



## 22 CFR Part 121

[Public Notice: 12441]

RIN 1400-AF42

### International Traffic in Arms Regulations: U.S. Munitions List Targeted Revisions

**AGENCY:** Department of State.

**ACTION:** Interim final rule; request for comments.

**SUMMARY:** The Department of State (the Department) amends the International Traffic in Arms Regulations (ITAR) to remove from the U.S. Munitions List (USML) items that no longer warrant inclusion, add to the USML items that warrant inclusion, and clarify certain entries.

With these amendments, the Department also supersedes and thus terminates the temporary modification to USML Category VIII that was published on December 4, 2023, and extended on November 26, 2024.

**DATES:** *Effective date:* September 15, 2025.

*Comment due date:* Send comments by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** Interested parties may submit comments to the Department of State by any of the following methods:

- Visit the Regulations.gov website at: <https://www.regulations.gov> and search for the docket number DOS-2024-0047.
- Email: [DDTCPublicComments@state.gov](mailto:DDTCPublicComments@state.gov). Commenting parties must include RIN 1400-AF42 in the subject line of the email message.

See SUPPLEMENTARY INFORMATION for other information about electronic filing.

**FOR FURTHER INFORMATION CONTACT:** Mr. Robert Rasmussen, Office of Defense Trade Controls Policy, Department of State, telephone (202) 663-2217; e-mail

DDTCCustomerService@state.gov SUBJECT: ITAR Amendment – USML Targeted Revisions  
(RIN 1400-AF42)

**SUPPLEMENTARY INFORMATION:** The Department of State’s Directorate of Defense Trade Controls (DDTC) administers the ITAR (22 CFR parts 120 through 130) to, among other things, regulate the export, reexport, retransfer, and temporary import of the defense articles and defense services identified on the USML at ITAR § 121.1. Items not subject to the ITAR or to the exclusive licensing jurisdiction of any other department or agency of the U.S. Government are subject to the Export Administration Regulations (EAR, 15 CFR parts 730 through 774, which includes the Commerce Control List (CCL) in Supplement No. 1 to part 774). The EAR is administered by the Bureau of Industry and Security (BIS), U.S. Department of Commerce. This rule does not modify the list of defense articles and defense services controlled for purposes of permanent import by the Attorney General, as enumerated on the U.S. Munitions Import List (USMIL) at 27 CFR 447.21.

Section 38 of the Arms Export Control Act (AECA) (22 U.S.C. 2778), the authority from which the ITAR is derived, requires periodic review to determine what articles and services, if any, no longer warrant designation on the U.S. Munitions List at 22 CFR 121.1. In maintaining the USML, DDTC’s Office of Defense Trade Controls Policy (DTCP) identifies articles and services for review through a variety of methods, including informal public and interagency comment, commodity jurisdiction reviews, advisory opinions, and technology monitoring. The Department maintains the USML such that it comprises those defense articles or defense services that provide a critical military or intelligence advantage or, in the case of firearms, have an inherently military function. The Department, informed by consultations with its interagency partners, determined that the additional defense articles this rule designates on the USML warrant ITAR control and those articles it removes from the USML no longer do. This rule also amends certain language that describes items on the USML to provide additional clarity to the regulatory language.

## **22 CFR 121.0**

The Department incorporates definitional language and abbreviations currently found in various notes in the USML into 22 CFR 121.0, *United States Munitions List descriptions and definitions*. Section 121.0 is amended to remove the structure of paragraphs (a) and (b) and to add definitions to the USML in an alphabetical list. The definition previously at § 121.0(b) is now listed in its alphabetical order in § 121.0. Current § 121.0(a) is moved to the introductory text of § 121.0.

### **USML Category II**

In USML Category II, Note 2 to paragraph (a)(5) is revised to correct a typographical error.

### **USML Category IV**

USML Category IV paragraph (c) is revised and paragraphs (c)(1) and (2) are added to more clearly describe the equipment controlled therein, and to differentiate between equipment specially designed for commodities enumerated in paragraphs (a) or (b) of Category IV under the new paragraph (c)(1), and equipment specially designed for improvised explosive devices (IEDs) under the new paragraph (c)(2), similar to how they are differentiated in paragraph 4.b of the Wassenaar Arrangement Munitions List. This amendment also replaces the undefined term “apparatus and devices” with the § 120.40 defined term “equipment.”

### **USML Category V**

USML Category V paragraph (c)(2) is revised to add the CAS Registry Number for pentaborane and to replace the comma after “pentaborane” with a semicolon, in order to clarify this paragraph describes derivatives of carboranes, decaboranes, and pentaborane. Paragraph (f)(4)(x) is revised to correct the CAS Registry Number. Paragraphs (e)(10), (f)(19), and (g)(4) are revised to correct typographical errors.

## **USML Category VII**

Note 3 to USML Category VII is revised to further clarify the universe of ground vehicles described, with no change to the scope of controls. Specifically, the types of vehicular control and locomotion employed are irrelevant when evaluating a vehicle against the control criteria. The Department affirms that although some unmanned ground vehicles, based on their method of control or locomotion, may be referred to by the public colloquially as “robots,” they must still be evaluated against the criteria in USML Category VII.

## **USML Category VIII**

USML Category VIII(h)(1) is revised to clarify which commodities are described therein by incorporating relevant portions of the existing note to paragraph (h)(1). This revision also serves to facilitate reference to the included list of aircraft by other USML paragraphs, and to better align controls with the Department’s intent around U.S. Government technology demonstrators. Additionally, it precludes release of commodities from paragraph (h)(1) based solely on their subsequent use in aircraft included in USML Category XXI (pursuant to the procedures therein) or in foreign advanced military aircraft. Foreign advanced military aircraft, as newly defined in § 121.0, include non-U.S. origin aircraft and foreign derivatives of U.S. origin aircraft, either in development or entering production after 2023, with one or more of the following advanced military capabilities: Active Electronically Scanned Array (AESA) fire control radar, integrated signature management, electronic warfare systems, or the ability to engage targets beyond visual range (BVR). The Department further highlights the use of the term “AESA *fire control* radar” to ensure that AESA weather radars commonly used in civil aviation are clearly excluded from this list of advanced military capabilities. The year 2023 was chosen as the production year in this definition to ensure alignment with the temporary modification to the USML issued on December 4, 2023 (88 FR 84072), and extended on November 26, 2024 (89 FR 93170), which states that parts used in or with the KF-21 continue to be described on the USML.

As practitioners have confused the F-15SE (Silent Eagle) with the F-15E (Strike Eagle), the F-15SE nomenclature is also clarified. Further, the “B1B” is replaced by “B-1.” As the B-1A never entered into production, this change does not change the export classification of existing items. The Department makes this change consistent with the majority of aircraft listed in the paragraph and its intent to include future variants of those aircraft. The Department notes the only aircraft listed with series letters (F-15SE, F/A-18E/F, and EA-18G) in this paragraph intentionally exclude earlier variants (for example, the control does not include the F-15A, which is an F-15 variant developed before the F-15SE). Additionally, the Department adds the MQ-25 and the RQ-170 to the list of aircraft in paragraph (h)(1)(i). The MQ-25 provides a critical military advantage in its ability to support the future Navy carrier air wing and is central to the Navy’s strategic Unmanned Campaign Framework. The RQ-170 is a high-altitude, long-endurance, low-observable unmanned aerial vehicle that provides a critical military and intelligence advantage in its ability to perform key intelligence, surveillance, reconnaissance, target acquisition, and electronic warfare functions. Paragraph (h)(1) describes articles used in some of the most advanced U.S. military aircraft. The changes to paragraph (h)(1) ensure those specially designed articles are not released from this entry based on their subsequent use in USML Category XXI aircraft, foreign advanced military aircraft, or U.S. Government (USG) technology demonstrator aircraft.

Ensuring those elements are not released from paragraph (h)(1) based on subsequent use in foreign advanced military aircraft is consistent with the language of § 120.3(a)(2). With this change, the Department treats use of these commodities in foreign advanced military aircraft as it has in their use in advanced U.S. military aircraft. This addition facilitates opportunities for reuse and commonality with partner aircraft by enabling U.S. content to be utilized in those platforms without unnecessary redesigns or unmerited removal from the USML.

The Department further considered amending the language to remove commodities designed exclusively for non-Department of Defense (DoD) USG technology demonstrators

from paragraph (h)(1). The Department declines to do so, as such commodities are generally not currently described in paragraph (h)(1). Specifically, USG technology demonstrators are unique among the aircraft listed in paragraph (h)(1), as some technology demonstrators are described on the USML, while others are not. The Department notes commodities used in technology demonstrators are often developed exclusively for those demonstrators or repurposed from other USML or CCL platforms for time and cost savings; those commodities must be reviewed on a case-by-case basis for proper export classification. Specifically, *for USG technology demonstrators that are themselves not described on the USML (“these aircraft”)*, it is generally the case that:

- Articles designed for and used only in other aircraft listed in paragraph (h)(1) before and during subsequent unmodified use in *these aircraft* generally remain described in paragraph (h)(1), as explained by the following analysis:
  - In the context of paragraph (h)(1), such articles meet the criteria in, and thus are caught by, § 120.41(a)(1) as having properties peculiarly responsible for the controlled characteristic (i.e., their use in the listed aircraft), and (a)(2) for their use in or with the other listed aircraft.
  - In the context of paragraph (h)(1), such articles are not released by § 120.41(b)(3), (4), or (5), as they were originally developed for aircraft described in either USML Category VIII or XXI, and the USG technology demonstrator does not enter production as defined in § 120.43.
- Articles designed for, and used in, aircraft subject to the EAR prior to unmodified use in *these aircraft* are not described in paragraph (h)(1) but may be described elsewhere on the USML, as explained by the following analysis:
  - In the context of paragraph (h)(1), there are circumstances wherein such articles would be released by § 120.41(b)(3), regardless of meeting the criteria in § 120.41(a).

- With contemporaneous documentation, there are circumstances in which the articles would also be released by paragraph (b)(4) or (5).
- Articles designed for, and only used in, *these aircraft* are not described in paragraph (h)(1), but may be described elsewhere on the USML, as explained by the following analysis:
  - In the context of paragraph (h)(1), such articles meet the criteria in § 120.41(a)(1) as having properties peculiarly responsible for the controlled characteristic (i.e., their use in the listed aircraft), but not (a)(2) unless they are used in or with a defense article.
  - In the context of paragraph (h)(1), such articles are not released by § 120.41(b)(3), as the USG technology demonstrator does not enter production. However, they could be released by paragraph (b)(4), as they were developed with the knowledge they would be used in *these aircraft*, often in a system that is subject to the EAR.
- In contrast, articles designed for, and only used in, USG technology demonstrators described on the USML are described in paragraph (h)(1), as explained in the following analysis:
  - In the context of paragraph (h)(1), such articles meet the criteria in § 120.41(a)(1) as having properties peculiarly responsible for the controlled characteristic (i.e., their use in the listed aircraft), and (a)(2) for their use in or with aircraft described in USML Category VIII.

In the context of paragraph (h)(1), such articles are not released by § 120.41(b)(3), (4), or (5), as they were originally developed for an aircraft described in USML Category VIII. The Department is also amending the text of the current “Note to paragraph (h)(1),” redesignating it as “Note 1 to paragraph (h)(1),” and adding “Note 2 to paragraph (h)(1).” The addition of “Note 2 to paragraph (h)(1)” outlines an example of the scope of paragraph (h)(1) for articles used in USG technology demonstrators.

With these revisions to paragraph (h)(1) and the notes to paragraph (h)(1), the Department also terminates the temporary modification to Category VIII of the USML that was issued on December 4, 2023 (88 FR 84072) and extended on November 26, 2024 (89 FR 93170).

The Department notes certain commodities designed exclusively for DoD-funded developmental aircraft, including aircraft jointly funded by DoD and another agency, remain defense articles described in paragraph (f) of USML Category VIII.

Paragraph (h)(29) of USML Category VIII is revised to clarify the commodities described therein include both those designed for the aircraft listed and the defense articles described in paragraph (h)(1), with a change in control via the removal of commodities specially designed for USG technology demonstrators.

The note located at the end of USML Category VIII is moved to follow USML Category VIII paragraph (h), renamed “Note 1 to paragraph (h),” and revised for clarity, with no change in scope.

### **USML Category IX**

USML Category IX(e)(2) is placed in reserve to eliminate redundancy. Technical data directly related to the software and databases enumerated in paragraph (b)(4) is already described in paragraph (e)(1).

### **USML Category X**

Developmental exoskeletons have been identified as a technology warranting ITAR control due to the critical military advantage they provide. Thus, Category X is amended by removing paragraph (b) from reserve and adding a new paragraph (b) to describe exoskeletons under development for DoD, along with standard exclusions applied to other developmental articles to provide advance notice to industry and to avoid controlling those that do not provide a critical military advantage.

The Department also amends Category X to align body armor protection levels with the most recent NIJ standard, 0123.00, “Specification for NIJ Ballistic Protection Levels and

Associated Test Threats.” All references to “NIJ Type IV” have been updated to NIJ RF3. “Note 1 to paragraph (a)(1)” and “Note to paragraphs (a) and (d)” have also been updated to reference the new standard. “Note to paragraphs (a) and (d)” is redesignated as “Note 1 to paragraphs (a) and (d).”

### **USML Category XI**

USML Category XI paragraphs (c)(10)(i) and (ii) are revised to reflect that certain anti-jam antennas no longer provide a critical military advantage, with increasing commercial utilization applicable to civil GPS resiliency. Following consultations with DoD, the beam switching speed criterion in paragraph (c)(10)(i) is revised from 50 milliseconds down to one millisecond, and the convergence time criterion in paragraph (c)(10)(ii) is revised from one second down to one millisecond, as the Department seeks to control only the most sensitive and effective anti-jam antennas in USML Category XI(c)(10)(i) and (ii). The Department further intends to exclude Controlled Reception Pattern Antennas (CRPAs) for Position, Navigation, and Timing (PNT) from paragraph (c)(10). To implement this, the Department is removing all CRPAs from paragraphs (c)(10)(i) and (ii) and adding paragraphs (c)(10)(v) and (vi) to describe the CRPAs for non-PNT applications that meet the updated criteria used in paragraphs (c)(10)(i) and (ii) the CRPA antennas were moved from. In removing CRPAs for PNT, the Department intends to facilitate civil global navigation system resiliency. CRPAs use multiple elements and advanced signal processing techniques to dynamically control their reception pattern, thereby enhancing signal reception from desired directions and suppressing interference from undesired directions. Generally, in comparing CRPAs to the antennas that remain described in paragraphs (c)(10)(i) and (ii), CRPAs are more optimized to control the reception pattern instead of the transmission beam steering or switching. This is in line with the Position, Navigation, and Timing, Advisory Board’s (PNTAB) recommendation to remove CRPAs from the USML. The antennas removed from the USML by these changes are neither subject to multilateral controls nor controlled as munitions in other countries that produce them. Once removed from the USML,

these anti-jam antennas will become subject to the EAR under the jurisdiction of the Department of Commerce.

### **USML Category XII**

USML Category XII paragraph (d)(2)(ii) is revised to update the language to reflect the current description of Positioning Service from Precise Positioning Service to Protected Positioning Service (PPS). In the 2021 Federal Radionavigation Plan published by the Departments of Defense, Transportation, and Homeland Security (available at <https://rosap.ntl.bts.gov/view/dot/63024>), PPS has been updated to “Protected” Positioning Service from the former “Precise” Positioning Service. This change accurately reflects the technology’s ability to operate in degraded environments as opposed to legacy encryption abilities that facilitate greater position precision and no longer provide a critical military advantage.

### **USML Category XIII**

USML Category XIII paragraph (b)(4) is revised to update the name of the Unified Cross Domain Management Office (UCDMO) to the National Cross Domain Strategy and Management Office (NCDSMO).

The Department further amends Category XIII to align armor protection levels with the most recent NIJ standard, 0123.00, “Specification for NIJ Ballistic Protection Levels and Associated Test Threats.” All references to “NIJ Level III” are updated to NIJ RF1. As the new RF1 standard corresponds to the previous Type III standard, this is not a significant change in control. The reference in paragraph (m)(10) is also updated to reference the new standard.

Additionally, paragraph (e)(2) is revised for clarification and to add paragraphs (e)(2)(i) and (ii). Category XIII is further revised to add specific fluids to the USML in paragraph (j)(3). Each of these fluids was developed for one or more critical military applications for which existing fluids were unsuitable; by including a specially designed criterion, general-purpose

fluids subsequently selected for use in a military application are not described by this control.

Lastly, paragraph (m)(9) is amended to clarify the definitions of variables in the equation for  $E_m$ .

#### **USML Category XIV**

Additional nerve agents and a defoliant are added to USML Category XIV in paragraphs (a)(1)(iv) through (viii) and (j), and controls on Chemical Agent Resistive Coatings (CARC) are clarified in paragraph (f)(7). The nerve agent additions are made pursuant to changes to Schedule 1 of the Chemical Weapons Convention, while the defoliant addition is a constituent of Agent Orange, for which the Department is unaware of current commercial applications.

The clarification of CARC controls in paragraph (f)(7) is made consistent with longstanding policy published on DDTC's website. As CARC is controlled only through the point of application and curing, export applications for CARC must specify the proposed end-users and end-uses, and export licenses for CARC impose limitations on the same. Of note, the control release for CARC that has been applied and cured only applies to USML Category XIV(f)(7); this release does not apply to coatings or materials described elsewhere on the USML. For example, when a USML Category XIII(j)(2) coating is applied to an item subject to the EAR, a DDTC license or other approval continues to be required for the coating, when the item to which the coating was applied is exported, reexported, or retransferred.

#### **USML Category XIX**

USML Category XIX paragraphs (d) and (f)(1) are amended to add specific DoD-funded aircraft engines in development that provide a critical military or intelligence advantage, as well as their specially designed parts, components, accessories, and attachments. Specifically, paragraph (d) is split into two parts, paragraphs (d)(1) and (2), and amended to include the XT900, which is a developmental engine resulting from the enumerated HPW3000 technology demonstrator.

The note to paragraph (d) is redesignated as the note to paragraph (d)(1), to continue its applicability to the engines in former paragraph (d) following their movement to

paragraph (d)(1), with no change in scope. Paragraph (f)(1) is amended to include specially designed parts, components, accessories, and attachments for the engine now described in paragraph (d)(2), and to incorporate a portion of the note to paragraph (f)(1). The remainder of the note to paragraph (f)(1) is redesignated as “Note 1 to paragraph (f)(1)” and revised for clarity. Paragraph (f)(1) is further amended to clarify that parts, components, accessories, and attachments are not released if common only to a listed engine and an engine designated in USML Category XXI(a), and to add a catch-all control for XA100, XA101, XA102, XA103, and T901 engine hardware. The XA-series engines represent a substantial leap in propulsion capability. Items specially designed for these engines provides a critical military or intelligence advantage in enabling the engines to provide improved thrust-to-weight capability while addressing fuel efficiency, affordability, and sustainment for warfighter operational readiness. The T901 powers the Future Vertical Lift platform and provides 33% more thrust than, but retains the same size as, its predecessor.

Paragraph (f)(2) is amended to clarify the items described in paragraph (f)(2) by replacing a term of art (“hot section components”) with defined regulatory terms (hot section “parts” and “components”), with no change in scope, and to add related cooled structures for combustion chambers and liners. Punctuation is also updated with no change in scope.

### **USML Category XX**

USML Category XX is amended to add paragraphs (a)(9) and (10) to control two new classes of uncrewed, untethered vessels and vehicles that provide a critical military advantage: specifically, those equipped with anti-recovery features, and larger systems with significant range or endurance. Paragraph (a)(10) includes criteria to avoid control of systems below certain weight and performance thresholds the Department assesses are best suited for scientific research or commercial applications. Tethered systems are similarly excluded from both paragraphs (a)(9) and (10).

USML Category XX(b)(2) is revised for clarity, with no change to the scope of the control.

### **USML Category XXI**

USML Category XXI is amended to move the second sentence of paragraph (a) into a new note, and to further clarify the considerations when designating an article in USML Category XXI.

### **Effective Date and Updating of Licenses and Agreements**

The Department notes it previously provided a 180-day transition period between the publication of the final rule for reviews of entire USML categories revised under Export Control Reform and the effective date of the transition of items to updated classifications. *See* 78 FR 22740, 22747 (Apr. 16, 2013). While the Department has also recently issued rules with shorter transition periods, the Department provides a 240-day delayed effective date for this rule. Consistent with prior revisions of USML categories, additional guidance that addresses specific licensing scenarios will be provided on DDTC's website.

### **Timeline for Applications, Amendments, and Grandfathering**

#### *Items Transitioning Jurisdiction from the ITAR to the EAR*

Items removed from a USML paragraph by this rule may still be described in other USML paragraphs or may become subject to the export licensing jurisdiction of the Department of Commerce pursuant to the EAR. Exporters should evaluate the control status of their item using the orders of review in the ITAR and the EAR and may submit a commodity jurisdiction request to DDTC for assistance or – if there is no doubt it is subject to the EAR – a commodity classification request to BIS. Licensing requirements under the EAR are determined by the reasons for control applicable to the item, the destination, the end use, and the end user. General Order No. 5 in supplement no. 1 to part 736 of the EAR describes the transition process for items moving from the USML to the CCL upon the publication of the pertinent final rules. The general order describes the grandfathering of DDTC licenses and agreements, the use of BIS

authorizations, and the submission of disclosures to BIS and DDTC related to the transition of items from the USML to the CCL.

For those wishing to export under the authority of the EAR as soon as possible for items moving from the USML to the CCL, applicants may submit license applications immediately after the publication of the BIS final rule adding such items to the CCL. Thus, applicants may, in effect, pre-position license applications early to facilitate processing of the license application. Such a pre-positioned license application will be processed in accordance with § 750.4 of the EAR, but if BIS completes processing the application prior to the effective date of the applicable final rule, BIS will hold the application without action (HWA), until the effective date of that final rule. Applications for transitioned items received after the effective date of the final rule will be processed as described in § 750.4 of the EAR.

Existing holders of DDTC licenses, agreements, or other approvals, may maintain existing authorizations or obtain new authorizations for items moving from the USML to the CCL. Questions regarding the continued use of DDTC licenses, agreements, or other approvals should be directed to DDTC.

#### *Acceptance of Licenses*

During the transition period, license applications will be accepted by both DDTC and BIS for items moving from the USML to the CCL. BIS will not issue approved licenses for such items until on or after the effective date of this rule.

**DSP-5 Licenses:** Licenses for items transitioning to the CCL that are issued prior to the effective date of the final rule and do not include items remaining on the USML will remain valid until expired, returned by the license holder, or for a period of three years from the effective date of the final rule, whichever occurs first, unless otherwise revoked, suspended, or terminated. Licenses containing both transitioning and non-transitioning items (mixed authorizations) will remain valid until expired or returned by the license holder, unless otherwise revoked, suspended, or terminated. Any limitation, proviso, or other requirement required by the

DDTC authorization remains in effect if the DDTC authorization is relied upon for export, re-export, or re-transfer. License amendment requests received by DDTC prior to the effective date of the rule will be adjudicated on a case-by-case basis up until the effective date of the rule.

**DSP-61 and DSP-73 Licenses:** All temporary licenses that are issued in the period prior to the effective date of the rule will remain valid until expired or returned by the license holder, unless otherwise revoked, suspended, or terminated. Any limitation, proviso, or other requirement imposed on the DDTC authorization will remain in effect if the DDTC authorization is relied upon for export. License amendment requests received by DDTC before the effective date of the rule will be adjudicated on a case-by-case basis until the effective date of the rule. All license applications, including amendments, received after the effective date for items that are transitioning to the CCL that are not identified in an (x) paragraph entry will be Returned Without Action (RWA) with instructions to contact the Department of Commerce.

**Technical Assistance Agreements, Manufacturing License Agreements, Distribution**

**Agreements, and Related Reporting Requirements:** Agreements and amendments containing both USML and CCL items will be adjudicated up to the effective date of the final rule.

Agreements containing transitioning and non-transitioning items that are issued prior to the effective date of the final rule will remain valid until expired, unless they require an amendment, or for a period of three years from the effective date of the final rule, whichever occurs first, unless otherwise revoked, suspended, or terminated. In order for an agreement to remain valid beyond three years, an amendment must be submitted to authorize the CCL items using the new (x) paragraph from the relevant USML category. Any activity conducted under an agreement will remain subject to all limitations, provisos, and other requirements stipulated in the agreement.

Agreements containing solely transitioning items issued prior to the effective date of the final rule will remain valid for a period of three years from the effective date of the rule, unless revoked, suspended, or terminated. After the three-year period ends, any ongoing activity must

be conducted under the appropriate Department of Commerce authorization. Agreements and agreement amendments solely for items moving to the CCL which are received after the effective date of the rule will be Returned Without Action (RWA) with instructions to contact the Department of Commerce.

All reporting requirements for Manufacturing License Agreements and Distribution Agreements must be complied with and such reports must be submitted to the Department of State while the agreement is relied upon as an export authorization by the exporter.

**Reexport/Retransfer of USML Items That Have Transitioned to the CCL:** Foreign persons or U.S. persons abroad that have USML items in their inventory at the effective date of transition should review both the USML and the CCL to determine the proper export jurisdiction of those items. If the item is controlled by the Department of Commerce, any reexport or retransfer must comply with the requirements of the EAR. If doubt exists on the jurisdiction of the items, the foreign person should contact the original exporter or manufacturer. In instances when those parties are unavailable, the foreign person should review the DDTC or BIS website for guidance and support options.

Following the effective date, foreign persons (including end-users, consignees, and intermediate consignees) who receive, via a Department of State authorization, an item they are certain has transitioned to the CCL (e.g., confirmed in writing by manufacturer or supplier), should treat the item as such and submit requests for post-transition reexports or retransfers to the Department of Commerce, as may be required by the EAR. If reexport or retransfer was previously authorized under an MLA or WDA that continues to provide the export authority or any stand-alone reexport/retransfer authorization received pursuant to ITAR § 123.9, such authorizations remain valid.

*Items Transitioning to the USML*

For those wishing to export under the authority of the ITAR as soon as possible for items moving onto the USML, applicants may submit license applications as soon as this rule is published in the *Federal Register*.

#### *Submission of Voluntary Self-Disclosures*

In reviewing the clarifications provided by this rule, if you identify a potential violation of the ITAR, you are encouraged to submit a voluntary disclosure to DDTC, consistent with the procedures outlined in § 127.12. For potential violations of the EAR, persons are encouraged to submit voluntary self-disclosures to BIS. For potential violations of both the EAR and the ITAR, persons are encouraged to submit disclosures to both agencies.

#### **Request for Comments**

Consistent with its ongoing USML review process, the Department is requesting public comments on the revisions described in this rulemaking. The Department encourages the public to provide comments directly related to this rule and responsive to the questions described below. To facilitate timely review and assessment, comments should be provided in a concise sentence or paragraph, followed by supporting explanatory paragraphs and examples, with each distinct comment treated separately (as opposed to multiple comments in one paragraph or section). The Department requests comments focused on the following questions:

1. How much would practitioners benefit from the Department defining the term “Controlled Reception Pattern Antennas (CRPAs)” as used in USML Category XI(c)(10)? Are there criteria, other than those described in the preamble of this rule, that may help better distinguish between CRPAs described in paragraph (c)(10)(v) and antennas described in paragraph (c)(10)(i)?
2. The addition of paragraph (h)(1)(iii) to USML Category VIII ensures that parts, components, accessories, and attachments specially designed for aircraft listed in paragraphs (h)(1)(i) and (ii) are not released from paragraph (h)(1) due to their use in foreign advanced military aircraft described in paragraphs (a)(1) and (2) of USML Category VIII.

- a. The Department requests comment on its consideration of adding to paragraph (h)(1) a new paragraph (h)(1)(iv), to retain parts used in paragraphs (h)(1)(i) or (ii) aircraft even when they are used in “aircraft described in paragraph (a)(3) of USML Category VIII,” as the Department assesses that training aircraft described in paragraph (a)(3) often serve as proving grounds for future paragraph (a)(1) or (2) aircraft.
  - b. The Department requests comment on its consideration of expanding paragraph (h)(1) to add parts, components, accessories, and attachments specially designed for the foreign advanced military aircraft listed in paragraph (h)(1)(iii), even if they are not utilized in an aircraft listed in paragraph (h)(1)(i) or (ii), commensurate with the Department’s regulation of similar items for the advanced U.S. aircraft described in paragraphs (h)(1)(i) and (ii). For example, what effect would describing these foreign articles in paragraph (h)(1) have on existing international defense industrial cooperation and supply chains?
3. With this rule, the Department changes paragraph (d) of USML Category XIX to read “The following engines:” and then describes specific aircraft engines in paragraphs (d)(1) and (2). The Department requests comment on its consideration of changing that language to “The following engine series:” in order to more completely describe engines that provide a critical military or intelligence advantage.
4. Paragraphs (d)(1) and (2) of USML Category XIX describe specific aircraft engines. The Department requests comment on its consideration of expanding that scope to include “military variants” of those engines, similar to its regulation of certain gas turbine engine parts in paragraph (f)(1)(i) of USML Category XIX for military variants of the listed engines.

5. Are there commodities, services, or technical data closely related to these revisions that warrant ITAR control, but are currently either not described on the USML, or not described with sufficient clarity? If so, please provide examples and a concise explanation.
6. Are there specific commodities, services, or technical data described on the USML following these revisions that are, or have previously been, in normal commercial use, that were previously transitioned to another agency's jurisdiction, or that were previously determined not to be subject to the ITAR via a Commodity Jurisdiction determination? If so, please include supporting documentation.
7. Are there specific commodities, services, or technical data described on the USML following these revisions for which civil use is proposed, intended, or anticipated in the next five years? Please include supporting documentation and a point of contact familiar with the details.
8. Are there specific functions, performance levels, or characteristics related to these revisions that could better:
  - a. Distinguish between the commodities that do, and do not, warrant ITAR control;
  - b. Delineate the criteria for control, in lieu of using the term 'specially designed'; or
  - c. Align with the constructions or language used in other USML entries?
9. Can any of these revisions be more concisely stated?

## **Comment Submissions**

### *Instructions*

Include the Regulatory Information Number (RIN) (1400-AF42) for all submissions related to this rule. Parties who wish to comment anonymously may do so by submitting their comments via [www.regulations.gov](http://www.regulations.gov), leaving the fields that would identify the commenter blank and including no identifying information in the comment itself. Commenters are cautioned not to include proprietary, export-controlled, personal, or other sensitive information in their comments

that they would not want to be made public. If such information would provide useful insight to the comment: (1) assemble that information in a separate document with proprietary markings; (2) include “Proprietary supplement on file with: [provide POC]” as the first line in the body of the email submission; (3) submit the public portion of the comment via e-mail; and (4) call DDTC at (202) 663-1282 to coordinate submission of the proprietary supplement.

## **Regulatory Analysis and Notices**

### *Administrative Procedure Act*

This rulemaking is exempt from the rulemaking requirements of section 553 of the Administrative Procedure Act (APA) pursuant to section 553(a)(1) as a military or foreign affairs function of the United States. Although the Department has elected to publish this interim final rule with a concurrent 30-day request for public comment and a 240-day delayed effective date, it does so without prejudice to its determination that controlling the export, reexport, retransfer, and temporary import of defense articles and defense services is a military or foreign affairs function.

### *Regulatory Flexibility Act*

Since this rule is exempt from the notice-and-comment rulemaking provisions of 5 U.S.C. 553, it does not require analysis under the Regulatory Flexibility Act.

### *Unfunded Mandates Reform Act of 1995*

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

### *Congressional Review Act*

This rule does not meet the criteria of 5 U.S.C. 804(2).

### *Executive Orders 12372 and 13132*

This rulemaking does not have sufficient federalism implications to require consultations or warrant the preparation of a federalism summary impact statement. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this rulemaking.

*Executive Orders 12866, 13563, and 14094*

Executive Order 12866, as amended by Executive Orders 13563 and 14094, direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributed impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. After review by the Office of Management and Budget (OMB), this rule has been deemed a “significant regulatory action.” This rule was undertaken pursuant to a statutory directive to periodically review the items on the USML. The Department generally determines which items warrant addition to, or removal from, the USML by assessing whether each provides a critical military or intelligence advantage based on national security and foreign policy considerations. Because the costs and benefits of changing what is controlled focus on the effect or utility of the item or service, rather than its market prevalence or economic value, quantitative analyses cannot be usefully estimated and are not available, particularly since the global prevalence or availability of the item or service are not known. Moreover, the Department does not have useful estimates or models to predict whether or how frequently the items added to the USML by this rule will be applied for export or to which countries, or for temporary import and from which countries. Qualitatively, the rule was assessed for costs and benefits. Because listing individual items or model numbers would necessarily lead to incomplete controls when an item is renamed or slightly modified, the USML contains many descriptive controls that are based on broader characteristics, including form, fit, function, and performance capability. To more accurately describe only what the Department

intends to control, and to provide companies and individuals with better certainty, some USML revisions made by this rule are aimed to improve and clarify various entries and to more precisely focus controls. These revisions are also informed by confidential commodity jurisdiction determination and advisory opinion requests, submitted by industry. The Department takes into account common questions and strives to streamline and simplify USML entries based on how it understands industry experience with certain parts of the USML. Finally, when a complete redundancy is identified, as in one revision made by this rule, it is removed so that exporters, brokers, and temporary importers may better rely on a single entry, which can help to reduce compliance costs and increase the accuracy of relevant metrics. One alternative to this is inaction or delay. The Department could have waited to amend larger parts of the USML at once or continued to gather data to evaluate the controls affected by this rule. These alternatives were rejected. Statutory requirements, including section 38(f) of the Arms Export Control Act (22 U.S.C. 2778(f)), and section 1345 of the National Defense Authorization Act for Fiscal Year 2024, require a periodic review of the USML for edits like those made by this rule. While the Department continuously reviews the entire USML, it aims to focus on particular USML categories for targeted revisions in cycles, as it has done in implementing this rule.

#### *Executive Order 12988*

The Department of State has reviewed this rulemaking in light of sections 3(a) and 3(b)(2) of Executive Order 12988 to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burden.

#### *Executive Order 13175*

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

#### *Paperwork Reduction Act*

This rulemaking does not impose or revise any information collections subject to 44 U.S.C. chapter 35.

*Signing Authority*

Assistant Secretary C.S. Eliot Kang, having reviewed and approved this document, has delegated the authority to electronically sign this document to Stanley L. Brown, Acting Assistant Secretary, Bureau of Political-Military Affairs, for purposes of publication in the Federal Register.

**List of Subjects in 22 CFR Part 121**

Arms and munitions, Classified information, Exports.

For reasons stated in the preamble, the Department of State amends 22 CFR part 121, the United States Munitions List, as follows:

**PART 121 – THE UNITED STATES MUNITIONS LIST**

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

**Authority:** 22 U.S.C. 2752, 2778, 2797; 22 U.S.C. 2651a; Sec. 1514, Pub. L. 105-261, 112 Stat. 2175; E.O. 13637, 78 FR 16129, 3 CFR, 2013 Comp., p. 223.

2. Revise § 121.0 to read as follows:

**§ 121.0 United States Munitions List description and definitions.**

For a description of the U.S. Munitions List and its designations, including the use of asterisks and the parenthetical “(MT)”, see § 120.10 of this subchapter. Within this part, the following definitions apply:

*CCL.* See Commerce Control List.

*Commerce Control List* means Commerce Control List in 15 CFR part 774, supplement no. 1.

*Department of Defense* means U.S. Department of Defense.

*DoD.* See Department of Defense.

*EAR* means Export Administration Regulations in 15 CFR parts 730 through 774.

*ECCN* means Export Control Classification Number, the alphanumeric designation used on the CCL. See definition at 15 CFR part 772.

*Foreign advanced military aircraft* means non-U.S.-origin aircraft, including foreign derivatives of U.S.-origin aircraft, in development, or entering production, after 2023 with one or more of the following advanced military capabilities: an Active Electronically Scanned Array (AESA) fire control radar, integrated signature management or electronic warfare systems, or the ability to engage targets beyond visual range (BVR).

3. Amend § 121.1 as follows:

a. In Category II, revise Note 2 to paragraph (a)(5);

b. In Category IV, revise paragraph (c);

c. In Category V, revise paragraphs (c)(2), (e)(10), (f)(4)(x), (f)(19), and (g)(4);

d. In Category VII, revise Note 3 to Category VII;

e. In Category VIII:

i. Revise paragraphs (h)(1) and (29);

ii. Add Note 1 to paragraph (h); and

iii. Remove the Note at the end of the category.

f. In Category IX:

i. Revise paragraph (e)(1); and

ii. Remove and reserve paragraph (e)(2);

g. In Category X:

i. Revise paragraphs (a)(1) and (6);

ii. Add paragraph (b);

iii. Revise paragraph (d)(1); and

iv. Redesignate the Note to paragraphs (a) and (d) as Note 1 to paragraphs (a) and (d) and revise newly redesignated Note 1 to paragraphs (a) and (d).

h. In Category XI, revise paragraph (c)(10).

i. In Category XII, revise paragraph (d)(2)(ii).

j. In Category XIII:

i. Revise paragraphs (b)(4) and (d)(1) and (2);

ii. Redesignate Note to paragraph (d) as Note 1 to paragraph (d);

iii. Remove the Note to paragraph (d)(2) following newly redesignated Note 1 to paragraph (d); and

iv. Revise paragraphs (e)(1), (2), (5), and (6), (j), and (m)(9) and (10).

k. In Category XIV:

i. Revise paragraph (a)(1)(ii);

ii. Add paragraphs (a)(1)(iv) through (viii);

iii. Revise paragraph (f)(7); and

iv. Add paragraph (j).

l. In Category XIX, revise paragraphs (d) and (f)(1) and (2).

m. In Category XX:

i. Revise paragraphs (a)(7) and (8);

ii. Add paragraphs (a)(9) and (10); and

iii. Revise paragraph (b)(2).

n. In Category XXI, revise paragraph (a) and add Note 1 to Category XXI.

The revisions and additions read as follows:

**§ 121.1 The United States Munitions List.**

\* \* \* \* \*

Category II—Guns and Armament

(a) \* \* \*

NOTE 2 TO PARAGRAPH (a)(5): Note 1 to paragraph (a)(5) does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

\* \* \* \* \*

Category IV—Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes,  
Bombs, and Mines

\* \* \* \* \*

(c) Equipment specially designed for the handling, control, activation, monitoring, detection, protection, discharge, or detonation of any of the following:

(1) A commodity enumerated in paragraphs (a) or (b) of this category (MT for those systems enumerated in paragraph (a)(1) or (2) or (b)(1) of this category); or

(2) Improvised Explosive Devices (IEDs).

NOTE 1 TO PARAGRAPH (c): This paragraph (c) includes specialized handling equipment (e.g., transporters, cranes, and lifts) specially designed to handle articles enumerated in paragraphs (a) and (b) of this category for preparation and launch from fixed and mobile sites. The equipment in this paragraph (c) also includes specially designed robots, robot controllers, and robot end-effectors, and liquid propellant tanks specially designed for the storage or handling of the propellants controlled in USML Category V, CCL ECCNs 1C011, 1C111, and 1C608, or other liquid propellants used in the systems enumerated in paragraph (a)(1), (2), or (5) of this category.

NOTE 2 TO PARAGRAPH (c): Aircraft Missile Protection Systems (AMPS) are controlled in USML Category XI.

\* \* \* \* \*

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

\* \* \* \* \*

(c) \* \* \*

(2) Carboranes; decaborane (CAS 17702-41-9); pentaborane (CAS 19624-22-7); and derivatives thereof (MT);

\* \* \* \* \*

(e) \* \* \*

(10) Poly-NIMMO (poly nitratomethylmethyloxetane, poly-NMMO, (poly[3-nitratomethyl-3-methyl oxetane])) (CAS 84051-81-0);

\* \* \* \* \*

(f) \* \* \*

(4) \* \* \*

(x) Diethylferrocene (CAS 1273-97-8);

\* \* \* \* \*

(19) TEPANOL (HX-878) (tetraethylenepentaamineacrylonitrileglycidol) (CAS 68412-46-4); cyanoethylated polyamines adducted with glycidol and their salts (MT for TEPANOL (HX-878));

\* \* \* \* \*

(g) \* \* \*

(4) CL-20 precursors (any molecule containing hexaazaisowurtzitane) (e.g., HBIW (hexabenzylhexaazaisowurtzitane), TAIW (tetraacetyldibenzylhexaazaisowurtzitane));

\* \* \* \* \*

#### Category VII—Ground Vehicles

\* \* \* \* \*

NOTE 3 TO CATEGORY VII: Ground vehicles include any vehicle meeting the control parameters, regardless of: the surface upon which the vehicle is designed to operate (e.g., highway, off-road, amphibious, or rail); the manner of control of the vehicle (e.g., manual, remote, or autonomous); or the mode of locomotion of the vehicle (e.g., wheeled, tracked, or multi-pedal).

\* \* \* \* \*

#### Category VIII—Aircraft and Related Articles

\* \* \* \* \*

(h) \* \* \*

(1) Parts, components, accessories, and attachments specially designed for aircraft listed within paragraphs (h)(1)(i) through (ii) of this category, excluding those common to aircraft that are or were in production and are not listed within paragraphs (h)(1)(i) through (iv), as follows:

(i) B-1, B-2, B-21, F-15SE (Silent Eagle), F/A-18E/F, EA-18G, MQ-25, F-22, F-35, F-117, RQ-170, or future variants thereof;

(ii) U.S. Government technology demonstrators;

(iii) Foreign advanced military aircraft described in paragraph (a)(1), (2), or (3) of USML Category VIII; or

(iv) Aircraft included in a USML Category XXI(a) determination;

NOTE 1 TO PARAGRAPH (h)(1): The following is an example of the scope of this paragraph (h)(1) for an article common to multiple aircraft: A part common to the F-16 (not listed within paragraphs (h)(1)(i) through (iv) of this category) and F-35 (listed) is not described in this paragraph (h)(1), while a part common only to the F-22 and F-35 (both listed) is described in this paragraph (h)(1), subject to a specially designed analysis as set forth in § 120.41 of this subchapter.

NOTE 2 TO PARAGRAPH (h)(1): The following is an example of the scope of this paragraph (h)(1) for articles used in U.S. Government (USG) technology demonstrators: A part used only in a USG technology demonstrator, where the USG technology demonstrator is otherwise subject to the EAR, is not described in this paragraph (h)(1) (see § 120.41(b)(4)), while a part common only to the EA-18G (listed in paragraph (h)(1)(i) of this category) and a USG technology demonstrator is described in this paragraph (h)(1), subject to the analysis set forth in § 120.41 of this subchapter.

\* \* \* \* \*

(29) Any of the following equipment if specially designed for defense articles described in this paragraph (h)(1) or aircraft listed in paragraph (h)(1)(i), (ii), or (iii) of this category or developmental aircraft described in paragraph (f) of this category:

- (i) Scale test models;
- (ii) Full scale iron bird ground rigs used to test major aircraft systems; or
- (iii) Jigs, locating fixtures, templates, gauges, molds, dies, or caul plates.

NOTE 1 TO PARAGRAPH (h): Parts, components, accessories, and attachments in paragraphs (h)(3) through (5) or paragraph (h)(7), (14), (17), or (19) of this category are licensed by the Department of Commerce when incorporated in an aircraft subject to the EAR and classified under ECCN 9A610. Replacement parts, components, accessories, and attachments remain subject to the ITAR.

\* \* \* \* \*

#### Category IX—Military Training Equipment and Training

\* \* \* \* \*

(e) \* \* \*

- (1) Directly related to the defense articles enumerated in paragraphs (a) and (b) of this category;
- or

\* \* \* \* \*

#### Category X—Personal Protective Equipment

(a) \* \* \*

- (1) Body armor providing a protection level equal to or greater than NIJ RF3;

NOTE 1 TO PARAGRAPH (a)(1): For body armor providing a level of protection of NIJ HG1, NIJ HG2, NIJ RF1, or NIJ RF2, see ECCNs 1A005 and 1A613.

NOTE 2 TO PARAGRAPH (a)(1): See USML Category XIII(e) for controls on related materials.

\* \* \* \* \*

- (6) Helmets and helmet shells providing a protection level equal to or greater than NIJ RF3;

\* \* \* \* \*

(b) Developmental exoskeletons funded by the U.S. Department of Defense via contract, or other funding authorization, dated after January 20, 2026; and specially designed parts, components, accessories, and attachments therefor; excluding those that are:

(1) Enumerated elsewhere on the USML;

(2) In production;

(3) Documented as subject to the EAR via a commodity jurisdiction determination (see § 120.4 of this subchapter); or

(4) Identified in the relevant DoD contract or other funding authorization as being developed for both civil and military applications.

\* \* \* \* \*

(d) \* \* \*

(1) Ceramic or composite plates that provide protection equal to or greater than NIJ RF3;

\* \* \* \* \*

NOTE 1 TO PARAGRAPHS (a) AND (d): See National Institute of Justice Classification, NIJ Standard 0123.00, or national equivalents, for a description of level of protection for armor.

\* \* \* \* \*

#### Category XI—Military Electronics

\* \* \* \* \*

(c) \* \* \*

(10) Antennas, and specially designed parts and components therefor, other than Traffic Collision Avoidance Systems (TCAS) equipment conforming to FAA TSO C-119c, as follows:

(i) Antennas, other than Controlled Reception Pattern Antennas (CRPAs), that 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 1 millisecond;

- (ii) Antennas, other than CRPAs, that form adaptive null attenuation greater than 35 dB with convergence time less than 1 millisecond;
- (iii) Antennas that detect signals across multiple RF bands with matched left hand and right hand spiral antenna elements for determination of signal polarization;
- (iv) Antennas that determine signal angle of arrival with an accuracy better than (less than) two degrees (e.g., interferometer antenna);
- (v) CRPAs specially designed for functions other than Position, Navigation, and Timing (PNT), that 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 1 millisecond; or
- (vi) CRPAs specially designed for functions other than PNT, that form adaptive null attenuation greater than 35 dB with convergence time less than 1 millisecond;

\* \* \* \* \*

#### Category XII—Fire Control, Laser, Imaging, and Guidance Equipment

\* \* \* \* \*

(d) \* \* \*

(2) \* \* \*

- (ii) Global Positioning System (GPS) receiving equipment specially designed for encryption or decryption (e.g., Y-Code, M-Code) of GPS protected positioning service (PPS) signals (MT if designed or modified for airborne applications);

\* \* \* \* \*

#### Category XIII—Materials and Miscellaneous Articles

\* \* \* \* \*

(b) \* \* \*

- (4) Military or intelligence systems, equipment, assemblies, modules, integrated circuits, components, or software (including all previous or derived versions) authorized to control access

to or transfer data between different security domains as listed on the National Cross Domain Strategy and Management Office (NCDSMO) Control List (UCL); or

\* \* \* \* \*

(d) \* \* \*

\* (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 USML Category IV or XV (MT if usable for nozzles, re-entry vehicles, nose tips, or nozzle flaps usable in rockets, space launch vehicles (SLVs), or missiles capable of achieving a range greater than or equal to 300 km); or

(2) Carbon/carbon billets and preforms that are reinforced with continuous unidirectional fibers, tows, tapes, or woven cloths in three or more dimensional planes (MT if designed for rocket, SLV, or missile systems and usable in rockets, SLVs, or missiles capable of achieving a range greater than or equal to 300 km).

NOTE 1 TO PARAGRAPH (d)(2): This paragraph (d)(2) does not control carbon/carbon billets and preforms where reinforcement in the third dimension is limited to interlocking of adjacent layers only.

\* \* \* \* \*

(e) \* \* \*

(1) Spaced armor with  $E_m$  greater than 1.4 and meeting NIJ RF1 or better;

(2) Transparent armor with areal density less than or equal to 40 pounds per square foot ( $\leq 40$  lb/ft<sup>2</sup>), having either:

(i)  $E_m$  greater than or equal to 1.3 ( $E_m \geq 1.3$ ); or

(ii)  $E_m$  less than 1.3 ( $E_m < 1.3$ ) and meeting or exceeding NIJ RF1 standards;

\* \* \* \* \*

(5) Composite armor with  $E_m$  greater than 1.4 and meeting or exceeding NIJ RF1;

(6) Metal laminate armor with  $E_m$  greater than 1.4 and meeting or exceeding NIJ RF1; or

\* \* \* \* \*

(j) Equipment, materials, coatings, treatments, and fluids not elsewhere specified in this section, as follows:

(1) Specially treated or formulated dyes, coatings, and fabrics used in the design, manufacture, or production of personnel protective clothing, equipment, or face paints designed to protect against or reduce detection by radar, infrared, or other sensors at wavelengths greater than 900 nanometers (see USML Category X(a)(2));

\* (2) Equipment, materials, coatings, and treatments that are specially designed to modify the electro-optical, radiofrequency, infrared, electric, laser, magnetic, electromagnetic, acoustic, electro-static, or wake signatures of defense articles or 600 series items subject to the EAR through control of absorption, reflection, or emission to reduce detectability or observability (MT for applications usable for rockets, SLVs, missiles, drones, or UAVs capable of achieving a range greater than or equal to 300 km, and their subsystems. See note to paragraph (d) of this category); or

(3) Fluids, including greases, specially designed for any of the following:

(i) Aircraft listed in USML Category VIII(h)(1)(i), (ii), or (iii);

(ii) Coatings described in USML Category XIV(f)(7);

(iii) Engines listed in USML Category XIX(f)(1)(i) or (ii); or

(iv) Articles described in USML Categories XVIII (Directed Energy Weapons) or XX (Submersible Vessels and Related Articles).

\* \* \* \* \*

(m) \* \* \*

(9)  $E_m$  is the line-of-sight target mass effectiveness ratio and provides a measure of the tested armor's performance to that of rolled homogenous armor, where  $E_m$  is defined as follows:

$$E_m = \frac{(P_o - P_r)\rho_{RHA}}{AD_{Target}}$$

Where:

= density of MIL-A-12560 RHA, (7.85 g/cm<sup>3</sup>)

$P_o$  = Baseline Penetration of RHA

$P_r$  = Residual Line of Sight Penetration, either positive or negative (RHA equivalent)

$AD_{RHA}$  = Line-of-Sight Areal Density of RHA

$AD_{TARGET}$  = Line-of-Sight Areal Density of Target

If witness plate is penetrated,  $P_r$  is the distance from the projectile to the front edge of the witness plate. If the target armor has no measurable penetration,  $P_r = 0$ , and the  $E_m$  equation reduces to a ratio of  $AD_{RHA} / AD_{TARGET}$ .

(10) NIJ is the National Institute of Justice and RF1 refers to the requirements specified in NIJ standard 0123.00, Specification for NIJ Ballistic Protection Levels and Associated Test Threats.

\* \* \* \* \*

Category XIV—Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment

\* (a) \* \* \*

(1) \* \* \*

(ii) O-Alkyl (equal to or less than C<sub>10</sub>, including cycloalkyl) N,N-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphoramidocyanidates, such as: Tabun (GA): O-Ethyl N, N-dimethylphosphoramidocyanidate (CAS 77-81-6) (CWC Schedule 1A);

\* \* \* \* \*

(iv) P-alkyl (H or equal to or less than C<sub>10</sub>, including cycloalkyl) N-(1-(dialkyl (equal to or less than C<sub>10</sub>, including cycloalkyl) amino)) alkylidene (H or equal to or less than C<sub>10</sub>, including cycloalkyl) phosphonamidic fluorides and corresponding alkylated or protonated salts; e.g., N-(1-(di-n-decylamino)-n-decylidene)-P-decylphosphonamidic fluoride (CAS 2387495-99-8) and Methyl-(1-(diethylamino) ethylidene) phosphonamidofluoridate (CAS 2387496-12-8) (CWC Schedule 1A);

(v) O-alkyl (H or equal to or less than C<sub>10</sub>, including cycloalkyl) N-(1-(dialkyl (equal to or less than C<sub>10</sub>, including cycloalkyl) amino)) alkylidene (H or equal to or less than C<sub>10</sub>, including cycloalkyl) phosphoramidofluoridates and corresponding alkylated or protonated salts; e.g., O-n-Decyl N-(1-(di-n-decylamino)-n-decylidene) phosphoramidofluoridate (CAS 2387496-00-4), Methyl (1-(diethylamino) ethylidene) phosphoramidofluoridate (CAS 2387496-04-8), and Ethyl (1-(diethylamino) ethylidene) phosphoramidofluoridate (CAS 2387496-06-0) (CWC Schedule 1A);

(vi) Methyl-(bis (diethylamino) methylene) phosphonamidofluoridate (CAS 2387496-14-0) (CWC Schedule 1A);

(vii) Quaternaries of dimethylcarbamoyloxy pyridines: 1-[N,N-dialkyl (equal to or less than C<sub>10</sub>)-N-(n-(hydroxyl, cyano, acetoxy) alkyl (equal to or less than C<sub>10</sub>)) ammonio]-n-[N-(3-dimethylcarbamoyloxy- $\alpha$ -picolinyl)-N,N-dialkyl (equal to or less than C<sub>10</sub>) ammonio] decane dibromide (n=1-8); e.g., 1-[N,N-dimethyl-N-(2-hydroxy) ethylammonio]-10-[N-(3-dimethylcarbamoyloxy- $\alpha$ -picolinyl)-N,N-dimethylammonio] decane dibromide (CAS 77104-62-2) (CWC Schedule 1A); or

(viii) Bisquaternaries of dimethylcarbamoyloxy pyridines: 1,n-Bis[N-(3-dimethylcarbamoyloxy- $\alpha$ -picolyl)-N,N-dialkyl (equal to or less than C<sub>10</sub>) ammonio]-alkane-(2,(n-1)-dione) dibromide (n=2-12); e.g., 1,10-Bis[N-(3-dimethylcarbamoyloxy- $\alpha$ -picolyl)-N-ethyl-N-methylammonio] decane-2,9-dione dibromide (CAS 77104-00-8) (CWC Schedule 1A);

\* \* \* \* \*

\* (f) \* \* \*

(7) Chemical Agent Resistant Coatings (CARC), prior to the application and curing thereof, that have been qualified to military specifications (MIL-PRF-32348, MIL-DTL-64159, MIL-C-46168, or MIL-DTL-53039); or

\* \* \* \* \*

(j) Constituent elements of defoliants, as follows: 2,4,5-Trichlorophenoxyacetic acid (CAS 93-76-5).

\* \* \* \* \*

Category XIX—Gas Turbine Engines and Associated Equipment

\* \* \* \* \*

\* (d) The following engines:

(1) AGT1500, CTS800, GE38, GE3000, HPW3000, MT7, T55, T408, or T700; or

NOTE 1 TO PARAGRAPH (d)(1): Engines subject to the control of this paragraph (d)(1) are licensed by the Department of Commerce when incorporated in an aircraft subject to the EAR and controlled under ECCN 9A610. Such engines are subject to the controls of the ITAR in all other circumstances.

(2) XT900.

\* \* \* \* \*

(f) \* \* \*

(1) Parts, components, accessories, and attachments specially designed for the engines listed within paragraph (f)(1)(i) or (ii) of this category, excluding those common to engines that are or were in production that are not listed within paragraphs (f)(1)(i) through (iii) of this category, as follows:

(i) F101, F107, F112, F118, F119, F120, F135, F136, F414, F415, J402, T901, XA100, XA101, XA102, and XA103; and military variants thereof;

(ii) Engines described in paragraph (d)(2) of this category; or

(iii) Engines included in a USML Category XXI(a) determination.

NOTE 1 TO PARAGRAPH (f)(1): For example, a part common to the F110 (not listed within paragraphs (f)(1)(i) through (iii) of this category) and F136 (listed) engines is not described in this paragraph (f)(1), while a part common only to the F119 and F135 (both listed) is described in this paragraph, subject to a specially designed analysis using § 120.41 of this subchapter.

\* (2) Hot section parts and components (i.e., combustion chambers and liners, and related cooled structures; high pressure turbine blades, vanes, disks, and related cooled structures; 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 controlled in this category;

\* \* \* \* \*

#### Category XX—Submersible Vessels and Related Articles

(a) \* \* \*

(7) Equipped with any mission systems controlled under this subchapter;

NOTE 1 TO PARAGRAPH (a)(7): “Mission system” is defined as a “system” (see § 120.40(h) of this subchapter) that are defense articles that perform specific military functions such as by providing military communication, electronic warfare, target designation, surveillance, target detection, or sensor capabilities.

(8) Developmental vessels funded by the Department of Defense via contract or other funding authorization;

NOTE 1 TO PARAGRAPH (a)(8): This paragraph (a)(8) does not control vessels, and specially designed parts, components, accessories, attachments, and associated equipment therefor, in production, determined to be subject to the EAR via a commodity jurisdiction determination, or identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

NOTE 2 TO PARAGRAPH (a)(8): Note 1 to this paragraph (a)(8) does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

NOTE 3 TO PARAGRAPH (a)(8): This paragraph (a)(8) is applicable to those contracts and funding authorizations that are dated July 8, 2014, or later.

(9) Uncrewed, untethered vessels (and vehicles) that have an anti-recovery (e.g., scuttle or self-destruct) feature; or

(10) Uncrewed, untethered vessels (and vehicles) with a gross weight rating exceeding three-thousand pounds (3,000 lb), that are designed to operate without human interaction for longer than 24 hours or for more than seventy nautical miles (70 nmi).

NOTE 1 TO PARAGRAPH (a)(10): “Gross weight rating” in this paragraph (a)(10) means the maximum operating weight, or displacement, of the conveyance, including the fully configured weight of all fuel, fluids (excluding wet ballast open to the operating environment), payloads, other deployables or expendables (e.g., countermeasures, other autonomous commodities, and torpedoes), and cargo.

\* (b) \* \* \*

(2) Electric motors specially designed for submarines that have a power output of more than 0.75 MW (1,000 hp), and are all of the following:

(i) Quick reversing;

(ii) Liquid cooled; and

(iii) Totally enclosed.

\* \* \* \* \*

Category XXI—Articles, Technical Data, and Defense Services Not Otherwise Enumerated

\* (a) Any article not enumerated on the U.S. Munitions List may be included in this category until such time as the appropriate U.S. Munitions List category is amended to describe the article.

\* \* \* \* \*

NOTE 1 TO CATEGORY XXI: The decision to designate an article in this category, whether to designate a catch-all control for that article, the Significant Military Equipment designation of those articles, and any exclusion of those articles from eligibility for specific licensing

exemptions, shall be made by the Director, Office of Defense Trade Controls Policy.

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