees (e.g., interferometer antenna).	D
(11) Radomes or electromagnetic antenna windows that:	
a. Incorporate radio frequency selective surfaces;	D
b. Operate in multiple non-adjacent frequency bands for radar applications;	D
c. Incorporate a structure that is specially designed to provide ballistic protection from bullets, shrapnel, or blast;	D
d. Have a melting point greater than 1,300° Celsius and maintain a dielectric constant less than 6 at temperatures greater than 500° Celsius;	D
e. Are manufactured from ceramic materials with a dielectric constant less than 6 at any frequency from 100 MHz to 100 GHz;	D
f. Maintain structural integrity at stagnation pressures greater than 6,000 pounds per square foot; or	D
g. Withstand combined thermal shock greater than 4.184 × 106 joules per square meter accompanied by a peak overpressure of greater than 50 kilopascal.	D
(12) Underwater sensors (acoustic vector sensors, hydrophones, or transducers) or projectors, specially designed for systems described in Paragraphs (a)(1) and (a)(2), having any of the following:	D
a. A transmitting frequency below 10 kHz for sonar systems.	

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
b. Sound pressure level exceeding 224 dB (reference 1 megapascal (mPa) at 1 meter) for equipment with an operating frequency in the band from 10 kHz to 24 kHz.	
c. Sound pressure level exceeding 235 dB (reference 1 mPa at 1 meter) for equipment with an operating frequency in the band between 24 kHz and 30 kHz.	
d. Forming beams of less than 1° on any axis and having an operating frequency of less than 100 kHz.	
e. Designed to operate with an unambiguous display range exceeding 5,120 meters.	
f. Designed to withstand pressure during normal operation at depths exceeding 1,000 m and having transducers with any of the following:	
1. Dynamic compensation for pressure.	
2. Incorporating other than lead zirconate titanate as the transduction element.	
(13) Parts or components containing piezoelectric materials which are specially designed for underwater hardware, equipment, or systems described in Paragraph (c)(12).	D
(14) Tuners specially designed for systems and equipment in Paragraphs (a)(4) and (b).	D
(15) Electronic assemblies and components, capable of operation at temperatures in excess of 125° Celsius and specially designed for UAVs or drones described in Part 1 of Table 10, rockets, SLVs, or missiles described in Part 1 of Table 6 capable of achieving a range greater than or equal to 300 km.	D
(16) Hybrid (combined analog and digital) computers specially designed for modeling, simulation, or design integration of systems described in Paragraphs (a)(1), (d)(1), (d)(2), (h)(1), (h)(2), (h)(4), (h)(8), and (h)(9) of Table 6 or Paragraphs (a)(5), (a)(6), or (a)(13) of Part 1, Table 10.	D
(17) Chaff and flare rounds specially designed for the systems and equipment described in Paragraph (a)(4)(c) of Part 1, and parts and components containing materials described in Part 1 of Table 7.	G
(18) Parts, components, or accessories specially designed for a cyber security/information security system or radio, listed in this table that modify its published properties (e.g., frequency range, algorithms, waveforms, CODECs, modulation or demodulation schemes); or	D
♦ (19) Any part, component, accessory, attachment, equipment, or system that:	
a. Is classified.	P

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D
(d) Decals, labels, and technical manuals containing technical data directly related to the items described in Paragraphs (a) through (e) and items described as ECCNs 3A611 or 3B611 in Part 2:	
(1) Classified.	P
(2) Unclassified.	D
(e) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 3A611	**Military electronics.**
(a) Electronic equipment, end items, and systems specially designed for a military application that are not described or otherwise described in either a Part 1 or another Part 2 600 series ECCN item in another table.	D
(b) Reserved.	N/A
(c) Reserved.	N/A
(d) Reserved.	N/A
(e) High frequency surface wave radar that maintains the positional state of maritime surface or low altitude airborne objects of interest in a received radar signal through time.	D
(f) ASICs and PLD that are programmed for 600 series ECCN items.	D
(g) Printed circuit boards and populated circuit card assemblies that are not specifically identified in Paragraph (y) for which the layout is specially designed for 600 series ECCN items.	D
(h) Multichip modules that are not specifically identified in Paragraph (y) for which the pattern or layout is specially designed for 600 series ECCN items.	D
(i) through (w) Reserved.	N/A
(x) Parts, components, accessories, and attachments that are specially designed for a commodity described in this entry or for an article described in Part 1, and not described or described in Part 1 of Tables 3 to 23 or another Part 2 ECCN and not described in Paragraph (y) of this table	Q
(y) Specific parts, components, accessories, and attachments specially designed for a commodity described in a 600 series ECCN or Part 1 Tables 3 to 23.	

Table 13. Military Electronics, Continued

Description of items for DEMIL coding	DEMIL Code
(1) Electrical connectors	A
(2) Electric fans.	A
(3) Heat sinks.	A
(4) Joy sticks.	A
(5) Mica paper capacitors.	A
(6) Microphones.	A
(7) Potentiometers.	A
(8) Rheostats.	A
(9) Electric connector backshells.	A
(10) Solenoids.	A
(11) Speakers.	A
(12) Trackballs.	A
(13) Electric transformers.	A
(14) ASICs and PLD that are programmed for a Part 2 ECCN item described in Tables 3 to 23.	A
(15) Printed circuit boards and populated circuit card assemblies for which the layout is specially designed for an item described in Paragraph (y) of any 600 series ECCN in Tables 3 to 23.	A
(16) Multichip modules for which the pattern or layout is specially designed for an item described in Paragraph (y) of any 600 series ECCN in Tables 3 to 23.	A
(17) Circuit breakers.	A
(18) Ground fault circuit interrupters.	A
(19) Electrical contacts.	A
(20) Electrical guide pins.	A
(21) Filtered and unfiltered mechanical switches.	A
(22) Thumbwheels.	A
(23) Fixed resistors.	A
(24) Electrical jumpers.	A
(25) Grounding straps.	A
(26) Indicator dials.	A
(27) Contactors.	A
(28) Touchpads.	A
(29) Mechanical caps.	A

Table 13. Military Electronics, Continued

Description of items for DEMIL coding		DEMIL Code
(30) Mechanical plugs.		A
(31) Finger barriers.		A
(32) Flip-guards.		A
(33) Identification plates and nameplates.		A
(34) Knobs.		A
(35) Hydraulic, pneumatic, fuel, and lubrication gauges.		A
ECCN 3B611	**Test, inspection, and production commodities for military electronics.**	
(a) Test, inspection, and production end items and equipment specially designed for the development, production, repair, overhaul, or refurbishing of items described in ECCN 3A611 (except ECCN 3A611 Paragraph (y)) or Part 1 that are not explicitly described in Part 1 or described in another 600 series ECCN.		C
(b) through (w) Reserved.		N/A
(x) Parts, components, accessories, and attachments that are specially designed for an item in Paragraph (a) and that are not described on the USML or described in another 600 series ECCN.		Q
ECCN 9A620	**Cryogenic and superconductive equipment**	
(a) Equipment specially designed to be installed in a vehicle for military ground, marine, airborne, or space applications, and capable of operating while in motion and of producing or maintaining temperatures below 103 Kelvin (-170°Celsius).		Q
(b) Superconductive electrical equipment (rotating machinery and transformers) specially designed to be installed in a vehicle for military ground, marine, airborne, or space applications, and capable of operating while in motion.		Q
(c) through (w) Reserved.		N/A
(x) Parts, components, accessories and attachments that are specially designed for an item described in ECCN 9A620.		Q
ECCN 9B620	**Test, inspection, and production commodities for cryogenic and superconductive equipment**	
(a) Test, inspection, and production end items and equipment specially designed for the development, production, repair, overhaul, or refurbishing of items described in ECCN 9A620, Part 2.		Q
(b) Reserved.		N/A

Table 14. Fire Control, Laser, Imaging, and Guidance Equipment



Description of items for DEMIL coding	DEMIL Code
Part 1. Fire Control, Laser, Imaging, and Guidance Equipment described in USML Category XII	
(a) Fire control, aiming, detection, guidance, and tracking systems:	
♦ (1) Fire control systems.	D
♦ (2) Electronic or optical weapon positioning, laying, or spotting systems.	D
♦ (3) Laser spot trackers or laser spot detection, location, or imaging systems, with an operational wavelength shorter than 400 nm or longer than 710 nm and that are for laser target designators or coded target markers listed in Paragraph (b)(1).	D
♦ (4) Bomb sights or bombing computers.	D
♦ (5) Electro-optical systems that automatically detect and locate ordnance launch, blast, or fire.	D
♦ (6) Electro-optical ordnance guidance systems.	D
♦ (7) Missile or ordnance electro-optical tracking systems.	D
♦ (8) Remote wind-sensing systems specially designed for ballistic-corrected aiming.	D
(9) Helmet mounted display (HMD) systems or end items (e.g., combat vehicle crew HMD, mounted warrior HMD, integrated helmet assembly subsystem, drivers head tracked vision system), other than such items controlled in USML Category VIII, that:	D
a. Incorporate or interface (either via wired or wireless connection) with optical sights or slewing devices that aim, launch, track, or manage munitions.	
b. Control infrared imaging systems or end items described in Paragraphs (a) through (d).	
♦ (b) Laser systems and end items:	
(1) Laser target designators or coded target markers that mediate the delivery of ordnance to a target.	D

Table 14. Fire Control, Laser, Imaging, and Guidance and Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(2) Target illumination systems having a variable beam divergence and a laser output wavelength exceeding 710 nm, to artificially light an area to search, locate, or track a target.	D
(3) Laser rangefinders having any of the following:	D
a. Output wavelength of 1064 nm and any Q-switched pulse output.	
b. Output wavelength exceeding 1064 nm and any of the following:	
1. Single or multiple shot(s) within one second ranging capability of 3 km or greater against a standard 2.3 m x 2.3 m North Atlantic Treaty Organization target having 10 percent reflectivity and 23 km atmospheric visibility.	
2. Multiple shot ranging capability at 3 Hz or greater of 1 km or greater against a standard 2.3 m x 2.3 m North Atlantic Treaty Organization target having 10 percent reflectivity and 23 km atmospheric visibility.	
(4) Targeting systems and target location systems, incorporating or specially designed to incorporate both of the following:	D
a. A laser rangefinder.	
b. A defense article listed in Paragraph (d).	
(5) Systems specially designed to use laser energy with an output wavelength exceeding 710 nm for exploiting differential target-background retro-reflectance in order to detect optical or electro-optical equipment (e.g., optical augmentation systems).	D
(6) Light detection and ranging, laser detection and ranging, or range-gated systems, specially designed for a military end user.	D
(7) Developmental lasers or laser systems funded by the DoD via contract or other funding authorization.	D
♦ (c) Imaging systems or end items:	
(1) Binoculars, bioculars, monoculars, goggles, or head or helmet-mounted imaging systems (including video-based articles having a separate near-to-eye display).	D
a. Employing an autogated third generation image intensifier tube or a higher generation image intensifier tube.	
b. Fusing output of an image intensifier tube and an infrared focal plane array having a peak response wavelength greater than 1,000 nm.	
c. Having an infrared focal plane array or infrared imaging camera, and specially designed for a military end user.	
(2) Weapon sights (i.e., with a reticle) or aiming or imaging systems (e.g., clipon), specially designed to mount to a weapon or to withstand weapon shock or recoil, with or without an integrated viewer or display, and also incorporating or specially designed to incorporate any of the following:	D

Table 14. Fire Control, Laser, Imaging, and Guidance and Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
a. An infrared focal plane array having a peak response wavelength exceeding 1,000 nm.	
b. Second generation with luminous sensitivity greater than 350 milliamperes lumens, third generation, or higher generation, image intensifier tubes.	
c. Ballistic computing electronics for adjusting the aim point display.	
d. Infrared laser having a wavelength exceeding 710 nm.	
(3) Electro-optical reconnaissance, surveillance, target detection, or target acquisition systems, specially designed for articles in this table or specially designed for a military end user.	D
(4) Infrared search and track systems having one of the following:	D
a. Airborne or naval systems, that:	
1. Have range performance of 3 km or greater.	
2. Incorporate or are specially designed to incorporate an infrared focal plane array or imaging camera, having a peak response wavelength exceeding 3 microns or greater.	
3. Maintain positional or angular state of a target through time; or	
b. Specially designed for a military end user.	
(5) Distributed aperture systems having a peak response wavelength exceeding 710 nm specially designed for articles in this table or specially designed for a military end user.	D
(6) Infrared imaging systems:	D
a. Mobile reconnaissance, scout, or surveillance systems providing real-time target recognition at ranges greater than 3 km (e.g., long range advanced scout surveillance system, commanders independent sight, horizontal technology integration, SeeSpot, meteorological measuring set).	
b. Airborne stabilized systems specially designed for military reconnaissance (e.g., DB–110, C–B4).	
c. Multispectral imaging systems that provide automated classification or identification of military or intelligence targets or characteristics.	
d. Automated missile detection or warning systems.	
e. Systems hardened to withstand electromagnetic pulse, directed energy, chemical, biological, or radiological threats.	
f. Systems incorporating mechanism(s) to reduce the optical chain signature for optical augmentation.	
g. Persistent surveillance systems with a ground sample distance (GSD) of 0.5 m or better (smaller) at 10,000 ft or higher above ground level and a simultaneous coverage area of 3 square kilometer or greater.	
h. Gimbaled infrared systems:	

Table 14. Fire Control, Laser, Imaging, and Guidance and Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
1. Having a stabilization better (less) than 30 microradians root-mean-square and a turret with a ball diameter of 15 inches or greater. 2. Specially designed for articles in Tables 3 to 23 or specially designed for a military end user.	
(7) Terahertz imaging systems:	D
a. Concealed object detection systems operating in the frequency range from 30 GHz to 3000 GHz, and having a resolution less (better) than 0.1 milliradians at a standoff range of 100 m.	
b. Specially designed for a military end user.	
(8) Systems or equipment, incorporating an ultraviolet or infrared (IR) beacon or emitter, specially designed for Combat Identification.	D
(9) Systems that project radiometrically calibrated scenes at a frame rate greater than 30 Hz directly into the entrance aperture of an electro-optical or infrared sensor listed in this table within either the spectral band exceeding 10 nm but not exceeding 400 nm, or the spectral band exceeding 900 nm but not exceeding 30,000 nm.	D
(10) Developmental electro-optical, infrared, or terahertz systems funded by the DoD.	D
(d) Guidance and navigation systems or end items:	
(1) Guidance or navigation systems (e.g., inertial navigation systems, inertial reference units, attitude and heading reference systems) having any of the following:	D
a. A circular error probability at 50 percent of position error rate less (better) than 0.28 nmi per hour, without the use of positional aiding references.	
b. A heading error or true north determination of less (better) than 0.28 milliradian secant (latitude) (0.016043 degrees secant (latitude)), without the use of positional aiding references.	
c. A circular error probability at 50 percent of position error rate less than 0.2 nmi in an 8 hour period, without the use of positional aiding references.	
d. Meeting or exceeding specified performance at linear acceleration levels exceeding 25g.	
(2) Global navigation satellite system (GNSS) receiving equipment:	D
a. GNSS receiving equipment specially designed for military applications.	

Table 14. Fire Control, Laser, Imaging, and Guidance and Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
b. Global positioning system (GPS) receiving equipment specially designed for encryption or decryption (e.g., Y-Code, M-Code) of GPS precise positioning service signals.	
c. GNSS receiving equipment specially designed for use with an antenna described in Paragraph (c)(10) of Table 13.	
d. GNSS receiving equipment specially designed for use with rockets, missiles, SLVs, drones, or unmanned air vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km.	
(3) GNSS anti-jam systems specially designed for use with an antenna described in Paragraph (c)(10) of Table 13.	D
(4) Mobile relative gravimeters having automatic motion compensation with an in-service accuracy of less (better) than 0.4 milligal.	D
(5) Mobile gravity gradiometers having an accuracy of less (better) than 10 Eotvos squared per radian per second for any component of the gravity gradient tensor, and having a spatial gravity wavelength resolution of 50 m or less.	D
(6) Developmental guidance or navigation systems funded by the DoD.	D
(e) Parts, components, accessories, or attachments:	
(1) Parts and components specially designed for articles described in Paragraph (a)(1) or (a)(5) of this table.	D
(2) Lasers specially designed for articles in Tables 3 to 23.	D
(3) Laser stacked arrays specially designed for articles Tables 3 to 23.	D
(4) Night vision or infrared cameras (e.g., camera core) specially designed for articles in Table 3 to 23.	D
(5) Infrared focal plane arrays specially designed for articles in Tables 3 to 23.	D
(6) Charge multiplication focal plane arrays exceeding 50 milliampere per watt for any wavelength exceeding 760 nm and specially designed for articles described in Part 1 of this table.	D
(7) Second generation and greater image intensifier tubes specially designed for articles in this table, and specially designed parts and components.	D
(8) Parts and components specially designed for articles described in Paragraph (c)(3), (c)(4), (c)(5) or (c)(6)(vi)-(vii).	D
(9) Inertial measurement units specially designed for articles in Tables 3 to 23.	D
(10) GNSS security devices, e.g., selective availability anti-spoofing modules, security modules, and auxiliary output chips.	D

Table 14. Fire Control, Laser, Imaging, and Guidance and Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(11) Accelerometers having a bias repeatability of less (better) than 10 mg and a scale factor repeatability of less (better) than 10 parts per million, or capable of measuring greater than 100,000 g.	D
(12) Gyroscopes or angular rate sensors:	D
a. Having an angle random walk of less (better) than 0.001 degrees per square root hour.	
b. Mechanical gyroscopes or rate sensors having a bias repeatability less (better) than 0.0015 degrees per hour.	
(13) Optical sensors having a spectral filter specially designed for systems or equipment listed in Paragraph (a)(4) of Table 13, or optical sensor assemblies that provide threat warning or tracking for systems or equipment controlled described in Paragraph (a)(4) of Table 13.	D
(14) Infrared focal plane array readout integrated circuits specially designed for articles in Part 1 of this table.	D
(15) Integrated dewar cooler assemblies specially designed for articles in this table, with or without an infrared focal plane array, and specially designed parts and components.	D
(16) Gimbals specially designed for articles listed in this table.	D
(17) Infrared focal plane array Joule-Thomson self-regulating cryostats specially designed for articles described in Tables 3 to 23.	D
(18) Drive, control, signal, or image processing electronics, specially designed for articles described in this table.	D
(19) Near-to-eye displays (e.g., micro-displays) specially designed for articles described in this table.	D
(20) Resonators, receivers, transmitters, modulators, gain media, drive electronics, and frequency converters, specially designed for laser systems described in this table.	D
(21) Two-dimensional infrared scene projector emitter arrays (i.e., resistive arrays) specially designed for infrared scene generators described in Paragraph (a)(10) of Table 13.	D
♦ (22) Any part, component, accessory, attachment, or associated equipment, that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D

Table 14. Fire Control, Laser, Imaging, and Guidance and Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(23) Developmental image intensifier tubes, focal plane arrays, read-out integrated circuits, accelerometers, gyroscopes, angular rate sensors, and inertial measurement units funded by the DoD.	D
(f) See Subpart 120.10 of Title 22, CFR for technical data and Subpart 120.9 of Title 22, CFF for defense services directly related to the defense articles described in Paragraphs (a) through (e) of this table and classified technical data directly related to items controlled in ECCNs 7A611, 7B611, and 7D611. See Subpart 125.4 of Title 22, CFR for exemptions.	D
(g) through (w) Reserved.	N/A
(x) Commodities, software, and technology subject to the EAR used in or with defense articles in this table.	D
Part 2. Military items described in the CCL	
ECCN 7A611	**Military fire control, laser, imaging, and guidance equipment**
(a) Guidance or navigation systems, not elsewhere specified on Part 1 of Tables 3 to 23, that are specially designed for a defense article in Part 1 of Tables 3 to 23 or for a 600 series ECCN item described in Part 2 of Tables 3-23.	D
(b) through (w) Reserved.	N/A
(x) Parts, components, accessories, and attachments, including accelerometers, gyros, angular rate sensors, gravity meters (gravimeters), and inertial measurement units, that are specially designed for defense articles described in Part 2 of Tables 3 to 23, and that are not:	Q
(1) Enumerated or controlled in the USML or elsewhere within ECCN 7A611.	
(2) Described in ECCNs 6A007, 6A107, 7A001, 7A002, 7A003, 7A101, 7A102 or 7A103.	
(3) Elsewhere specified in Paragraph (y) of ECCN 7A611 or Paragraph (y) of 3A611.	
(y) Reserved.	N/A
ECCN 7B611	**Test, inspection, and production equipment and related commodities specially designed for military guidance and control equipment**
(a) Test, inspection, and production end items and equipment specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in Part 2 ECCN 7A611 (except Paragraph (y) of ECCN 7A611) of this table or commodities in USML Category XII that are not described in Part 1 of this table or Part 2 of Tables 3 to 23.	Q

Table 14. Fire Control, Laser, Imaging, and Guidance and Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(b) Environmental test facilities specially designed for the certification, qualification, or testing of commodities controlled in ECCN 7A611 (except Paragraph (y) of 7A611) or guidance equipment in Part 1 that are not specifically described in Part 1 of this table or Part 2 of Tables 3 to 23.	N/A
(c) Field test equipment specially designed to evaluate or calibrate the operation of systems described in Paragraphs (a), (b), or (c) of Part 1 of this table.	Q
(d) through (w) Reserved.	N/A
(x) Parts, components, accessories, and attachments that are specially designed for a commodity described in this table and that are not described in Part 1 or Part 2 of Tables 3 to 23.	Q

Table 15. Materials and Miscellaneous Articles

Description of items for DEMIL coding	DEMIL Code
Part 1. Materials and Miscellaneous Articles described in USML Category XIII	
(a) Reserved.	N/A
(b) Information security or cybersecurity systems and equipment, cryptographic devices, software, and components:	
(1) Military or intelligence cryptographic (including key management) systems, equipment assemblies, modules, integrated circuits, components, and software (including their cryptographic interfaces) capable of maintaining secrecy or confidentiality of information or information systems, including equipment and software for tracking, telemetry, and control encryption and decryption.	D
(2) Military or intelligence cryptographic (including key management) systems, equipment, assemblies, modules, integrated circuits, components, and software (including their cryptographic interfaces) capable of generating spreading or hopping codes for spread spectrum systems or equipment.	D
(3) Military or intelligence cryptanalytic systems, equipment, assemblies, modules, integrated circuits, components, and software.	D
(4) Military or intelligence systems, equipment, assemblies, modules, integrated circuits, components, and software (including all previous or derived versions) authorized to control access to or transfer data between different security domains as described on the Unified Cross Domain Management Office Control List.	D
(5) Ancillary equipment specially designed for the articles in Paragraphs (b)(1)–(4).	C
(c) Reserved.	N/A
(d) Materials:	
♦ (1) Ablative materials fabricated or semi-fabricated from advanced composites (e.g., silica, graphite, carbon, carbon/carbon, and boron filaments) specially designed for the articles in Table 6 or 17.	D

Table 15. Materials and Miscellaneous Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(2) Carbon/carbon billets and preforms which are reinforced with continuous unidirectional fibers, tows, tapes, or woven cloths in three or more dimensional planes.	D
(e) Armor (e.g., organic, ceramic, metallic) and armor materials:	
(1) Spaced armor.	D
(2) Transparent armor.	D
(3) Transparent ceramic plate greater than 1⁄4 inch-thick and larger than 8 inches x 8 inches, excluding glass, for transparent armor.	D
(4) Non-transparent ceramic plate or blanks, greater than 1⁄4 inches thick and larger than 8 inches x 8 inches for transparent armor. This includes spinel and aluminum oxynitride.	D
(5) Composite armor.	D
(6) Metal laminate armor.	D
(7) Developmental armor funded by the DoD.	D
♦ (f) Any article described in this table that:	
(1) Is classified.	P
(2) Contains classified software.	P
(3) Is unclassified but being developed using classified information.	D
♦ (g) Concealment and deception equipment:	
(1) Polymers loaded with carbonyl iron powder, ferrites, iron whiskers, fibers, flakes, or other magnetic additives having a surface resistivity of less than 5000 Ohms per square and greater than 10 Ohms per square with electrical isotropy of less than 5 percent.	D
(2) Multi-layer camouflage systems specially designed to reduce detection of platforms or equipment in the infrared or ultraviolet frequency spectrums.	D
(3) High temperature (greater than 300 degrees Fahrenheit operation) ceramic or magnetic radar absorbing material specially designed for use on defense articles or military items subject to the EAR in accordance with Parts 730-774 of Title 15, CFR.	D

Table 15. Materials and Miscellaneous Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(4) Broadband (greater than 30 percent bandwidth) lightweight (less than 2 pounds per square foot) magnetic radar absorbing material specially designed for use on defense articles or military items subject to the EAR in accordance with Parts 730-774 of Title 15, CFR.	D
(h) Energy conversion devices:	
(1) Fuel cells specially designed for platforms or soldier systems specified in this table.	D
(2) Thermal engines specially designed for platforms or soldier systems specified in this table.	D
(3) Thermal batteries.	
a. USDOT HazMat rating of 1.4 or higher (e,g, 1.3, 1.2 are higher ratings) are considered “Explosive” (as defined in the Class 1 Definitions of Part 173.50 of Title 49, CFR Class 1 Definitions).	G
b. USDOT HazMat rating of less than 1.4.	F
(4) Thermionic generators specially designed for platforms or soldier systems in Tables 3 through 23.	D
♦ (i) Signature reduction software and technical data:	N/A
(j) Equipment, materials, coatings, and treatments not elsewhere specified:	
♦ (k) Tooling and equipment:	
(1) Tooling and equipment specially designed for production of low observable components.	D
(2) Portable platform signature field repair validation equipment (e.g., portable optical interrogator that validates integrity of a repair to a signature reduction structure).	D
(l) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(m) through (w) Reserved.	N/A

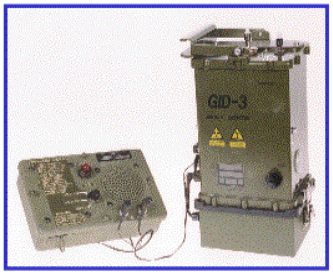
Table 15. Materials and Miscellaneous Articles, Continued

Description of items for DEMIL coding		DEMIL Code
Part 2. Military items described in the CCL		
ECCN 0A617	**Miscellaneous equipment, materials, and related commodities.**	
(a) Reserved.		N/A
(b) Concealment and deception equipment specially designed for military application, including special paints, decoys, smoke, or obscuration equipment and simulators, and parts, components, accessories, and attachments specially designed, not described by Part 1.		Q
(c) Ferries, bridges (other than those described in Part 1 of Table 9 or in ECCN 0A606 in Part 2 of Table 9), and pontoons specially designed for military use.		Q
(d) Test models specially designed for the development of defense articles described in Tables 6, 8, 9, and 10.		Q
(e) Reserved.		N/A
(f) Metal embrittlement agents.		Q
(g) through (x) Reserved.		N/A
(y) Other commodities:		
(1) Specially designed construction equipment for military use, including such equipment specially designed for transport in aircraft described by Paragraph (a), Part 1 of Table 10 or in ECCN 9A610 in Part 2 of Table 10.		A
(2) Specially designed parts, components, accessories, and attachments for commodities in Paragraph (y)(1) of this table, including crew protection kits used as protective cabs.		A
(3) ISO intermodal containers or demountable vehicle bodies (i.e., swap bodies), not elsewhere specified, specially designed or modified for shipping or packing defense articles or items described in Part 2 of Tables 3 to 23. Modified means any structural, electrical, mechanical, or other change that provides a non-military item with military capabilities equivalent to an item specially designed for military use.		A
(4) Specially designed field generators for military use.		A
(5) Specially designed power controlled searchlights and control units for military use, and equipment mounting such units.		A

Table 15. Materials and Miscellaneous Articles, Continued

Description of items for DEMIL coding		DEMIL Code
ECCN 0B617	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 0A617.a or USML Category XIII, and parts, components, accessories, and attachments specially designed.**	
(a) Test, inspection, and production equipment not described by Paragraph (k) of this table, specially designed for the production, development, repair, overhaul, or refurbishing of commodities described in ECCN 0A617 in Part 2 of this table or Part 1 of this table, and parts, components, accessories, and attachments specially designed.		C
(b) Reserved.		N/A
ECCN 0C617	**Miscellaneous materials specially designed for military use.**	
(a) Materials, coatings, and treatments for signature suppression, specially designed for military use to reduce detectability and observability and that are not described in Part 1 or in ECCNs 1C001 in Parts 300 to 799 of Title 15, CFR.		Q
(b) Reserved.		N/A
INTERPRETATIONS: (a) The following interpretations explain and amplify terms used in this table and elsewhere in Tables 3 through 23: (1) Composite armor is defined as having more than one layer of different materials or a matrix. (2) Spaced armors are metallic or nonmetallic armors that incorporate an air space or obliquity or discontinuous material path effects as part of the defeat mechanism. (3) Reactive armor employs explosives, propellants, or other materials between plates for the purpose of enhancing plate motion during a ballistic event or otherwise defeating the penetrator. (4) Electromagnetic armor employs electricity to defeat threats such as shaped charges. (3) Materials used in composite armor could include layers of metals, plastics, elastomers, fibers, glass, ceramics, ceramic-glass reinforced plastic laminates, encapsulated ceramics in a metallic or non-metallic matrix, functionally gradient ceramic-metal materials, or ceramic balls in a cast metal matrix. (6) A material is considered transparent if it allows 75 percent or greater transmission of light in the visible spectrum through a 1 mm thick nominal sample. (7) The material in Part 1 Paragraph (e)(4) has not been treated to reach the 75 percent transmission level referenced in interpretation Paragraph (6). (8) Metal laminate armors are two or more layers of metallic materials which are mechanically or adhesively bonded together to form an armor system.		

Table 16. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment

Description of items for DEMIL coding	DEMIL Code
Part 1. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment described in USML Category XIV	
♦ (a) Chemical agents:	
(1) Nerve agents (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(2) Amiton (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(3) Vesicant agents (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(4) Incapacitating agents (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(5) Chemical warfare agents not enumerated above adapted for use in war to produce casualties in humans or animals, degrade equipment, or damage crops or the environment. (See the CCL at ECCNs 1C350, 1C355, and 1C395 for control of certain chemicals not adapted for use in war.) (See Subpart 121.1 of Title 22, CFR for a complete list of exclusions).	G
♦ (b) Biological agents and biologically derived substances and genetic elements thereof (see Subpart 121.1 of Title 22, CFR for a complete list).	G
♦ (c) Chemical agent binary precursors and key precursors (see Subpart 121.1 of Title 22, CFR for a complete list).	G
(d) Reserved.	N/A
(e) Defoliants (see Subpart 121.1 of Title 22, CFR for a complete list).	G
♦ (f) Parts, components, accessories, attachments, associated equipment, materials, and systems,:	
(1) Any equipment for the dissemination, dispersion, or testing of items described in Paragraphs (a), (b), (c), or (e):	
a. Any equipment specially designed for the dissemination and dispersion of items described in Paragraphs (a), (b), (c), or (e) of Table 15.	D

Table 16. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
b. Any equipment specially designed for testing the items described in Paragraphs (a), (b), (c), (e), or (f)(4) developed under a DoD contract or other funding authorization.	D
(2) Any equipment containing reagents, algorithms, coefficients, software, libraries, spectral databases, or alarm set point levels developed under a DoD contract or other funding authorization for the detection, identification, warning, or monitoring of:	D
a. Items described in Paragraphs (a) or (b).	
b. Chemical or biological agents.	
(3) Reserved.	N/A
(4) For individual protection or collective protection against the items described in Paragraphs (a) and (b):	
a. M53 Chemical Biological Protective Mask or M50 Joint Service General Purpose Mask.	F
b. Filter cartridges containing sorbents described in Paragraph (f)(4)(iii).	F
c. Carbon meeting Military Detail Specification (MIL-DTL)-32101A specifications (e.g., ASZM-TEDA carbon);.	F
d. Ensembles, garments, suits, jackets, pants, boots, or socks for individual protection, and liners for collective protection that allow no more than 1% breakthrough of GD or no more than 2% breakthrough of any other chemical controlled in Paragraph (a) of Part 1 of this table, when evaluated by executing the applicable standard method(s) of testing described in the current version of Test Operating Procedures 08-2-201 or 08-2-501 and using the defined DoD-specific requirements.	F
(5) Reserved.	N/A
(6) Reserved.	N/A
(7) Chemical Agent Resistant Coatings that have been qualified to Military Specifications MIL-PRF-32348, MIL- DTL-64159, or MIL-C-53039A.	F
(8) Any part, component, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Is manufactured using classified production data.	P
c. Is unclassified but being developed using classified information.	D

Table 16. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(g) Antibodies, recombinant protective antigens, polynucleotides, biopolymers, or biocatalysts (including their expression vectors, viruses, plasmids, or cultures of specific cells modified to produce them) (see Subpart 121.1 of Title 22, CFR for a complete list).	F
(h) Vaccines exclusively funded by a DoD contract (see Subpart 121.1 of Title 22, CFR for a complete list).	F
(i) Modeling or simulation tools, including software controlled in Paragraph (m) of Part 1 of this table, for chemical or biological weapons design, development, or employment developed or produced under a DoD contract or other funding authorization.	D
(j) through (l) Reserved.	N/A
(m) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(n) Developmental countermeasures or sorbents funded by the DoD via contract or other funding authorization;	F
Part 2. Military items described in the CCL	
ECCN 1A607	**Military dissemination equipment for riot control agents, military detection, and protection equipment for toxicological agents (including chemical, biological, and riot control agents), and related commodities**
(a) through (d) Reserved.	N/A
(e) Equipment specially designed for military use and for the dissemination of any of the riot control agents described in ECCN 1C607, Paragraph (a), Part 2.	Q
(f) Protection equipment (including air conditioning units, protective coatings, and protective clothing):	Q
(1) Not described in Paragraph (f), Part 1 of this table **and**	
(2) Specially designed for military use and for defense against:	
a. Materials specified in Paragraphs (a) or (b) of Part 1, **or**	
b. Riot control agents described for ECCN 1C607, Paragraph (a) of Part 2.	
(g) Decontamination equipment:	Q
(1) Not described in Paragraph (f).	

Table 16. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(2) Specially designed for military use and for decontamination of objects contaminated with materials described in Part 1 Paragraphs (a) or (b).	
(h) Equipment: (1) Not described in Part 1 Paragraph (f), **and** (2) Specially designed for military use and for the detection or identification of: a. Materials described in Part 1 Paragraphs (a) or (b), or b. Riot control agents described in ECCN 1C607, Paragraph (a).	Q
(i) Reserved.	N/A
(j) Equipment specially designed to: (1) Interface with a detector, shelter, vehicle, vessel, or aircraft described in Tables 3 to 23. (2) Collect and process samples of articles described in Part 1 Paragraphs (a) or (b).	Q
(k) Medical countermeasures that are specially designed for military use (including pre- and post-treatments, antidotes, and medical diagnostics) and specially designed to counter chemical agents described in Part 1 Paragraph (a). Examples are barrier and non-barrier creams and filled autoinjectors (e.g., combopens where one injector contains pralidoxime autoinjector and the other atropine) if specially designed to counter such agents.	Q
(l) through (w) Reserved.	N/A
(x) Parts, components, accessories, and attachments that are specially designed for an item described in ECCN 1A607 Paragraphs (e), (f), (g), or (j) or described in Paragraph (f) of Part 1 and that are not described elsewhere in Part 1 of Tables 3 to 23.	Q
ECCN 1B607	**Military test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 1A607 or 1C607, or defense articles enumerated or otherwise described in USML Category XIV**
(a) Equipment specially designed for the destruction of the chemical agents described in Part 1 Paragraph (a).	Q
(b) Test facilities and equipment specially designed for military certification, qualification, or testing of commodities described in ECCN 1A607 (e), (f), (g), or (j) or in Part 1 Paragraph (f) (except (f)(1).	Q

Table 16. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(c) Tooling and equipment specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 1A607 (e), (f), (g), (h), or (j) or Part 1 Paragraph (f).	Q
(d) through (w) Reserved.	N/A
(x) Parts, components, accessories, and attachments that are specially designed for a commodity described in ECCN 1B607 Paragraphs (b) or (c), or for a defense article described in Part 1 Paragraph (f), and that are not described elsewhere in Part 1 of Tables 3 to 23.	Q
ECCN 1C607	**Tear gases, riot control agents, and materials for the detection and decontamination of chemical warfare agents**
(a) Tear gases and riot control agents with Chemical Abstracts Service (CAS) numbers found on the American Chemical Society website https://www.cas.org:	Q
(1) Bromobenzyl cyanide, CAS 5798-79-8.	
(2) o–Chlorobenzylidenemalononitrile or o–Chlorobenzalmalononitrile, CAS 2698-41-1.	
(3) Phenylacyl chloride or w–-Chloroacetophenone, CAS 532-27-4.	
(4) Dibenz-(b,f)-1:4-oxazephine, CAS 257-07-8.	
(5) Adamsite, Diphenylamine chloroarsine, CAS 578-94-9.	
(6) N-Nonanoylmorpholine, CAS 5299-64-9.	
(7) Dibromodimethyl ether, CAS 4497-2-4.	
(8) Dichlorodimethyl ether, CAS 542-88-1.	
(9) Ethyldibromoarsine, CAS 683–43–2.	
(10) Bromo acetone, CAS 598–31–2.	
(11) Bromo methylethylketone, CAS 816– 40–0.	
(12) Iodo acetone, CAS 3019–04–3.	
(13) Phenylcarbylamine chloride, CAS 622–44–6.	
(14) Ethyl iodoacetate, CAS 623–48–3.	
(b) Biopolymers not described in Part 1 Paragraph (g) specially designed or processed for the detection or identification of chemical warfare agents specified in Part 1 Paragraph (a), and the cultures of specific cells used to produce them.	Q
(c) Biocatalysts and biological systems not described in Part 1 Paragraph (g) specially designed for the decontamination or degradation of chemical warfare agents described in Part 1 Paragraph (a):	Q

Table 16. Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(1) Biocatalysts specially designed for the decontamination or degradation of chemical warfare agents described in Part 1 Paragraph (a) resulting from directed laboratory selection or genetic manipulation of biological systems;	
(2) Biological systems containing the genetic information specific to the production of biocatalysts described in ECCN 1C607, Paragraph (c)(1).	
a. Expression vectors.	
b. Viruses.	
c. Cultures of cells.	
(d) Chemical mixtures not described in Part 1 Paragraph (f) specially designed for military use for the decontamination of objects contaminated with materials specified in Part 1 Paragraphs (a) or (b).	Q

Table 17. Spacecraft and Related Articles

Description of items for DEMIL coding	DEMIL Code
Part 1. Spacecraft and Related Articles described in USML Category XV	
(a) Spacecraft, including satellites and space vehicles, whether designated developmental, experimental, research, or scientific, or having a commercial, civil, or military end-use, that:	
♦ (1) Are specially designed to mitigate effects (e.g., scintillation) of or for detection of a nuclear detonation.	D
♦ (2) Autonomously track ground, airborne, missile, or space objects in real-time using imaging, infrared, radar, or laser systems.	D
♦ (3) Conduct signals intelligence or measurement and signatures intelligence.	D
♦ (4) Are specially designed to be used in a constellation or formation that when operated together form a virtual satellite (e.g., functioning as if one satellite) with the characteristics or functions of other items in Paragraph (a).	D
♦ (5) Are anti-satellite or anti-spacecraft (e.g., kinetic, RF, laser, charged particle).	D
♦ (6) Have space-to-ground weapons systems (e.g., kinetic or directed energy).	D
♦ (7) Have any of the following electro-optical remote sensing capabilities or characteristics:	
a. Electro-optical visible and near infrared (VNIR) (i.e., 400 nm to 1,000 nm) or infrared (i.e., greater than 1,000 nm to 30,000 nm) with less than 40 spectral bands and having a clear aperture greater than 0.35 meters.	D
b. Electro-optical hyperspectral with 40 spectral bands or more in the VNIR, short-wavelength infrared (i.e., greater than 1,000 nm to 2,500 nm) or any combination of the aforementioned and having a GSD less than 30 meters.	D
c. Electro-optical hyperspectral with 40 spectral bands or more in the mid-wavelength infrared (i.e., greater than 2,500 nm to 5,500 nm) having a narrow spectral bandwidth of (delta lambda (Dl)) less than or equal to 20	D

Table 17. Spacecraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
nm full width at half maximum (FWHM) or having a wide spectral bandwidth with Dl greater than 20 nm FWHM and a GSD less than 200 meters.	
d. Electro-optical hyperspectral with 40 spectral bands or more in the long-wavelength infrared (i.e., greater than 5,500 nm to 30,000 nm) having a narrow spectral bandwidth of limit of the wavelength difference Dl less than or equal to 50 nm FWHM or having a wide spectral bandwidth with Dl greater than 50 nm FWHM and a GSD less than 500 m.	D
♦ (8) Have radar remote sensing capabilities or characteristics (e.g., active electronically scanned array, synthetic aperture radar, inverse synthetic aperture radar, ultra-wideband synthetic aperture radar), except those having a center frequency equal to or greater than 1 GHz but less than or equal to 10 GHz and having a bandwidth less than 300 MHz.	D
(9) Provide positioning, navigation, and timing signals.	D
(10) Provide space-based logistics, surveillance, assembly, repair, or servicing of any spacecraft (e.g., refueling) and have integrated propulsion other than that required for attitude control.	D
(11) Provide for sub-orbital or in-space human habitation and have integrated propulsion other than that required for attitude control.	D
(12) That are not commercial communications satellites and that have integrated propulsion other than for attitude control or achieving initial orbit.	D
♦ (13) Are classified, contain classified software or hardware, are manufactured using classified production data, or are being developed using classified information (e.g., having classified requirements, specifications, functions, or operational characteristics or include classified cryptographic items described under Part 1 of Table 15).	P
(b) Ground control systems or training simulators, specially designed for tracking, telemetry, and control of spacecraft in Paragraph (a).	C
(c) Reserved.	N/A
(d) Reserved.	N/A
(e) Spacecraft parts, components, accessories, attachments, equipment, or systems:	
(1) Antenna systems specially designed for spacecraft that:	D
a. Have a dimension greater than 25 meters in diameter or length of the major axis.	
b. Employ active electronic scanning.	
c. Are adaptive beam forming.	
d. Are for interferometric radar.	

Table 17. Spacecraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(2) Space-qualified optics (i.e., lens or mirror), including optical coating, having active properties (e.g., adaptive, deformable) with a largest lateral clear aperture dimension greater than 0.35 meters.	D
(3) Space-qualified focal plane arrays having a peak response in the wavelength range exceeding 900 nm and readout integrated circuit, whether separate or integrated, specially designed.	D
(4) Space-qualified mechanical (i.e., active) cryocooler or active cold finger, and associated control electronics specially designed.	D
(5) Space-qualified active vibration suppression, including active isolation and active dampening, and associated control electronics.	D
(6) Optical bench assemblies specially designed to enable spacecraft to meet or exceed the parameters described in Paragraph (a).	D
(7) Space-qualified kinetic or directed-energy systems (e.g., RF, laser, charged particle) specially designed for spacecraft in Paragraph (a)(5) or (a)(6), and specially designed parts and components (e.g., power conditioning and beam-handling or switching, propagation, tracking, and pointing equipment).	D
(8) Reserved.	N/A
(9) Space-qualified cesium, rubidium, hydrogen maser, or quantum (e.g., based upon aluminum, mercury, ytterbium, strontium, beryllium ions) atomic clocks, and specially designed parts and components.	D
(10) Attitude determination and control systems, and specially designed parts and components, that provide a spacecraft's geolocation accuracy, without using ground location points, better than or equal to:	
a. 5 meters circular error at 90 percent confidence (CE90) from low earth orbit;	D
b. 30 meters CE90 from medium earth orbit;	D
c. 150 meters CE90 from geosynchronous orbit; or	D
d. 225 meters CE90 from high earth orbit.	D
(11) Space-based systems, and specially designed parts and components:	
a. Nuclear reactors and associated power conversion systems (e.g., liquid metal or gas-cooled fast reactors);	D
b. Radioisotope-based power systems (e.g., radioisotope thermoelectric generators); or	D
c. Nuclear thermal propulsion systems (e.g., solid core, liquid core, gas core fission.	D
(12) Thrusters (e.g., rocket engines) that provide greater than 150 lbf (e.g., 667.23 N) vacuum thrust.	G
(13) Control moment gyroscope specially designed for spacecraft.	D

Table 17. Spacecraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(14) Space-qualified monolithic MMIC that combine transmit and receive functions on a single die:	
a. Having a power amplifier with maximum saturated peak output power (Psat), in watts, greater than 200 divided by the maximum operating frequency (in GHz) squared [Psat >200 W*GHz^2/ fGHz^2]; or	D
b. Having a common path (e.g., phase shifter-digital attenuator) circuit with greater than 3 bits phase shifting at operating frequencies 10 GHz or below, or greater than 4 bits phase shifting at operating frequencies above 10 GHz.	D
(15) Space-qualified oscillator for radar in Paragraph (a) with phase noise less than -120 dBc/ Hz + (20 log10(RF) (in GHz)) measured at 2 KHz*RF (in GHz) from carrier.	D
(16) Space-qualified star tracker or star sensor with angular accuracy less than or equal to 1 arcsecond (1-Sigma) per star coordinate, and a tracking rate equal to or greater than 3.0 degrees per second, and specially designed parts and components.	D
(17) Primary, secondary, or hosted payload that performs any of the functions described in Paragraph (a):	D
♦ (18) Secondary or hosted payload, and specially designed parts and components, developed with DoD funding.	D
(19) Spacecraft heat shields or heat sinks specially designed for atmospheric entry or re-entry, and specially designed parts and components.	D
(20) Equipment modules, stages, or compartments that contain propulsion other than that required for attitude control and can be separated or jettisoned from another spacecraft.	D
♦ (21) Any part, component, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D
(f) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(g) through (w) Reserved.	N/A

Table 17. Spacecraft and Related Articles, Continued

Description of items for DEMIL coding		DEMIL Code
Part 2. Military items described in the CCL		
ECCN 9A515	**Spacecraft and Related Commodities.**	
a. Having a power amplifier with maximum saturated peak output power (Psat), in watts, greater than 200 divided by the maximum operating frequency (in GHz) squared [Psat >200 W*GHz^2/ fGHz^2]; or		D
b. Having a common path (e.g., phase shifter-digital attenuator) circuit with greater than 3 bits phase shifting at operating frequencies 10 GHz or below, or greater than 4 bits phase shifting at operating frequencies above 10 GHz.		D
(15) Space-qualified oscillator for radar in Paragraph (a) with phase noise less than -120 dBc/ Hz + (20 log10(RF) (in GHz)) measured at 2 KHz*RF (in GHz) from carrier.		D
(16) Space-qualified star tracker or star sensor with angular accuracy less than or equal to 1 arcsecond (1-Sigma) per star coordinate, and a tracking rate equal to or greater than 3.0 degrees per second, and specially designed parts and components.		D
(17) Primary, secondary, or hosted payload that performs any of the functions described in Paragraph (a):		D
♦ (18) Secondary or hosted payload, and specially designed parts and components, developed with DoD funding.		D
(19) Spacecraft heat shields or heat sinks specially designed for atmospheric entry or re-entry, and specially designed parts and components.		D
(20) Equipment modules, stages, or compartments that contain propulsion other than that required for attitude control and can be separated or jettisoned from another spacecraft.		D
♦ (21) Any part, component, accessory, attachment, equipment, or system that:		
a. Is classified.		P
b. Contains classified software.		P
c. Is unclassified but being developed using classified information.		D
(f) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:		
(1) Classified or		P
(2) Unclassified.		D
(g) through (w) Reserved.		N/A

Table 17. Spacecraft and Related Articles, Continued

Description of items for DEMIL coding		DEMIL Code
Part 2. Military items described in the CCL		
ECCN 9A515	**Spacecraft and Related Commodities.**	
(a) Spacecraft, including satellites, and space vehicles, whether designated developmental, experimental, research, or scientific, not described in Part 1 of this table or in ECCN 9A004 in Part 774 of Title 15, CFR, that:		Q
(1) Have electro-optical remote sensing capabilities and a clear aperture greater than 0.35 meters, but less than or equal to 0.50 meters;		
(2) Have remote sensing capabilities beyond near infrared (NIR) (i.e., short-wavelength infrared (SWIR), mid-wavelength infrared (MWIR), or Long-wavelength (LWIR));		
(3) Have radar remote sensing capabilities (e.g., AESA, SAR, or ISAR) having a center frequency equal to or greater than 1.0 GHz, but less than 10.0 GHz, and a bandwidth equal to or greater than 100 MHz, but less than 300 MHz;		
(4) Provide space-based logistics, assembly, or servicing of another spacecraft; or		
(5) Are not described in Paragraphs (a)(1), (a)(2), (a)(3) or (a)(4)		
(b) Ground control systems and training simulators specially designed for telemetry, tracking, and control of the spacecraft described in ECCN 9A515 in Paragraph (a), Part 2 of this table or ECCN 9A004.u of Part 774 of Title 15, CFR.		Q
(c) Reserved.		N/A
(d) Microelectronic circuits (e.g., integrated circuits, microcircuits, metal oxide semi-conductor field-effect transistors) and discrete electronic components rated, certified, or otherwise specified or described as meeting or exceeding all the following characteristics and that are specially designed for items described in Tables 3 through 23 or ECCN 9A515 described in Part 2 of this table or ECCN 9A004.u of Part 774 of Title 15, CFR:		D
(1) A total dose of 5×10^5 Radians (Rads) (System of units (Si))(5×10^3 gray (Gy) (Si));		
(2) A dose rate upset threshold of 5×10^8 Rads (Si)/sec (5×10^6 Gy (Si)/sec);		
(3) A neutron dose of 1×10^{14} n/cm^2 (1 million electron volts (MeV) equivalent);		
(4) An uncorrected single event upset sensitivity of 1×10^{-10} errors/bit/day or less, for the cosmic ray effects on micro-electronics-Monte Carlo geosynchronous orbit, solar minimum environment for heavy ion flux. An uncorrected single event upset sensitivity of 1×10^{-3} errors/part or less for a fluence of 1×10^7 protons/cm^2 for proton energy greater than 50 MeV; **and**		

Table 17. Spacecraft and Related Articles, Continued

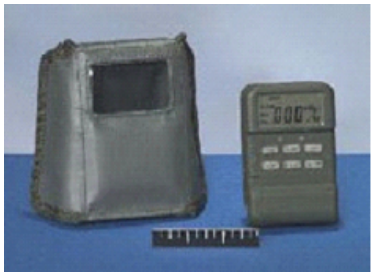
Description of items for DEMIL coding	DEMIL Code
(5) An uncorrected single event upset sensitivity of 1 x 10-3 errors/part or less for a fluence of 1 X 107 protons/cm^2 for proton energy greater than 50 MeV.	
(e) Microelectronic circuits (e.g., integrated circuits and micro-circuits) that are rated, certified, or otherwise specified or described as meeting or exceeding either of the following characteristics and that are specially designed for items described in Part 1 or ECCN 9A515 in Part 2 of this table or ECCN 9A004.u of Part 774 of Title 15, CFR:	D
(1) A total dose $\geq 1 \times 10^5$ Rads (Si) (1×10^3 Gy(Si)) and $<5 \times 10^5$ Rads (Si) (5×10^3 Gy(Si)); and	
(2) A single event effect (i.e., single event latchup, single event burnout, or single event gate rupture) immunity to a linear energy transfer $\geq$80 MeV-cm^2/mg.	
(f) Pressure suits (i.e., space suits) capable of operating at altitudes 55,000 feet above sea level.	Q
(g) Remote sensing components specially designed for spacecraft listed in paragraph (a) of this table:	
(1) Space-qualified optics (i.e., lens, mirror, or membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;	Q
(2) Optical bench assemblies specially designed for spacecraft listed in paragraph (a) of this table; or	Q
(3) Primary, secondary, or hosted payloads that perform a function of spacecraft listed in paragraph (a) of this table.	Q
(h) through (w) Reserved	N/A
(x) Specially designed parts, components, accessories, and attachments for an item in ECCN 9A515 or Part 1 of this table and that are not described in other ECCNs and are not microelectronic circuits and discrete electronic components.	Q
(y) Items identified in an interagency-cleared commodity classification pursuant to Section 748.3 (e) of Title 15, CFR.	A
(1) Discrete electronic components not specified in Paragraph (e).	A
(2) Space grade or for spacecraft applications thermistors.	A
(3) Space grade or for spacecraft applications RF microwave bandpass ceramic filters (dielectric resonator bandpass filters);	A

Table 17. Spacecraft and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(4) Space grade or for spacecraft applications hall effect sensors;	A
(5) Space grade or for spacecraft applications subminiature (subminiature version A (SMA) and subminiature push-on (SMP)) plugs and connectors, Threaded Neill-Concelman (TNC) plugs and cable and connector assemblies with SMA plugs and connectors; and	A
(6) Space grade or for spacecraft applications flight cable assemblies.	A
ECCN 9B515	**Test, inspection, and production equipment specially designed for spacecraft and related commodities.**
(a) Test, inspection, and production equipment specially designed for the production or development of Paragraph (a), ECCN 9A515 items described in Part 2 or Paragraphs (a) and (e) of Part 1 of this table, or ECCN 9A004.u of Part 774 of Title 15, CFR.	C
(b) Environmental test chambers capable of pressures below (10-4) Torr, and specially designed for Paragraph (a), ECCN 9A515 items described in Part 2 or Paragraph (a) of Part 1.	Q
INTERPRETATIONS: In Part 1 Paragraph (e)(17), primary payload is that complement of equipment designed from the outset to accomplish the prime mission function of the spacecraft payload mission set. The primary payload may operate independently from the secondary payload(s). Secondary payload is that complement of equipment designed from the outset to be fully integrated into the spacecraft payload mission set. The secondary payload may operate separately from the primary payload. Hosted payload is a complement of equipment or sensors that uses the available or excess capacity (e.g., mass, volume, or power) of a spacecraft to accommodate an additional, independent mission. The hosted payload may share the spacecraft bus support infrastructure. The hosted payload performs an additional, independent mission which does not dictate control or operation of the spacecraft. A hosted payload is not capable of operating as an independent spacecraft. Spacecraft bus (distinct from the spacecraft payload), provides the support infrastructure of the spacecraft (e.g., command and data handling, communications and antenna(s), electrical power, propulsion, thermal control, attitude and orbit control, guidance, navigation and control, structure and truss, life support (for crewed mission)) and location (e.g., attachment, interface) for the spacecraft payload. Spacecraft payload is that complement of equipment attached to the spacecraft bus that performs a particular mission in space (e.g., communications, observation, science). Paragraph (a), ECCN 9A515 of Part 2, includes commercial communications satellites, remote sensing satellites planetary rovers, planetary and interplanetary probes, and in-space habitats not described in Part 1 or in ECCN 9A004 in Part 774 of Title 15, CFR.	

Table 18. Nuclear Weapons Related Articles



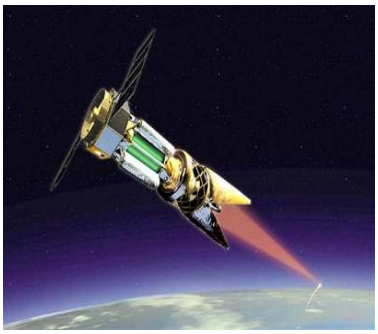


Part 1. Nuclear Weapons Related Articles described in USML Category XVI -	
Description of items for DEMIL coding	**DEMIL Code**
(a) Reserved.	N/A
♦ (b) Modeling or simulation tools that model or simulate the environments generated by nuclear detonations or the effects of these environments on systems, subsystems, components, structures, or humans.	D
(c) Reserved.	N/A
(d) Parts, components, accessories, attachments, associated equipment, and production, testing, and inspection equipment and tooling, specially designed for the articles in Paragraph (b).	D
(e) Decals, labels, and technical manuals containing technical data directly related to the items listed in Paragraph (b) described as either:	
(1) Classified or	P
(2) Unclassified.	D
(f) through (w) Reserved.	N/A

Table 19. Classified Articles, Technical Data, and Defense Services Not Otherwise Listed

Part 1. Classified Articles, Technical Data, and Defense Services Not Otherwise Enumerated as described in USML Category XVII	
Description of items for DEMIL coding	**DEMIL Code**
♦ (a) All articles, and technical data (as defined in Subpart 120.10 of Title 22, CFR) and defense services as defined in Part 120.9 of Title 22, CFR which are classified in the interests of national security and that are not otherwise described on the USML.	P

Table 20. Directed Energy Weapons

Description of items for DEMIL coding	DEMIL Code
Part 1. Directed Energy Weapons described in USML Category XVIII	
♦ (a) Directed energy weapons:	D
(1) Systems or equipment that, other than as a result of incidental, accidental, or collateral effect:	
a. Degrade, destroy, or cause mission-abort of a target;	
b. Disturb, disable, or damage electronic circuitry, sensors, or explosive devices remotely;	
c. Deny area access;	
d. Cause lethal effects; or	
e. Cause ocular disruption or blindness; **and**	
(2) Use any non-acoustic technique such as lasers (including continuous wave or pulsed lasers), particle beams, particle accelerators that project a charged or neutral particle beam, high power radio-frequency (RF), or high pulsed power or high average power RF beam transmitters.	
♦ (b) Systems or equipment specially designed to detect, identify, or provide defense against articles specified in Paragraph (a) of Part 1 of this table.	D
(c) Reserved.	N/A
(d) Reserved.	N/A
(e) Components, parts, accessories, attachments, and associated systems or equipment specially designed for any of the defense articles in Paragraphs (a) and (b).	D
(f) Developmental directed energy weapons funded by the DoD via contract or other funding authorization, and specially designed parts and components.	D
(g) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	

Table 20. Directed Energy Weapons, Continued

Description of items for DEMIL coding	DEMIL Code
(1) Classified or	P
(2) Unclassified.	D
Part 2. Military items described in the CCL	
ECCN 6B619	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities enumerated or otherwise described in USML Category XVIII**
(a) Tooling, templates, jigs, mandrels, molds, dies, fixtures, alignment mechanisms, and test equipment not enumerated or otherwise described in this table and not elsewhere specified that are specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in Part 1 of this table.	D
(b) through (w) Reserved.	N/A
(x) Parts, components, accessories, and attachments specially designed for an item described in Paragraph (a) of this ECCN.	Q

Table 21. Gas Turbine Engines and Associated Equipment



Part 1. Gas Turbine Engines and Associated Equipment described in USML Category XIX	
Description of items for DEMIL coding	**DEMIL Code**
♦ (a) Turbofan and turbojet engines (including technology demonstrators, developmental engines, or variable cycle engines), capable of 15,000 lbf (66.7 kilonewton) of thrust or greater that have any of the following:	
(1) With or specially designed for thrust augmentation (afterburner).	C
(2) Thrust or exhaust nozzle vectoring.	C
(3) Parts or components described in Paragraph (f)(6).	P
(4) Specially designed for sustained 30 second inverted flight or negative g maneuver.	C
(5) Specially designed for high power extraction (greater than 50 percent of engine thrust at altitude) at altitudes greater than 50,000 feet.	C
♦ (b) Turboshaft and turboprop engines (including technology demonstrators or developmental engines):	
(1) Capable of 2000 mechanical shaft horsepower (1491 kW) or greater and specially designed with oil sump sealing when the engine is in the vertical position.	C
(2) Capable of a specific power of 225 shaft horsepower/(lbm/sec) or greater and specially designed for armament gas ingestion and non-civil transient maneuvers, where specific power is defined as maximum takeoff shaft horsepower divided by compressor inlet flow (lbm/sec).	C
♦ (c) Gas turbine engines (including technology demonstrators, developmental engines, and variable cycle engines) specially designed for UAV systems, cruise missiles, or target drones.	C
♦ (d) GE38, AGT1500, CTS800, MT7, T55, HPW3000, GE3000, T408, and T700 engines.	C
♦ (e) Digital engine control systems (e.g., full authority digital engine controls and digital electronic engine controls) specially designed for gas turbine engines described in this table.	D

Table 21. Gas Turbine Engines and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(f) Parts, components, accessories, attachments, associated equipment, and systems:	
(1) Parts, components, accessories, attachments, and equipment specially designed for the following U.S. origin engines and military variants: F101, F107, F112, F118, F119, F120, F135, F136, F414, F415, and J402 and not common to other engines.	D
♦ (2) Hot section components (i.e., combustion chambers and liners;~~,~~ high pressure turbine blades, vanes, disks and related cooled structure; cooled intermediate pressure turbine blades, vanes, disks and related cooled structures; cooled low pressure turbine blades, vanes, disks and related cooled structures; cooled shaft-driving power turbine blades, vanes, disks and related cooled structures; cooled augmenters; and cooled nozzles) specially designed for gas turbine engines described in part 1 of this table.	D
(3) Uncooled turbine blades, vanes, disks, and tip shrouds specially designed for gas turbine engines described in part 1 of this table.	D
(4) Combustor cowls, diffusers, domes, and shells specially designed for gas turbine engines described in part 1 of this table.	D
(5) Engine monitoring systems (i.e., prognostics, diagnostics, and health) specially designed for gas turbine engines and components described in part 1 of this table.	C
♦ (6) Any part, component, accessory, attachment, equipment, or system that:	
a. Is classified.	P
b. Contains classified software.	P
c. Is unclassified but being developed using classified information.	D
(7) Investment casting cores, core dies, or wax pattern dies for parts or components enumerated in Paragraphs (f)(1), (f)(2), or (f)(3).	D
(8) Pressure gain combustors specially designed for engines controlled in Part 1 of this table and specially designed parts and components.	D
(9) Three-stream fan systems, specially designed for gas turbine engines described in part 1 of this table, that allow the movement of airflow between the streams to control fan pressure ratio or bypass ratio (by means other than use of fan corrected speed or the primary nozzle area to change the fan pressure ratio or bypass ratio), and specially designed parts, components, accessories, and attachments.	D

Table 21. Gas Turbine Engines and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(10) High pressure compressors, specially designed for gas turbine engines described in part 1 of this table, with core-driven bypass streams that have a pressure ratio greater than one, occurring across any section of the bypass duct, and specially designed parts, components, accessories, and attachments.	D
(11) Intermediate compressors of a three-spool compression system, specially designed for gas turbine engines described in part 1 of this table, with an intermediate spool-driven bypass stream that has a pressure ratio greater than one, occurring across any section of the bypass duct, and specially designed parts, components, accessories, and attachments.	D
(12) Any of the following equipment if specially designed for an item described in Paragraph (f)(1): jigs, locating fixtures, templates, gauges, molds, dies, caul plates, or bellmouths.	D
(g) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(h) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 9A619	**Military gas turbine engines and related commodities.**
(a) Military gas turbine engines specially designed for a military use that are not described in Paragraphs (a), (b), (c), or (d), Part 1 of this table. For purposes of this paragraph, the term military gas turbine engines means gas turbine engines specially designed for end items listed in Part 1 of Tables 8, 9, or 10, or on the CCL under Part 2 ECCNs 0A606, 8A609, or 9A610.	C

Table 21. Gas Turbine Engines and Associated Equipment, Continued

Description of items for DEMIL coding	DEMIL Code
(b) Digital engine controls (e.g., full authority digital engine controls and digital electronic engine controls) specially designed in ECCN 9A619 gas turbine engines described in Part 2.	D
(c) If specially designed for gas turbine engines described in ECCN 9A619, Paragraph (a), Part 2 hot section components (i.e., combustion chambers and liners; high pressure turbine blades, vanes, disks and related cooled structure; cooled low pressure turbine blades, vanes, disks and related cooled structure; cooled augmenters; and cooled nozzles).	D

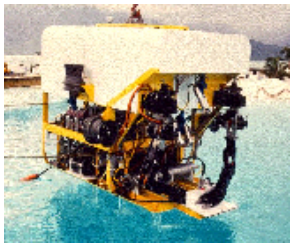
(d) If specially designed for gas turbine engines described in ECCN 9A619, Paragraph (a), Part 2, uncooled turbine blades, vanes, disks, and tip shrouds.	D
(e) If specially designed for gas turbine engines described in Paragraph (a), ECCN 9A619, Part 2, combustor cowls, diffusers, domes, and shells.	D
(f) Engine monitoring systems (i.e., those that conduct prognostics, diagnostics, and monitor health) specially designed for gas turbine engines and components described in ECCN 9A619, Part 2.	C
(g) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories and attachments that are for an item described in ECCN 9A619, Part 2 (other than paragraph (c), or a defense article in Part 1 and not described in Paragraph (y), Part 2.	Q
(y) Specific parts, components, accessories, and attachments specially designed for an item in this table or in Table 10:	
(1) Oil tank and reservoirs.	A
(2) Oil lines and tubes.	A
(3) Fluid hoses, lines, fittings, couplings, and brackets.	A
(4) Fluid filters and filter assemblies.	A
(5) Clamps.	A
(6) Shims.	A
(7) Identification plates and nameplates.	A
(8) Fluid manifolds.	A
(9) Check valves for fluid systems.	A

Table 21. Gas Turbine Engines and Associated Equipment, Continued

ECCN 9B619	**Test, inspection, and production equipment and related commodities specially designed for the development or production of commodities listed in ECCN 9A619 or USML Category XIX.**
Description of items for DEMIL coding	**DEMIL Code**
(a) Test, inspection, and production equipment specially designed for the production, development, repair, overhaul, or refurbishment of commodities described in ECCN 9A619 in Part 2 or Part 1, and parts, components, accessories, and attachments specially designed.	C
(b) Equipment, cells, or stands specially designed for testing, analysis, and fault isolation of engines, systems, components, parts, accessories, and attachments specified as ECCN 9A619 in Part 2 or in Part 1.	C
(c) through (x) Reserved.	N/A
ECCN 9C619	**Materials specially designed for commodities described in Part 1 or ECCN 9A619 not elsewhere specified in the CCL or the USML.**

(a) Materials not elsewhere specified in Tables 3 through 23 or the CCL and specially designed for items described in Part 1 or ECCN 9A619 of Part 2 (except paragraph (y) of this table. Includes materials specially designed for both an engine described in Part 1 of this table and an engine described in ECCN 9A619 in Part 2 of this table.	Q
(b) Materials specially designed for use in certain gas turbine engines, as follows:	
(1) Powders specially designed for thermal or environmental barrier coating of defense articles, described in paragraphs (f)(1)–(f)(4) of Part 1 of this Table for engines listed in (f)(1);	Q
(2) Superalloys (i.e., nickel, cobalt or iron based), used in directionally solidified or single crystal casting, specially designed for defense articles described in paragraphs (f)(1)– (f)(4) of Part 1 of this Table for engines listed in paragraph (f)(1); or	Q
(3) Imide matrix, metal matrix, or ceramic matrix composite material (i.e., reinforcing fiber combined with a matrix) specially designed for defense articles described in paragraphs (f)(1)–(f)(4) of Part 1 of this Table for engines listed in paragraph (f)(1).	Q
INTERPRETATIONS: Note to Paragraph (f)(1), Part 1: This paragraph does not control parts, components, accessories, and attachments that are common to engines described in Paragraph (a) through (d), Part 1 but not described in Paragraph (f)(1) of Part 1, or those identified in paragraph (f)(1). For example, a part common to only the F110 and F136 is not specially designed for purposes of Paragraph (f)(1). A part common to only the F119 and F135, two engine models described in Paragraph (f)(1), Part 1, is specially designed.	

Table 22. Submersible Vessels and Related Articles

Description of items for DEMIL coding	DEMIL Code
Part 1. Submersible Vessels and Related Articles described in USML Category XX	
(a) Submersible and semi-submersible vessels that are:	
♦ (1) Submarines specially designed for military use.	C
(2) Mine countermeasure vehicles.	C
(3) Anti-submarine warfare vehicles.	C
(4) Armed or are specially designed to be used as a platform to deliver munitions or otherwise destroy or incapacitate targets (e.g., firing torpedoes, launching rockets, firing missiles, deploying mines, deploying countermeasures) or deploy military payloads.	C
(5) Swimmer delivery vehicles specially designed for the deployment, recovery, or support of swimmers or divers from submarines.	C
(6) Integrated with nuclear propulsion systems.	C
(7) Equipped with any mission systems in Tables 3 through 23.	C
(8) Developmental vessels funded by the DoD via contract or other funding authorization.	C
♦ (b) Engines, electric motors, and propulsion plants:	
(1) Naval nuclear propulsion plants, their land prototypes, and special facilities for their construction, support, and maintenance.	F
(2) Electric motors specially designed for submarines that have the following:	D
a. Power output of more than 0.75 megawatts (1,000 horsepower);	
b. Quick reversing;	
c. Liquid cooled; and	
d. Totally enclosed.	
(c) Parts, components, accessories, attachments, and associated equipment, including production, testing, and inspection equipment and tooling, specially designed for any of the articles in Paragraphs (a) and (b).	D

Table 22. Submersible Vessels and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(d) Decals, labels, and technical manuals containing technical data directly related to the items listed in this table described as either:	
(1) Classified or	P
(2) Unclassified.	D
(e) through (w) Reserved.	N/A
Part 2. Military items described in the CCL	
ECCN 8A620 **Submersible vessels, oceanographic, and associated commodities.**	
(a) Submersible and semi-submersible vessels specially designed for a military use and not described in the Tables 3 through 23. This paragraph includes submarine rescue vehicles and deep submergence vehicles.	C
(b) Submersible and semi-submersible vessels specially designed for cargo transport and parts, components, accessories, and attachments specially designed.	C
(c) Harbor entrance detection devices (magnetic, pressure, and acoustic) and controls, not elsewhere specified in Tables 3 to 23.	C
(d) Diesel engines of 1,500 horsepower and over with rotary speed of 700 rpm or over specially designed for submarines.	D
(e) Submarine nets and torpedo nets.	D
(f) Closed and semi-closed circuit (rebreathing) apparatus specially designed for military use and not described elsewhere in the CCL or in the USML, and specially designed components for use in the conversion of open-circuit apparatus to military use.	D
(g) through (w) Reserved.	N/A
(x) Specially designed parts, components, accessories, and attachments for an ECCN 8A620 item described in Part 2 (except for Paragraph (b) of Part 2) or in Part 1 that is not elsewhere specified and not described in Paragraph (y), Part 2 of Table 22.	Q
(y) Specific parts, components, accessories, and attachments specially designed for an item described in Part 2 of this table:	
(1) Public address systems	A
(2) Filters and filter assemblies, hoses, lines, fittings, couplings, and brackets for pneumatic, hydraulic, oil and fuel systems.	A
(3) Galleys.	A

Table 22. Submersible Vessels and Related Articles, Continued

Description of items for DEMIL coding	DEMIL Code
(4) Lavatories.	A
(5) Magnetic compass, magnetic azimuth detector.	A
(6) Medical facilities.	A
(7) Potable water tanks, filters, valves, hoses, lines, fittings, couplings, and brackets.	A
(8) Panel knobs, indicators, switches, buttons, and dials whether unfiltered or filtered for use with night vision imaging systems.	A
(9) Emergency lighting.	A
(10) Gauges and indicators.	A
(11) Audio selector panels.	A
ECCN 8B620	**Test, inspection, and production equipment and related commodities specially designed for the development, production, repair, overhaul, or refurbishing of commodities listed in ECCN 8A620.**
(a) Test, inspection, and production equipment specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 8A620 (except for Paragraphs (b) and (y)) in Part 2 and parts, components, accessories, and attachments specially designed.	C
(b) Test, inspection, and production equipment specially designed for the development, production, repair, overhaul, or refurbishing of commodities described in ECCN 8A620 in Paragraph (b), Part 2 and parts, components, accessories, and attachments specially designed.	C

Table 23. Articles, Technical Data, and Defense Services Not Otherwise Listed

Articles, Technical Data, and Defense Services Not Otherwise Enumerated as described in USML Category XXI	
Description of items for DEMIL coding	**DEMIL Code**
♦(a) Any article not described on the USML may be included in this table until such time as the appropriate USML category is amended. The decision on whether any article may be included in this table, and the designation of the defense article as not significant military equipment in accordance with Part 120.7 of Title 22, CFR is made by the Director, Office of Defense Trade Controls Policy.	D
(b) Technical data in accordance with Subpart 120.10 of Title 22, CFR and defense services in accordance with Subpart 120.9 of Title 22, CFR directly related to the defense articles described in Paragraph (a) of this table.	D

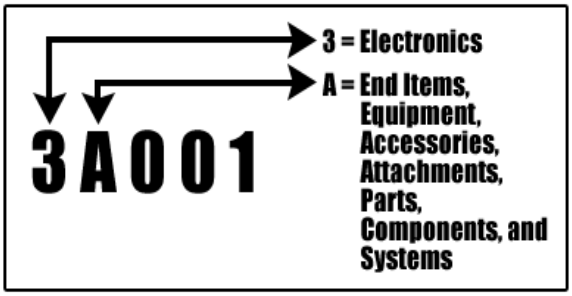
SECTION 4: DEMIL CODING OF CCL ITEMS

4.1. ASSIGNING DEMIL CODES TO NON-MILITARY CCL ITEMS.

a. Introduction. DEMIL coders will use this section with Step 12 of the coding steps described in Table 2 in accordance with Part 774 of Title 15, CFR. Items not described in the USML or CCL become eligible for DEMIL code "A" assignment.

b. ECCNs. The key in determining whether an item meets DEMIL code "Q" criteria is whether the item is listed on the CCL and is described under a specific ECCN as stated in Part 774 of Title 15, CFR. An example ECCN is shown in Figure 2. Each ECCN consists of 5 characters as shown in Figure 2.

Figure 2. Example of an ECCN



(1) The first position in an ECCN is a number which identifies the CCL category as listed in Table 24.

Table 24. CCL Categories

Category 0	Nuclear Materials, Facilities, and Equipment and Miscellaneous Items
Category 1	Materials, Chemicals, Microorganisms, and Toxins
Category 2	Materials Processing
Category 3	Electronics
Category 4	Computers
Category 5	Telecommunications (Part I) and Information Security (Part II)
Category 6	Sensors and Lasers
Category 7	Navigation and Avionics
Category 8	Marine
Category 9	Aerospace and Propulsion

(2) The second position is a letter to identify the CCL product group as shown in Table 25.

Table 25. CCL Product Groups

Group A	End Items, Equipment, Accessories, Attachments, Parts, Components, and Systems
Group B	Test, Inspection, and Production Equipment
Group C	Materials
Group D	Software
Group E	Technology

(3) The third position is a number which identifies the CCL primary reason (or reasons) for control contained in the entry as shown in Table 26.

Table 26. CCL Primary Reason (or Reasons) for Control

3rd Position	Reason(s) for Control
0	National Security
1	Missile Technology
2	Nuclear Nonproliferation
3	Chemical and Biological Weapons
5	National Security (Spacecraft)*
6	National Security (Military Related)*
9	Anti-Terrorism; Crime Control; Encryption Items; Firearms Convention; Regional Stability; Short Supply; United Nations Embargo; Significant Items; Surreptitious Listening
*ECCNs that are 600 Series or 9x515 items, for the purposes of DEMIL coding, are listed in Part 2 of selected Tables 3 to 23. This section specifically addresses items that are not 600 series or 9x515 items.	

c. Control Under the EAR. The EAR controls specific items found on the CCL based on objective technical characteristics as well as other items based on a series of general criteria in accordance with Parts 730-774 of Title 15, CFR. All such items are considered subject to the EAR.

(1) To classify an item subject to the EAR against the CCL, review the general characteristics of the item. This will usually guide you to the appropriate category described in Table 24.

(2) Once a potentially applicable CCL category is described, determine which product group described in Table 25 within the CCL category applies to the item. If the third digit is a 5 or 6, go back to step 2 of Table 2.

(3) Then start from the beginning of the product group and examine each ECCN to determine whether a specific ECCN describes the item.

d. Finding an ECCN.

(1) To narrow the search within the CCL category and group, each ECCN will have a heading with a brief description as shown in Figure 3.

Figure 3. Example of an ECCN Heading

3A001 Electronic components and "specially designed components" therefor, as follows (see List of Items Controlled).

(2) After the brief description for each ECCN in the CCL, there are three sections titled, "License Requirements," "License Exceptions," and "List of Items Controlled." Only the "List of Items Controlled" section of an ECCN needs to be reviewed to determine if the item is described in the CCL and not the USML. This section provides "Units," "Related Controls," "Related Definitions," and "Items" applicable to the ECCN entry.

(a) Related Controls as shown in Figure 4 will indicate if another U.S. Government agency or department has authority and control.

Figure 4. Example of Related Controls

List of Items Controlled *Related Controls:* (1) See Category XV of the USML for certain "space-qualified" electronics and Category XI of the USML for certain ASICs "subject to the ITAR" (see 22 CFR parts 120 through 130). (2) See also 3A101, 3A201, 3A611, 3A991, and 9A515.

(b) The items described in the ECCN are listed following the word "Items." The coder must be careful when reading an ECCN for the first time to avoid missing this information and possibly interpreting the ECCN header as the definitive item identification (see Figure 5 for an example). In some entries, the list is contained within the entry heading as shown in Figure 6.

Figure 5. Example of Items Header

Related Definitions: N/A *Items:* Military aircraft, demilitarized (not specifically equipped or modified for military operation), as follows:

Figure 6. Example of Items Controlled in ECCN Heading

Items: The list of items controlled is contained in the ECCN heading.

e. DEMIL Coding of Non-Military or Non-Spacecraft CCL Items.

(1) Coders assign:

(a) DEMIL code "Q" for items with a specific ECCN.

(b) DEMIL code "A" for items that do not have a specific ECCN

(2) Items assigned DEMIL code "A" are still subject to the EAR in accordance with Parts 730-774 of Title 15, CFR and designated "EAR99" as shown in Figure 7. These may require a license from the DOC for export.

Figure 7. EAR99 Statement

EAR99 Items subject to the EAR that are *not* elsewhere specified in this CCL Category *or* in any other category in the CCL are designated by the number *EAR99*.

4.2. SENSITIVE AND NON-SENSITIVE CCLI. After the coders assign a DEMIL code "Q" for items with a non 600 series ECCN, the DoD DEMIL Program Manager and the DoD DEMIL Coding Management Office:

a. Identify the sensitive and non-sensitive CCLI.

b. Assign an integrity code based on the reason for control as shown in Figure 8.

Figure 8. Sensitivity Based on Reasons for Control

SENSITIVE DEMIL Q _ IC-3	NON-SENSITIVE DEMIL Q _ IC-6
NS = National Security = 0 NS = National Security (Spacecraft) = 5 NS = National Security (Military) = 6 MT = Missile Technology = 1 NP = Nuclear Nonproliferation = 2 CB = Chemical & Biological Weapons = 3 CW = Chemical Weapons Convention = 3	AT = Anti-Terrorism = 9 CC = Crime Control = 9 EI = Encryption Items = 9 FC = Firearms Convention = 9 RS = Regional Stability = 9 SS = Short Supply = 9 UN = United Nations Embargo = 9 SI = Significant Items = 9 SL = Surreptitious Listening = 9

GLOSSARY

G.1. ACRONYMNS.

AE	ammunition and explosives
AFTTP	Air Force Tactics, Techniques, and Procedures
ASD(S)	Assistant Secretary of Defense for Sustainment
ASIC	application specific integrated circuit
ATP	Army Techniques Publication
CAS	Chemical Abstracts Service
CCL	Commerce Control List
CCLI	Commerce Control List item
CE90	circular error at 90 percent confidence
CFR	Code of Federal Regulations
dB	Decibel
dBm	decibel-milliwatts
DEMIL	demilitarization
Dl	delta lambda
DLA	Defense Logistics Agency
DOC	Department of Commerce
DoDD	DoD directive
DoDI	DoD instruction
EAR	Export Administration Regulations
ECCN	Export Control Classification Number
Em	electromagnetic
fGHz	frequency in gigahertz
ft	Feet
FWHM	full width at half maximum
GHz	Gigahertz
GNSS	Global Navigation Satellite System
GPS	global positioning system
GSD	ground sample distance
Gy	Gray
HazMat	hazardous material
HMD	helmet mounted display
IC	integrity code
ITAR	International Traffic in Arms Regulations

kg	Kilogram
kHz	Kilohertz
km	Kilometer
kW	Kilowatt
lbf	pound-force
LPI	low probability of intercept
MANPADS	man-portable air defense systems
MCRP	Marine Corps Reference Publication
MeV	million electron volts
MHz	Megahertz
MIL-DTL	Military Detail Specification
MIL-PRF	Military Performance Specification
MLI	Munitions List Item
mm	Millimeter
MMIC	monolithic microwave integrated circuit
mPa	Megapascal
MUT	mutilation
NIJ	National Institute of Justice
nm	Nanometer
nmi	nautical mile
NSN	national stock number
NTTP	Naval Tactics, Techniques and Procedures
PLD	programmable logic devices
Psat	saturated peak output power
Rads	absorbed radiation dose
RCS	radar cross section
RF	radio frequency
Si	system of units
SLV	space launch vehicle
SME	significant military equipment
UAV	unmanned aerial vehicle
USD(A&S)	Under Secretary of Defense for Acquisition and Sustainment
USDOT	U.S. Department of Transportation
USML	U.S. Munitions List
VNIR	visible and near infrared
WHEC	Coast Guard high endurance cutter
WMEC	Coast Guard medium endurance cutter

WMSL	Coast Guard maritime security cutter, large
WPB	Coast Guard patrol boat

G.2. DEFINITIONS. Unless otherwise noted, these terms and their definitions are for the purpose of this issuance.

accessories and attachments. Defined in Parts 120-130 of Title 22, CFR.

AE. Defined in DoD 6055.09-M.

CCL. Defined in Part 772 of Title 15, CFR.

CCL Military items. Any item previously controlled on the U.S. Munitions List that was moved to the CCL under the Export Control Reform Initiative.

CCLI. Defined in Part 774 of Title 15, CFR.

components. Defined in Parts 120-130 of Title 22, CFR.

defense articles. Defined in Section 120.6 of Title 22, CFR.

defense services. Defined in Section 120.9 of Title 22, CFR.

DEMIL. The act of eliminating the functional capabilities and inherent military design features from DoD personal property that requires certification and verification. Methods and degree range from removal and destruction of critical features to total destruction by cutting, crushing, shredding, melting, burning, etc. DEMIL is required to prevent property from being used for its originally intended purpose and to prevent the release of inherent design information that could be used against the United States. DEMIL applies to material in both serviceable and unserviceable condition.

DEMIL code. A code assigned to DoD personal property. It indicates the degree of required physical destruction, identifies items requiring specialized capabilities or procedures, and identifies items which do not require DEMIL but may require TSC. It is used throughout the life-cycle to identify control requirements required before release of DoD personal property from DoD control.

disposal. Defined in DoDM 4160.21.

disposition. Defined in DoDM 4160.21.

DoD personal property. Defined in DoDM 4160.21.

dual-use. Defined in Parts 730-774 of Title 15, CFR.

EAR99. Items subject to the EAR in accordance with Parts 730-774 of Title 15, CFR that are not elsewhere specified in a CCL category.

ECCN. Defined in Parts 730-774 of Title 15, CFR.

end items. Defined in Parts 120-130 of Title 22, CFR.

export. Defined in DoDI 2030.08.

firearm. A weapon not over .50 caliber (12.7 mm) which is designed to expel a projectile by the action of an explosive or which may be readily converted to do so.

HAVE QUICK. Defined in ATP 6-02.72/MCRP 3-40.3A /NTTP 6-02.2 /AFTTP 3-2.18.

key points for DEMIL. The parts, components, alignment points, attachment fittings, or features of a next higher assembly which require DEMIL.

imide matrix. A mixed matrix organic compound related to ammonia.

IC. A code assigned by the DoD DEMIL Coding Management Office that identifies the result of a DEMIL code validation performed in accordance with Section 6 in Volume 1 of DoDM 4160.28.

materiel. Defined in DoDI 4140.01.

major components. Components essential to the operation of an end item and become key points for DEMIL.

minor components. Components that are elements of a major component that do not require DEMIL but may require MUT.

MLI. Any item contained on the USML listed in Part 121 of Title 22, CFR.

MUT. The act of making non-DEMIL required MLI or CCLI unfit for its intended purpose by cutting, tearing, scratching, crushing, breaking, punching, shearing, burning, neutralizing, etc.

ohms-per-square. The unit of measurement when measuring the resistance of a thin film of a material using the four point probe technique. It is equal to the resistance between two electrodes on opposite sides of a theoretical square. The size of the square is unimportant.

parts. Defined in Parts 120-130 of Title 22, CFR.

payload. The total mass that can be carried or delivered by the specified rocket, SLV, or missile that is not used to maintain flight.

pistol. A hand-operated firearm having a chamber integral with or permanently aligned with the bore.

power supplies. A source of electric power to operate electronic circuits.

range. The maximum distance that the specified rocket system is capable of traveling in the mode of stable flight as measured by the projection of its trajectory over the surface of the Earth. The maximum capability based on the design characteristics of the system, when fully loaded with fuel or propellant, will be taken into consideration in determining range. The range for rocket systems will be determined independently of any external factors such as operational restrictions, limitations imposed by telemetry, data links, or other external constraints. For rocket systems, the range will be determined using the trajectory that maximizes range, assuming International Civil Aviation Organization standard atmosphere with zero wind.

revolver. A hand-operated firearm with a revolving cylinder containing chambers for individual cartridges.

rifle. A shoulder firearm.

scrap. Defined in DoDI 2030.08.

significant military equipment. Defined in Parts 120-130 of Title 22, CFR.

space grade. Characteristics of aerospace products such as lightweight, durable, or able withstand exposure to extreme variations in temperature and pressure.

specially designed. Defined in Part 120.41 of Title 22, CFR for Part 1 of Tables 3 to 23. Defined in Part 772 of Title 15, CFR for Part 2 of Tables 3 to 23.

subject to the EAR. Defined in Part 734.2 of Title 15, CFR.

submachine gun. A firearm designed to fire automatically by a single pull of the trigger.

technical data. Defined in Parts 120-130 of Title 22, CFR.

TEMPEST. Defined in the DoD Dictionary of Military and Associated Terms.

trade security controls. Defined in DoDI 2030.08.

USML. A list, published by the Department of State in Part 121 of Title 22, CFR which delineates the articles, services, and related technical data designated as defense articles and defense services.

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