

**ALPHABETICAL INDEX  
TO THE COMMERCE CONTROL LIST**

This index is not an exhaustive list of controlled items.

**Supplement No. 4 to Part 774 – Commerce Control List Order of Review**  
identifies the steps to follow when reviewing the Commerce Control List.

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Clamps (V-Band, cushion, broomstick, hinged, and loop) for gas turbine engines .....	9A619.y.5
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Clean room filters .....	3B991.b.4
Clicker dies .....	1B101.d
Clostridium argentinense (formerly known as Clostridium botulinum Type G), botulinum neurotoxin producing strains.....	1C351.c.8
Clostridium baratii, botulinum neurotoxin producing strains.....	1C351.c.9
Clostridium botulinum .....	1C351.c.10
Clostridium butyricum, botulinum neurotoxin producing strains.....	1C351.c.11
Clostridium perfringens, epsilon toxin producing types.....	1C351.c.12
Clostridium perfringens alpha, beta 1, beta 2, epsilon and iota toxins .....	1C351.d.5
Clothing & materials, bullet-resistant .....	1A005
CN (Phenylacetyl chloride or w-Chloroacetophenone) (CAS 532–27-4).....	1C607.a.3
CNTD (Controlled nucleation thermal decomposition) equipment.....	2B005.a.1.b
Coating application & processing technology, optic fibers .....	5E991.a.1
Coating application technology, for non-electronic substrates.....	2E003.f
Coating application & processing technology, optic fibers .....	5E001.b.3

Description	ECCN Citation
Coating equipment for prepregs/preform production .....	1B101.d
Coating & processing equipment, for non-electronic substrates .....	2B005
Coatings for reduced electromagnetic visibility or signature suppression .....	1C101, 0C617.a
Coccidioides immitis .....	1C351.e.1
Coccidioides posadasii.....	1C351.e.2
Cochliobolus miyabeanus (Helminthosporium oryzae).....	1C354.b.2
Cold-cathode tubes.....	3A228.a
Colletotrichum coffeanum var. virulans (Colletotrichum kahawae) .....	1C354.b.1
Colletotrichum kahawae (Colletotrichum coffeanum var. virulans) .....	1C354.b.1
Color center lasers.....	6A005.c.1, c.2 or c.3
Column, absorption or distillation .....	2B350.e
Column, liquid-liquid exchange, for lithium amalgams .....	1B233.b.1
Combined cycle engines/components.....	9A011, 9A619
Combustion regulation devices, missile engines .....	9A118
Common channel signaling equipment/systems.....	5A991.c.8
Common channel signaling, technology for the development of equipment employing .....	5D001.c.5
Communications cable systems to detect surreptitious intrusion .....	5A003.a
Communication channel controllers .....	5A991.b.4.b
Communication equipment, airborne.....	7A994
Communication (mobile) equipment, assemblies and components.....	5A991.g
Communications interception devices, parts and accessories.....	5A980, 5D980 or 5E980
Communications Systems (underwater) .....	5A001.b.1
Compasses.....	8A609.y.5, 8A620.y.5, 8A992.j, 9A610.y.13
Compasses (gyro-astro) & other position or orientation deriving devices .....	7A004
Compasses (gyro-astro) & devices, other than those of 7A004.....	7A104
Complex programmable logic devices (CPLD).....	3A001.7.a, 3A991.d
Components made from Fluorinated compounds .....	1A001
Components/structures for spacecraft.....	9A010
Composite conductors, superconductive .....	1C005
Composite or laminate development software.....	1D002
Composite structures, as tubes.....	1A202
Composite structures or laminates .....	1A002
Composite (structural) production equipment, n.e.s. ....	1B999.e
Composite (structural) production equipment controlled by 1B999, software for .....	1D999
Composite materials, ceramic-ceramic .....	1C007.c.1.a
Composites production equipment .....	1B001
Composite structures for propulsion systems or space vehicles.....	9A110, 9A619.x
Composite structures for unmanned aerial vehicles .....	9A610.t
Composites (structural) production equipment.....	1B101
Compound rotary tables for machine tools.....	2B008.d
Compound semiconductor integrated circuits .....	3A001.a.11

Description	ECCN Citation
Compound semiconductor photocathodes .....	6A002.a.2.c.3
Compressors.....	9A619.x
Compressors, bellows-sealed scroll-type.....	2B233
Compressors, turboexpander.....	1B232
Compressors, turbo/centrifugal/axial flow.....	9A619.x
Computer, electronic assemblies & equipment & components ...	4A001, 4A003, 4A004 or 4A994
Computer, electronic components .....	4A101
Computer, electronic components .....	4A102
Computers, parts, components, accessories... for military applications, not on USML .....	3A611
Computer aided design (CAD) equipment for semiconductor devices or integrated circuits .....	3B991.b.2.c
Computer-aided-design (CAD) software for IC's & semiconductors.....	3D003
Computer interconnect equipment.....	4A003.g
Computer/assemblies/components, neural.....	4A004.b
Computer/assemblies/components, optical.....	4A004.c
Computers, electronic assemblies, and related equipment and components not controlled by 4A001 or 4A003 .....	4A994
Computers, analog & analog ruggedized .....	4A101
Computers for fingerprint equipment .....	4A980
Computers, digital ruggedized .....	4A101
Computers/assemblies/components, systolic array.....	4A004.a
Computers, analog .....	4A001
Computers, digital .....	4A003
Computers, digital .....	4A004
Computers, digital.....	4A001
Computers, hybrid.....	4A102
Computers, parts, components ... for military application not on USML.....	4A611/3A611
Computers and electronic assemblies (hybrid), and specially designed components therefor.....	4A994.k
Computers, with extended operating temperature range .....	4A001.a.1
Computers, radiation hardened.....	4A001.a.2
Concealment and deception equipment (military), i.e. special paints, decoys, smoke or obscuration equipment and simulators .....	0A617
Concealed object detection equipment .....	2A984, 2D984 or 2E984
Condensers for use in nuclear reactors .....	2A290.a
Condensers or heat exchangers .....	2B350.d
Conductive polymers .....	1C001.c
Conductors, superconductive composite .....	1C005
Congo-Crimean hemorrhagic fever virus (a.k.a. Crimean-Congo hemorrhagic fever virus).....	1C351.a.10
Connector backshells, electric .....	3A611.y.9
Conotoxins .....	1C351.d.6

Description	ECCN Citation
Construction equipment “specially designed” for military use .....	0A617.y.1
Contactors .....	3A611.y.27
Contagious bovine pleuropneumonia ( <i>Mycoplasma mycoides subspecies mycoides</i> SC (small colony)).....	1C351.c.16
Containers, ISO intermodal containers for packing defense articles or “600 series” items ....	0A617.y.3
Containers, chemical.....	2B350.c
Containment devices (not enumerated under ECCN 1B608 or in USML Category IV or V) for the testing of high explosives or explosive devices .....	1B234
Containment facilities .....	2B352.a.1
Continuity of operation software .....	3D005
Continuous mixers .....	1B118
Control units for metallurgical melting & casting furnaces.....	2B227
Control systems, on-line development of gas turbine engines .....	9B002, 9B619.a
Controllable-pitch propellers .....	8A002.o.2.a
Controlled atmosphere melting & casting furnaces.....	2B227
Controlled environment (vacuum or inert gas) induction furnaces .....	2B226
Controlled nucleation thermal decomposition (CNTD) equipment.....	2B005.a.1.b
Controllers, machine tool (CNC).....	1B001.a
Controllers for high explosive handling robots .....	2B207
Controllers, robot .....	2B007
Conventional military steel helmets.....	1A613.y.1
Converter integrated circuits.....	3A001.a.5
Converters, frequency .....	3A225
Converters, frequency extender .....	3A001.b.7
Cooling fluids - electronic .....	1C006.d
Cooling fluids, fluorocarbon electronic .....	1C006.d
Cooling systems, freon and chilled water .....	1B999.d
Copper or phosphor bronze mesh packings .....	1A226
Copper metal vapor lasers.....	6A005.b
Coprocessor microcircuits .....	3A001.a.3 Note
Correlation-velocity sonar log equipment .....	6A001.b
Counter Improvised Explosive Device equipment .....	5A001.h
Coxiella burnetii.....	1C351.c.13
CR (Dibenz-(b,f)-1,4-oxazepine) (CAS 257-07-8) .....	1C607.a.4
Crime science laboratories, parts and accessories, nonmilitary mobile.....	9A980
Crimean-Congo hemorrhagic fever virus (a.k.a. Congo-Crimean hemorrhagic fever virus) .....	1C351.a.10
Cross (tangential) flow filtration equipment.....	2B352.d
Crossed-field amplifier tubes.....	3A001.b.1.b
Crucibles, liquid actinide resistant.....	2A225
Crucibles, tantalum .....	2A225.b or c
Cryocoolers for optical sensors, space qualified.....	6A002.d.1

Description	ECCN Citation
Cryocoolers for optical sensors, non-space qualified .....	6A002.d.2
Cryogenic and superconductive equipment, parts, components, accessories .....	9A620
Cryogenic and superconductive test equipment .....	9B620
Cryogenic and superconductive software .....	9D620
Cryogenic and superconductive technology .....	9E620
Cryptanalytic equipment and components, mass market .....	5A992
Cryptanalytic systems, equipment and components .....	5A004.a
Cryptographic activation token .....	5A002.b, 5D002.b, 5E002.b
Cryptographic enabling systems, equipment, integrated circuits, etc .....	5A002.b
Cryptographic enabling/activation software .....	5D002.b
Cryptographic enabling/activation technology .....	5E002.b
Cryptographic equipment and components, mass market .....	5A992
Cryptologic equipment, software for the development, production or use of, mass market ..	5D992
Cryptologic equipment and components, mass market. ....	5A992
Cryptographic systems, equipment and components for data confidentiality > 56 bits .....	5A002.a
Crystal pullers and furnaces .....	3B991.b.1.c
CS (o-Chlorobenzylidenemalononitrile or o-Chlorobenzalmalononitrile) (CAS 2698-41-1) .....	1C607.a.2
CTPB (Carboxy-terminated polybutadiene) .....	1C111.b.1
Cultivation chamber holding devices (including, <i>inter alia</i> , single-use cultivation chambers with rigid walls) .....	2B352.b.2.b
Custom integrated circuits .....	3A001.a.2 or a.10
Cutting tool inserts, single diamond point .....	2B998.b
Cutting machines, gears .....	2B003
Cutting equipment for prepregs/preform production .....	1B101.d
CVD (Chemical vapor deposition) equipment .....	1B001.d.2
CVD (Chemical vapor deposition) equipment .....	2B005.a
CVD (Chemical vapor deposition) equipment .....	1B101.c.2
CVD (Chemical vapor deposition) furnaces, other than those controlled by 2B005.a, designed or modified for the densification of carbon-carbon composites .....	2B105
CW (Chemical warfare) precursors .....	1C350
Cyanogen chloride (506-77-4) .....	1C355.b.1.b, 1E355.b.2
Cyber hacking systems, equipment and components .....	5A004
Cylinder wall lubrication technology, diesel engines .....	9E003.e.3
DACs (Digital-to-analog converters) .....	3A001.a.5
DBRN (Data Based Referenced Navigation) system technology .....	7E004.a.7
DADE (1,1-diamino-2,2-dinitroethylene, FOX-7) (CAS 145250-81-3) ..List of Explosives Annex to Cat. 1	
Damping, flotation or lubricating fluids .....	1C006.c
Data acquisition systems for gas turbine engine development .....	9B002, 9B619.a
Data (message) switching equipment, systems, components and assemblies .....	5A991.c.1

Description	ECCN Citation
Data acquisition equipment for wind tunnels, automatic.....	9B005
Data Based Referenced Navigation (DBRN) systems for underwater navigation, technology .....	7E004.a.7
Datagram packet routing or switching equipment .....	5A991.c.3
Decanters, centrifugal .....	2B352.c
Decontamination equipment .....	1A004 or 1A995
Decontamination equipment (military) for toxicological agents .....	1A607.g
Deep-hole drilling machines .....	2B001.f
Defect, error or contaminant detection equipment for wafers or substrates .....	3B992.b.1
Deformable mirrors.....	6A004.a.1
Degassing equipment .....	2B350
DEGDN (diethylene glycol dinitrate).....	1C111.c.5
Demolition blocks .....	0A604.a
Depleted Uranium.....	1A290
Depth sounders.....	6A001.a.1
Design integration of guidance sets, software .....	7D103
Detection and protection equipment and components .....	1A004, 1A995, 2B351 or 2B352
Detection equipment (military) for toxicological agents .....	1A607.h
Detection equipment, seismic .....	6A999.a
Detection equipment, radiation .....	1A004, 1A995 or 1A999.a
Detection equipment, radiographic.....	1A999.b
Detection systems for explosives and detonators .....	1A004.d, 2A983, 2D983 or 2E983
Detection or location systems or transmitting and receiving arrays (acoustic) .....	6A001.a.1.b
Detectors, optical .....	6A002.a
Detectors, radiation hardened .....	6A102
Detectors, space-qualified solid state optical.....	6A002.a.1
Detonation cord.....	1A008 or 1C992.c
Detonator detection.....	2A983, 2D983 or 2E983
Detonators and multipoint initiation systems .....	3A229
Detonator firing sets, for multiple detonators of 3A232 .....	1A007 or 3A229
Detonators, electric or non-electric.....	1C608.d or 1C992.e
Detonators, exploding bridge wire (EBW) .....	1A007
Detonators, exploding bridge (EB) .....	1A007
Detonators, exploding foil initiators (EB) .....	1A007
Detonators for military explosives.....	0A604
Detonators, slapper (electric).....	1A007
Deuterium fluoride-carbon dioxide (DF-CO2) lasers.....	6A005.d.5
Deuterium fluoride (DF) lasers .....	6A005.d.5
Di-isopropylamine .....	1C350.d.8
Diacetoxyscirpenol .....	1C351.d.7
Dials, indicator .....	3A611.y.26
Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr, or i-Pr)-phosphoramidates ..	1C355.a.2.c



Description	ECCN Citation
Diamond cutting tool inserts, single point .....	2B998.b
Diamond film substrate development/production technology .....	3E003.d
Diaphragm valves .....	2B350.g
Dibromodimethyl ether (CAS 4497-29-4) .....	1C607.a.7
Dibromotetrafluoroethane based damping or flotation fluids.....	1C006.c.1
Dichlorodimethyl ether (ClCi) (CAS 542-88-1) .....	1C607.a.8
Die bonder, stored program controlled .....	3B991.b.3.a
Diesel engines for submarines .....	8A620.d
Diesel engines, nonmagnetic .....	8A609.b
Diesel engines (air-cooled) and engine blocks for armored vehicles.....	0A606.c
Dies, bellows-forming.....	2B228.c
Diesel engines, n.e.s.....	9A990
Diesel cycle engine, air independent .....	8A002.j
Diethyl chlorophosphite.....	1C350.d.5
Diethyl ethylphosphonate .....	1C350.b.3
Diethyl methylphosphonate .....	1C350.b.4
Diethyl methylphosphonite.....	1C350.b.5
Diethyl phosphite .....	1C350.c.1
Diethyl-N, N-dimethylphosphoramidate .....	1C350.b.6
Diethylamine.....	1C350.d.3
Diethylaminoethanol.....	1C350.d.4
Diethylene glycol dinitrate (DEGDN).....	1C111.c.5
Diffusion bonding technology, metal working .....	2E003.b.1.b
Diffusion bonding technology/data, super alloys or Ti alloys.....	2E003.b.2.b
Diffusion bonding tools, dies, molds or fixtures.....	1B003
Digital array processors .....	3A001.a.3 Note
Digital computers.....	4A003
Digital computers.....	4A994.b
Digital computers, electronic assemblies & related equipment.....	4A003
Digital computers, electronic assemblies & related equipment.....	4A001
Digital computers, logic processors.....	4A003
Digital computers, ruggedized .....	4A101
Digital computers, signal processing .....	4A003
Digital computers, vector processors.....	4A003
Digital computer electronic assemblies, parallel processing .....	4A003.c
Digital computer systems .....	4A004
Digital computer systems .....	4A003.c
Digital computer systems .....	4A003.b
Digital computer systems.....	4A001
Digital coprocessors.....	3A001.a.3 Note
Digital differential analyzer, ruggedized .....	4A101
Digital electronic control software for propulsion systems, aerospace test	

Description	ECCN Citation
facilities or air breathing aero-engine test facilities.....	9D003, 9D619
Digital exchanges, telecommunication.....	5A991.c
Digital instrumentation data recorders.....	3A002.a.6
Digital signal processors.....	4A003
Digital time delay generators.....	3A999.e1
Digital-to-analog converter integrated circuits (DACs).....	3A001.a.5
Digitally controlled radio receivers.....	5A001.b.5
Digitizers, waveform.....	3A002.h
Diisopropylaminoethanethiol hydrochloride.....	1C350.b.7
Dimensional inspection or measuring systems or equipment not controlled by 2B006 or 2B206.....	2B996
Dimensional inspection machines.....	2B206
Dimensional inspection equipment/systems.....	2B006.a
Dimensional inspection equipment/systems.....	2B006.c
Dimensional measuring equipment, instruments/systems.....	2B006.b
Dimethyl ethylphosphonate.....	1C350.b.12
Dimethyl methylphosphonate.....	1C350.b.13
Dimethyl phosphite.....	1C350.c.2
Dimethylamine.....	1C350.d.9
Dimethylamine hydrochloride.....	1C350.d.10
Dinitrogen tetroxide ( ).....	1C111.a.3.b
Dinitrogen trioxide.....	1C111.a.3.a
Dinitrogen pentoxide.....	1C111.a.3.c
2,2' Dinitropropanol.....	1C018
Diodes, laser.....	6A005.d.1
Diortho tolyl-urethane.....	1C018.g
Diphenyl urethane.....	1C018.f
Direct view imaging equipment.....	6A002.c
Direct-acting hydraulic pressing technology for metal working.....	2E003.b.2.c
Direct Digital Synthesizer (DDS) integrated circuits.....	3A001.a.13
Direction finding equipment & components, surveillance.....	5A001.e
Direction finding equipment, parts & components, navigation, not controlled under 7A003 or 7A103.....	7A994
Direction finding systems, equipment & components, navigation (inertial).....	7A003
Direction finding systems, equipment & components, navigation, not controlled under 7A003.....	7A103
Directional solidification casting control software.....	9D004.c
Directional solidification casting equipment.....	9B001.a, 9B619.a
Discharge type arms.....	0A503
Discrete microwave transistors.....	3A611.d
Discrete microwave transistor technology.....	3E611.b.4
Display, 3D (software for).....	7D004.g

Description	ECCN Citation
Disruptors.....	1A006.b
Disruptors.....	1A006.b
Dissemination equipment (military) for riot control agents in 1C607.a.....	1A607.e
Distillation columns, hydrogen-cryogenic.....	1B228
Distillation towers, packings .....	1A226
Dive computers .....	8A992.j
Diver deterrent acoustic systems .....	8A002.r
DNAN (2,4-dinitroanisole) (CAS 119-27-7).....	Annex to Cat 1 “List of Explosives” 44
Dobrava-Belgrade virus .....	1C351.a.11
Doppler laser interferometers (DLIs).....	6A225
Double-door pass-through decontamination autoclaves.....	2B352.a.2.a
Double seal valves .....	2B350.g
Drilling equipment.....	2B999.h
Drilling machines, deep-hole .....	2B001.f
Drone (military) production facilities .....	9B610.c
Dummy rounds and blank rounds (unless linked or belted), not incorporating a lethal or non-lethal projectile(s) .....	EAR99
Dye lasers.....	6A005.c
Dye lasers.....	6A205
Dynamic adaptive routing equipment.....	5A991.c.9
Dynamic wavefront (phase) measuring equipment .....	6A004.f
Dynamic adaptive routing software .....	5D991.a
E-beam welders.....	2B999.e
Earth moving equipment, large.....	2B999.h.2
Eastern equine encephalitis virus.....	1C351.a.12
EB-PVD (Electron beam physical vapor deposition) equipment .....	2B005.c
Ebolavirus (includes all members of Ebolavirus genus).....	1C351.a.13
Eddy current test equipment for nuclear reactors .....	2A291.d
EDMs, non-wire feed types .....	2B001.d
EDMs, wire feed type .....	2B991d.1
Ejection seat mounted survival aids for military aircraft.....	9A610.y.6
Electric cattle prods.....	0A503
Electric detonators, explosive .....	3A232a
Electric fans .....	3A611.y.2
Electric propulsion engines.....	8A002o.2.b
Electrical contacts .....	3A611.y.19
Electrical discharge machines, non wire feed (CNC).....	2B001.d
Electrical discharge machines (EDM) of the wire feed type .....	2B991.d.2
Electrical guide pins.....	3A611.y.20
Electrically driven explosive detonators.....	3A232.a
Electro-optic materials.....	6C004
Electro-optical device manufacturing equipment and systems.....	3B991.b Note

Description	ECCN Citation
Electro-optical integrated circuits .....	3A001.a.6
Electrolysis cells, amalgam lithium isotope separation .....	1B233.b.3
Electrolytic cells for fluorine production .....	1B225
Electrolytic cells for fluorine production not controlled by 1B225 .....	1B999.a
Electromagnetic interference (EMI) protection technology .....	7E102
Electromagnetic isotope separators.....	1B226
Electromagnetic pulse (EMP) protection, detectors .....	6A102
Electromagnetic pulse (EMP) protection technology, avionics.....	7E102
Electromagnetic pulse (EMP) recovery software .....	3D005
Electromagnetic radiation sensors, optical fiber .....	6A002.d.3.a
Electromagnetic signature reduction devices.....	1A101
Electromagnetic signature reduction materials.....	1C101
Electromagnetic underwater communications systems .....	5A001.b.1.b
Electromagnets, superconductive .....	3A201.b
Electromagnets, superconductive .....	3A001.e.3
Electron beam cutting machines (CNC) .....	2B001.e.1.b
Electron beam equipment for mask making/semiconductor devices.....	3B001.f.2
Electron beam equipment for projection image transfer.....	3B991.b.2.g
Electron beam melting furnaces.....	2B227.b
Electron beam physical vapor deposition (EB-PVD) equipment .....	2B005.c
Electron beam sensitive resist materials .....	3C002.b
Electron beam systems, for probing semiconductor devices .....	3B992.b.5
Electron beam systems.....	3B991.b.1.j
Electron beam test systems .....	3B992.b.5
Electron bombardment mass spectrometers.....	3A233.d
Electron tube manufacturing equipment and components.....	3B991.a
Electron tube inspection or testing equipment and components.....	3B992.a
Electronic assemblies.....	4A003
Electronic assemblies and related equipment not controlled by 4A001 or 4A003 .....	4A994
Electronic assemblies specially designed to provide feedback capability in systems controlled by 2B006.b.3 .....	2B006.b.4
Electronic cameras .....	6A003.a.5
Electric chairs.....	0A981
Electrical connectors.....	3A611.y.1
Electronic components.....	3A001
Electronic components.....	3A201
Electronic components.....	3A101
Electronic components (military) .....	3A611
Electronic components and materials inspection or testing equipment, components and accessories .....	3B992
Electronic components and materials manufacturing equipment .....	3B991
Electronic components and materials manufacturing equipment,	

Description	ECCN Citation
not controlled by 3B001 .....	3C001
Electronic computers .....	4A994.a
Electronic computers & related equipment.....	4A001, 4A003, 4A004 or 4A994
Electronic computers & related equipment.....	4A101
Electronic computers & related equipment.....	4A102
Electronic cooling fluids .....	1C006.d
Electronic framing cameras .....	6A203.b.2
Electron sensing devices .....	6A002.a.2.a.2.b
Electronic streak cameras & streak tubes .....	6A003.a.3
Electronic streak cameras & streak tubes .....	6A203.b.1
Electrostatic Discharge (ESD) recovery software .....	3D005
Electronically steerable antennae, phased array .....	5A001.d
Electroplating equipment .....	2B999.i
EMP/EMI protection technology, avionic systems .....	7E102
EMP/ESD recovery software.....	3D005
Encoders, rotary input shaft type, and rings, discs or scales therefor.....	3A001.f
Encryption equipment, assemblies & components .....	5A002
Encryption hardware components.....	Cat 5 pt 2 Note 3 (b)
Encryption software .....	5D002
End effectors, robot.....	2B207
End effectors, robot.....	2B007
Energetic ionic materials.....	Annex to Cat 1 List of Explosives 48
Energy storage capacitors .....	3A001.e.2
Engines, diesel n.e.s. ....	9A990
Engines (marine), n.e.s.....	8A992.g
Engines (submarine), n.e.s.....	8A992.g
Engines (air breathing reciprocating or rotary internal combustion type) .....	9A012.b.4
Enterohaemorrhagic E. coli (EHEC) .....	1C351.c.17
Environmental chambers .....	1B018.b, 9B106, or 9B610.b
Environmental chambers, capable of simulating flight conditions.....	9B106, 9B610.b
Environmental test facilities for 7A611 (except 7A611.y) or guidance equipment .....	7B611
Epitaxial growth equipment.....	3B001.a
Epitaxial growth stored program controlled equipment .....	3B991.b.1.d
Epitaxial wafers, Cadmium telluride (CdTe).....	6C002.b
Epoxy resin matrix impregnated carbon fibers or filamentary materials .....	1C010.e Note 1
Equine morbillivirus (Hendra virus).....	1C351.a.18
Equipment (i.e., 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.....	6B619.a
Equipment (military) “specially designed” for the destruction of chemical warfare agents .....	1B607.a

Description	ECCN Citation
Equipment and tooling “specially designed” for the “development,” “production,” repair, overhaul, or refurbishing of commodities controlled by 1A607.e, .f, .g, .h, or .j or by USML Category XIV(f).....	1B607.c
Erbium oxide (erbia) (Er <sub>2</sub> O <sub>3</sub> ) made/coated crucibles .....	2A225.a.4
Etching stored program controlled equipment.....	3B991.b.1.h
Ethers, as lubricating fluid .....	1C006.b.1
Ethyl centralites .....	1C018.a
Ethyl chlorofluorophosphate.....	1C350.d.11
Ethyl dichlorophosphate .....	1C350.d.12
Ethyl difluorophosphate.....	1C350.d.13
Ethyl iodoacetate (CAS 623-48-3).....	1C607.a.14
Ethyl phenyl urethane .....	1C018.e
Ethyl phosphinyl dichloride.....	1C350.b.15
Ethyl phosphinyl difluoride .....	1C350.b.16
Ethyl phosphonous dichloride.....	1C350.b.15
Ethyl phosphonous difluoride.....	1C350.b.16
Ethyl phosphonyl dichloride .....	1C350.b.17
Ethyl-NN-diphenylurea (ethyl unsymmetrical diphenylurea) .....	1C018.d
Ethyl dibromoarsine (CAS 683-43-2) .....	1C607.a.9
Ethyldiethanolamine (139-87-7).....	1C350.c.3
Evaporators for concentrated lithium hydroxide solution .....	1B233.b.4
Exchange columns, liquid-liquid for lithium amalgams.....	1B233.b.1
Exchanges, telecommunication.....	5A991.c
Excimer lasers.....	6A005.d.4
Execution of human beings, equipment for .....	0A981
Expert systems - integration systems technology .....	2E003.e
Exploding foil initiators (EFI) .....	1A007
Exploding bridge (EB) detonators .....	1A007
Exploding bridge wire (EBW) detonators .....	1A007
Explosive, high .....	1C239
Explosive/munitions environment handling robots .....	2B007.b
Explosive detection.....	1A004.d
Explosive detonator firing sets.....	1A007.a
Explosives or detonator detection equipment, software, or technology ..	2A983, 2D983 or 2E983
Explosive detonators, electric .....	1A007.b or 3A232
Explosive devices , charges, components - commercial.....	1C608, 1A008 or 1C992.1
Explosives (military) production equipment .....	1B018.a
Explosives (military) in charges for civil applications .....	1A008 or 1C608
FADEC (Full authority digital electronic engine control) software .....	9D003, 9D619
FADEC (Full authority digital electronic engine control) technology .....	9E003.h, 9E619
Fan blade (hollow) technology .....	9E003, 9E619
Fans, electric .....	3A611.y.2

Description	ECCN Citation
Fast Fourier Transform (FFT) processors.....	3A001.a.12
Fast switching function modules or assemblies.....	3A228.c
Fast fourier transform processors, acoustic signal processing.....	6A001.a.2.c
Fault tolerance FADEC software.....	9D003, 9E619
Fermenters (biological processing), and components designed for such fermenters .....	2B352.b
Fertilizers containing ammonium nitrate .....	1C997
Fiber, equipment for the production of.....	1B999
Fiber and filamentary material.....	1C010
Fiber and filamentary material.....	1C210
Fiber converting equipment, polymeric to carbon or silicon carbon .....	1B001.d.1
Fiber laser components .....	6A005.e.3
Fiber optic cable.....	5A001.c
Fiber optic gyro coil winding machines .....	7B003
Fiber optic magnetometers.....	6A006.c
Fiber optic hull penetrators/connectors.....	8A002.c
Fiber optic wave division multiplex equipment.....	5A991.b.5
Fiber preforms, metal coated, for fiber prepregs in 9C110.....	9C110
Fiber prepregs, resin impregnated, for items in 9A110 .....	9C110
Fiber, rare-earth metal doped double-clad .....	6C005.b
Fiber reinforcement, production equipment .....	1B001.d
Fiber straining equipment .....	1B001.d.1
Fiber surface treatment equipment.....	1B101.d
Fibrous or filamentary materials.....	1C210
Fibrous or filamentary materials.....	1C010
Fibrous or filamentary materials, carbon .....	1A002.b.1
Fibrous and filamentary materials for use in composite structures .....	1C990
Fibrous or filamentary material production equipment .....	1B001
Fibrous or filamentary material production equipment .....	1B101.c
Fibrous and filamentary materials development, production or use technology .....	1E994
Field programmable gate arrays (FPGA).....	3A001.a.7, 3A991.d
Field programmable interconnects (FPIC).....	3A001.a.7, 3A991.d
Field programmable logic arrays (FPLA).....	3A001.a.7, 3A991.d
Field programmable logic devices (FPLD).....	3A001.a.7, 3A991.d
Field test equipment to evaluate or calibrate the operation of systems described in USML Category XII(a), (b), or (c).....	7B611
Filament winding machines .....	1B001.a
Filament winding machines .....	1B101.a
Filament winding machines .....	1B201
Filling equipment, remotely controlled.....	2B350.f
Film type integrated circuits .....	3A001.a Note 2
Filter canisters.....	1A004 or 1A995
Filters, tunable band-pass .....	3A001.b.5

Description	ECCN Citation
Filters for clean rooms .....	3B991.b.4
Filters (fuel or oil) for gas turbine engines .....	9A619.y.4
Filters (hydraulic, fuel, oil, air) for ground vehicles .....	0A606.y.8
Filters, optical .....	6A994.a
Filters for hydraulic/oil/fuel systems in military aircraft.....	9A610.y.8
Filters for pneumatic/hydraulic/oil/fuel systems in submersible vessels.....	8A620.y.2
Filters for pneumatic/hydraulic/oil/fuel systems in surface vessels of war .....	8A609.y.2
Finger barriers .....	3A611.y.31
Finger cuffs .....	0A983
Fingerprint analyzers, cameras and equipment.....	3A981
Fingerprint equipment, computers for .....	4A980
Fingerprinting powders, dyes, inks.....	1A985
Finishing machines, gear .....	2B003
Finishing machines, gear .....	2B003
Fins.....	8A992.i
Firearms (except shotguns).....	0A501
Firearm detachable magazines greater than 16 rounds .....	0A501.d
Firearm detachable magazines less than or equal 16 rounds .....	0A501.x
Firearms manufactured from 1890 to 1898 and reproductions thereof .....	0A501.y.7
Fire extinguishers for military aircraft.....	9A610.y.26
Fire detectors for military aircraft.....	9A610.y.27
Firearms, muzzle-loading (black powder) .....	0A501 Note 3
Firing sets, for multiple detonators of 3A232 .....	1A007 or 3A229.a
Fireworks displays .....	1C608.j or 1C992.k
Fissile materials, special or other.....	0C002
Flanges, vacuum .....	2B999.k
Flares, non-irritant smoke .....	1A984
Flash discharge X-ray generators.....	3A201.c
Flash X-ray machines .....	3A999.c
Flexible rotor centrifugal balancing machines.....	2B229.a
Flexible sensors for hydrophones .....	6A001.a.2.a.1
Flexible nozzles, thrust vector control sub-system .....	9A106.c
Flexible waveguide .....	3A991.h
Flight management system integration technology .....	7E104
Flight control servo valves.....	9A106.e
Flight control systems for non-military UAVs .....	7A116
Flight control systems for military UAVs or drones .....	9A610.w
Flight control systems - software.....	7D003.e and 7D004
Flight instrument systems, integrated .....	7A103.b
Flight instrument trainer, military.....	9A610.t
Flight control system development technology .....	7E004
Flight control actuator technology .....	7E004.a.5



Description	ECCN Citation
Flip-guards .....	3A611.y.32
Flow-forming machines .....	2B009
Flow-forming machines .....	2B109
Flow-forming machines .....	2B209
Flow-forming machines .....	2B9991
Fluid energy mills .....	1B119
Fluoride compounds (bulk).....	6C994.a.1
Fluoride glass (bulk) .....	6C994.a.2
Fluorinated silicone fluid .....	1C006.b.2
Fluorinated compounds, components .....	1A001
Fluorinated compounds, unprocessed.....	1C009
Fluorinated phosphazene elastomers .....	1C009.c
Fluorinated polyimide .....	1C009.b
Fluorine .....	1C999.f
Fluorine production (electrolytic cells).....	1B225
Fluorocarbon electronic cooling fluids .....	1C006.d
Fluorophosphate glass.....	6C004.e
Fluorocarbon electronic cooling fluids .....	1C006.d
Fluxgate magnetometer technology .....	6E003.f
Fly cutting machines .....	2B001.b.4 or 2B992.b
Fly-by-light flight control system software .....	7D003.e, 7D004.c
Fly-by-light or fly-by-wire technology .....	7E004.b
Fly-by-wire flight control system software.....	7D003.e, 7D004.c
Fly-by-wire systems for military UAVs or drones .....	9A610.w
Fly-by-wire systems for missiles .....	7A116
Fly-by-wire control system technology .....	7E004.b
Foam, syntactic for underwater use (in any stage of manufacture) .....	8C001 or 8A002.a.4
Foam mirror structures, lightweight .....	6A004.a.3
Focal plane arrays, direct view .....	6A002.c.2 or c.3
Focal plane arrays, linear & 2D .....	6A002.a.3
Focal plane arrays, non-space qualified.....	6A002.a.3.g
Focal plane arrays, space qualified. ....	6A002.a.1.d
Focal-plane array performance determining equipment.....	3B992.b.4.c
Fogging or spraying systems, specially designed for fitting to aircraft, “lighter than air vehicles,” or “UAVs” .....	2B352.h.1
Foot-and-mouth disease virus .....	1C351.a.14
Fording (water) kits for ground vehicles .....	0A606.e
FPGA's (Field programmable gate arrays) .....	3A001.a.7
FPLA's (Field programmable logic arrays) .....	3A001.a.8
Fracking fluid.....	0A998.b.2
Framing cameras, electronic type .....	6A203.b.2
Framing cameras, mechanical.....	6A203.a.1

Description	ECCN Citation
Framing tubes & solid state imaging devices .....	6A203.b.3
Framing cameras, electronic type .....	6A003.a.4
Francisella tularensis.....	1C351.c.14
Free electron laser magnet wiggler manufacturing or inspection equipment.....	6B995.a.1
Free electron laser photo injector manufacturing or inspection equipment.....	6B995.a.2
Freeze drying equipment (steam, gas, or vapor sterilizable) .....	2B352.e
Freon and chilled water cooling systems.....	1B999.d
Frequency agile (frequency hopping) radio equipment .....	5A001.b.3
Frequency agile systems .....	5A002.e
Frequency agile tubes .....	3A001.b.1
Frequency hopping development technology .....	5E001.b.4
Frequency analyzers (signal analyzers) .....	3A002.c
Frequency changers .....	3A999.a
Frequency changers (converters or inverters) .....	3A225
Frequency changers (a.k.a. converters or inverters) and generators, “software” “specially designed” for the “use” of .....	3D201
Frequency changers (a.k.a. converters or inverters) and generators, “software” “specially designed” to enhance or release the performance characteristics of equipment to meet or exceed the performance characteristics in ECCN 3A225 .....	3D202
Frequency extenders, mixers/converters.....	3A001.b.7
Frequency network analyzers .....	3A002.e
Frequency standards, atomic.....	3A002.g
Frequency synthesized signal generators.....	3A002.d
Frequency synthesizer, electronic assemblies.....	3A001.b.11
Fuel oils.....	1C980
Fuel cell air independent power systems .....	8A002.j
Fuel lines and hoses for gas turbine engines.....	9A619.y.3
Fuel filters for gas turbine engines.....	9A619.y.4
Full Authority Digital Electronic Engine Control software.....	9D003, 9D619
Functional (truth table) testing equipment, for integrated circuits .....	3B002.b
Fungi, human and zoonotic pathogens and “toxins” .....	1C351.e
Fungi, plant pathogens .....	1C354.b
Furnaces .....	2B226
Furnaces, Chemical Vapor Deposition (CVD), other than those controlled by 2B005.a, designed or modified for the densification of carbon-carbon composites .....	2B105
Furnaces .....	2B227
Fused silica glass.....	6C004.e
GaAs photocathodes .....	6A002.a.2.c.3
GaInAs photocathodes .....	6A002.a.2.c.3
Galleys (military aircraft) .....	9A610.y.9
Galleys (submersible vessels).....	8A620.y.3
Galleys (surface vessels of war) .....	8A609.y.3

Description	ECCN Citation
Gallium organo-metallic compounds.....	3C003
Gallium III/V compound substrates, hetero-epitaxial grown-multi-layer .....	3C001.c
Gallium nitride (GaN) “substrates”, ingots, boules, or other preforms of those materials.....	3C005.a
Gallium selenide .....	6C004.b.5
Gallows .....	0A981
Gas centrifuge rotor assembly equipment.....	2B228.a
Gas krytron tubes .....	3A228.a
Gas or full face masks.....	1A004 or 1A995
Gas centrifuge rotor balancing equipment.....	2B229
Gas, manufactured, synthetic or natural liquid produced or derived from Naval Petroleum Reserves .....	1C984
Gas discharge & ion lasers.....	6A005.a
Gas and oil exploration equipment, software, and data .....	0A998
Gas lasers .....	6A005.a
Gas monitoring systems, toxic.....	2B351
Gas sterilizable freeze drying equipment.....	2B352.e
Gas turbine aeroengines, civil non-certified/supersonic.....	9A001
Gas turbine blade, manufacturing or measuring equipment .....	9B001, 9B619
Gas turbine blade technology.....	9E003.a, 9E619
Gas turbine blades, vanes or tip shroud casting equipment, tooling or fixtures .....	9B991, 9B619
Gas turbine brush seal production/test equipment.....	9B003, 9B619
Gas turbine components, solid state joining equipment .....	9B004, 9B619
Gas turbine engine development systems/instrumentation.....	9B002, 9B619
Gas turbine engine development control systems or instrumentation .....	9B002, 9B619
Gas turbine engine propulsion systems assemblies/components.....	9A003, 9A619
Gas turbine engine technology.....	9E003, 9E619
Gas turbine engine development and use software.....	9D004, 9D619
Gas turbine engine monitoring system software.....	9D619.b.11
Gas turbine engines, parts and components, not controlled by 9A001 or 9A101 .....	9A991, 9A619
Gas turbine engines & assemblies/components, marine.....	9A002
Gas turbine test/flow modeling software .....	9D004.a, 9D619
Gas turbine (aero engine) test software .....	9D004.b, 9D619
Gaskets, aircraft/aerospace use .....	1A001.a, 9A610.x
Gaskets, ground vehicles .....	0A606.y.9
Gaskets, vacuum .....	2B999.k
Gate silicon intensifier target (SIT) videcon tubes .....	6A203.b.3.b
Gateways & bridges.....	5A991.b.4.b
Gauges, hydraulic, pneumatic, fuel and lubrication .....	3A611.y.35
Gauges and indicators (analog cockpit).....	9A610.y.2
Gauges and indicators (submersible vessels).....	8A620.y.10
Gauges and indicators (surface vessels of war).....	8A609.y.10

Description	ECCN Citation
GDMS (Glow discharge mass spectrometers).....	3A233.b
Gear honing, shaving, grinding, cutting, and finishing machines .....	2B003
Gearmaking and/or finishing machinery not controlled by 2B003 .....	2B993
Gel propellant control systems.....	9A106.d
Generator systems, neutron.....	3A231
Generators and other equipment for nuclear plants .....	2A290
Generators, digital time delay .....	3A999.e1
Generators, for ground vehicles.....	0A606.y.2
Generators, field – “specially designed for military use.....	0A617.y.4
Generators, high-current pulse for detonators .....	3A229
Generators, high-speed pulse .....	3A230
Generators, marx.....	3A999.c
Generators, portable electric .....	2A994
Genetically-modified microorganisms.....	1C353
Germanium, hetero-epitaxial grown multi-layer substrates.....	3C001.b
Gimbals, optical control.....	6A004.d.3
Glass fiber or filamentary materials.....	1C210.b
Glass fiber, for optical communications .....	5A001.c
Glass matrix reinforced composite materials.....	1C007.c.1.a
Glass preforms, for optical fiber production.....	5C991
Glass Windows, nuclear radiation shielding.....	1A227
Glass, high homogeneity.....	6C004.e.3
Global positioning system (GPS) equipment & components .....	7A005, 7A105 or 7A994
Glove boxes .....	0B999
Gloves, protective .....	1A004 or 1A995
Glow discharge mass spectrometers (GDMS).....	3A233.b
GNSS (Global Navigation Satellite Systems) ranging signals decryption software .....	7D005
Goatpox virus.....	1C351.a.15
Gold (Au) metal vapor lasers.....	6A005.b
GPS equipment, other than those of 7A005 .....	7A105
GPS (Global positioning system) equipment/components .....	7A005
Gradiometers & components, gravity .....	6A007.c
Gradiometers & components, gravity .....	6A107
Gradiometers & components, magnetic.....	6A006
Graphite, fine grain recrystallized bulk .....	1C107.a
Graphite, bulk .....	1C107.a
Graphite, pyrolytic or fibrous reinforced.....	1C107.b
Graphite, nuclear-grade, not intended for use in a nuclear reactor.....	1C298
Gravimeters (Gravity meters) & components, gravity .....	6A007.a
Gravimeters (Gravity meters) & components, gravity .....	6A007.b
Gravimeters (Gravity meters) & components, gravity .....	6A107
Gravity meter (gravimeters) products & calibration equipment.....	6B007

Description	ECCN Citation
Gravity meters.....	6A997
Gravity gradiometers & components.....	6A007.c
Gravity meters (gravimeters) & components.....	6A007.b
Gravity meters (gravimeters) & components.....	6A007.a
Gravity meters (gravimeters) software.....	6D003.g
Gravity gradiometers & components.....	6A107
Gravity meters (gravimeters) & components.....	6A107
Gravity gradiometer software.....	6D003.g
Greases.....	1C980
Grenades, non-irritant smoke.....	1A984
Grinding machines (CNC).....	2B991.d.1
Grinding machines, gear.....	2B003
Grinding machines.....	2B201.b
Grinding machines.....	2B001.c
Ground fault circuit interrupters.....	3A611.y.18
Ground vehicles & related commodities.....	0A606
Grounding straps.....	3A611.y.25
Guanarito virus.....	1C351.a.16
Guanidine nitrate.....	1C011.c or 1C608.m
GUDN (Guanylurea dinitramide) FOX-12 (CAS 217464-38-5).....	Annex to Cat 1 List of Explosives 46
Guidance sets usable in missiles.....	7A117
Guillotines.....	0A981
Gun barrel rifling and broaching machines and tools therefor.....	0B602
Gun barrel trepanning machines.....	0B602
Gun boring and turning machines.....	0B602
Gun honing machines.....	0B602
Gun, immobilization.....	0A503
Gun jump screw lathes.....	2B018.j
Gun rifling machines.....	2B018.k
Gun, shotgun.....	0A502
Gun straightening presses.....	2B018.l
Gun, stun.....	0A503
Guns and armament manufactured between 1890 and 1919.....	0A602.a
Gyro dynamic balance stations.....	7B003 or 7B101
Gyro tuning test stations.....	7B003 or 7B101
Gyro run-in/motor test stations.....	7B003 or 7B101
Gyro evacuation/fill stations.....	7B003 or 7B101
Gyro-astro compasses & devices.....	7A104
Gyros & gyro components.....	7A102
Gyros.....	7A002
Gyroscope production/manufacturing/test equipment.....	7B003

Description	ECCN Citation
Hacking systems, equipment and components .....	5A004
Hafnium oxide (hafnia) (HfO <sub>2</sub> ) made/coated crucibles .....	2A225.a.5
Hafnium metal, alloys & compounds .....	1C231
Hafnium fluoride (HfF <sub>4</sub> ) glass .....	6C004.e
Hair type absorbers .....	1C001.a Note 1.a
Handcuffs .....	0A982
Handling equipment for propellants and their constituents .....	1B115
Handling systems, semiconductor wafers .....	3B001.e
Hantaan virus .....	1C351.a.17
Harbor entrance detection devices for submersible vessels .....	8A620.c
Hard surface coated substrates .....	3B991.b.2.b.1
Harnesses, complete .....	9A992, 9A610.h
Heading sensors, towed hydrophones .....	6A001.a.2.b.4
Heading sensors .....	6A001.a.2.d
Heat exchangers for use in nuclear reactors .....	2A290.a
Heat exchangers & condensers .....	2B350.d
Heat pipe cooled mirrors .....	6A005.e.1
Heat sinks .....	3A611.y.3
Helicopter system development technology .....	7E004.c
Helicopter power transfer system technology .....	9E003.d, 9E610
Helium, enriched .....	1C232
Helium refrigeration units .....	1B231.b.1
Helium .....	1C980
Helium-3 .....	1C232
Helix Tubes .....	3A001.b.1.a.4
Helix traveling wave tubes (TWTs) technology .....	3E611.b.1
Helmet, military, shells, liners, comfort pads .....	1A613.c and .y.1
Helminthosporium oryzae (Cochliobolus miyabeanus) .....	1C354.b.2
Hemishell dimensional inspection equipment/systems .....	2B006.d
Hendra virus (Equine morbillivirus) .....	1C351.a.18
Herpesvirus (Suid herpesvirus 1; a.k.a. Pseudorabies virus, Aujeszky's disease) .....	1C351.a.51
Hetero-epitaxial grown multi-layer substrates .....	3C001
Hetero-structure semiconductor technology .....	3E003.b
High energy storage capacitors .....	3A001.e.2
High explosive containment vessels, chambers, containers, and similar containment devices not enumerated under ECCN 1B608 or in USML Category IV or V .....	1B234
High power pulse shaping networks .....	3A999.c
High voltage capacitors .....	3A999.c
High voltage triggers .....	3A999.c
High-speed pulse generators .....	3A230
High-speed cameras .....	6A003
High-speed cameras and imaging devices and "components" therefore not controlled	

Description	ECCN Citation
by ECCN 6A003 .....	6A203
High-speed cameras and imaging devices and “components” therefore, “software” “specially designed” to enhance or release the performance characteristics of devices to meet or exceed the performance characteristics described in ECCN 6A203 .....	6D201
High-vacuum service equipment .....	2B999.k
High-velocity gun systems.....	2B232
Hinges for ground vehicles .....	0A606.y.11
HIPS (Hot Isostatic Presses) .....	2B204
HIPS (Hot Isostatic Presses) .....	2B004
HIPS (Hot Isostatic Presses) .....	2B104
Hog cholera virus (classical swine fever virus) .....	1C351.a.9
Hollow cylinder centrifugal balancing machines .....	2B229.b
Holographic sights .....	0A504.b
Holographic sights that have focal plane array (visible wavelength only), technology for ...	0E504
Honing machines, gear .....	2B003
Honing machines, gear.....	2B003
Horses by sea .....	0A980
Hoses (brake) for ground vehicles .....	0A606.y.1
Hoses (cooling systems) for ground vehicles .....	0A606.v.7
Hoses (fuel) for gas turbine engines .....	9A619.y.3
Hoses (fuel and hydraulic) for military aircraft .....	9A610.y.10
Hoses (hydraulic system) for ground vehicles.....	0A606.y.10
Hoses for pneumatic/hydraulic/oil/fuel systems in surface vessels of war.....	8A609.y.2
Hoses (pneumatic) for ground vehicles .....	0A606.y.13
Hot isostatic presses (HIPS) .....	2B204
Hot isostatic densification technology/data, Al/Ti/Superalloys.....	2E003.b.2.d
Hot isostatic presses (HIPS).....	2B004
Hot cap sealers (semi-automatic or automatic) for ceramic microcircuit .....	3B991.b.3.c
Hot cell manipulators.....	2B225
Hot cells .....	0B999
Hot isostatic presses (HIPS) .....	2B104
HT-2 toxin.....	1C351.d.8
HTPB (Hydroxy-terminated polybutadiene) propellant additive .....	1C111.b.2
Hull penetrators/connectors, fiber optic.....	8A002.c
Human pathogens and “toxins” .....	1C351
Hybrid integrated circuits .....	3A001.a Note 2
Hybrid rocket propulsion systems .....	9A009
Hybrid computers & components .....	4A001
Hybrid computers and electronic assemblies.....	4A994.k
Hybrid computers .....	4A102
Hybrid computer electronic systems/electronic assemblies .....	4A001.a
Hybrid rocket motors and components .....	9A109

Description	ECCN Citation
Hydraulic fluids .....	1C980
Hydraulic fluids .....	1C996
Hydraulic forming equipment.....	2B999.b
Hydraulic fracturing items .....	0A998.b
Hydraulic fracturing ‘proppant,’ ‘fracking fluid,’ and chemical additives therefor .....	0A998.b.2
Hydraulic pressing, direct-acting technology .....	2E003.b.1.c
Hydraulic stretch-forming machines and dies technology.....	2E003.c
Hydrazine.....	1C111.d
Hydrides of Antimony, arsenic & phosphorus .....	3C004
Hydrocarbon oils, synthetic .....	1C996
Hydroclave temperature, pressure or atmosphere regulation technology.....	1E103
Hydrodynamic calculations/modeling, software for.....	0D999.c
Hydrofoil vessel technology .....	8E002.c.3
Hydrogen.....	1C980
Hydrogen cyanide (74-90-8).....	1C355.b.1.c, 1E355.b.3
Hydrogen fluoride.....	1C350.d.14
Hydrogen fluoride (HF) lasers .....	6A005.d.5.a
Hydrogen isotope storage & purification systems .....	1B231.b.2
Hydrogen refrigeration units.....	1B231.b.1
Hydrogen sulphide-water exchange tray columns.....	1B229
Hydrogen-cryogenic distillation columns.....	1B228
Hydrophone arrays, towed acoustic.....	6A001.a.2.b
Hydrophone arrays (towed) acoustic data processing source code .....	6D003.a.2
Hydrophones .....	6A001.a.2.a
3-Hydroxy-1-methylpiperidine .....	1C350.d.15
Hydroxy-terminated polybutadiene (HTPB) .....	1C111.b.2
ICP/MS (Inductively coupled plasma mass spectrometers) .....	3A233.a
III/V and II/VI semiconductor materials purifying or processing equipment .....	3B991.b.1.b
III/V compound substrates, gallium or indium .....	3C001.c
Identification plates and nameplates.....	3A611.y.33
Identification plates for gas turbine engines .....	9A619.y.7
Igniters .....	1C608.e or 1C992.f
Image enhancement, digital equipment .....	4A003
Image enhancement equipment.....	4A994.f
Imaging devices .....	6A002
Imaging device manufacturing equipment and systems .....	3B991.b Note
Image intensifier tubes & components .....	6A002.a.2
Image intensifier tubes, direct view .....	6A002.c.1 or c.3
Image transfer equipment .....	3B991.b.2
Imaging cameras .....	6A003.b
Imaging cameras with focal plane arrays of 6A002.a.3.....	6A003.b.4
Imaging cameras with image intensifiers of 6A002a.2.a.....	6A003.b.3



Description	ECCN Citation
Imaging cameras incorporating solid-state detectors specified by 6A002.a.1.....	6A003.b.5
Imaging devices .....	6A203.b.3
Imaging equipment, visible & infrared.....	6A002.c
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Imaging sensors, multispectral and monospectral .....	6A002.b
Immobilization guns and projectiles.....	0A503
Immunotoxins and vaccines.....	1C991
Impregnated cathodes for electronic tubes .....	3A001.b.1.c
Imprint lithography equipment .....	3B001.f.2
Improvised explosive devices (specially designed or modified disposal equipment , components, and accessories) .....	1A006
Improvised Explosive Devices (IED) activation devices .....	5A001.h
IMU platform balance fixture .....	7B003 or 7B101
IMU platform tester .....	7B003 or 7B101
IMU stable element handling fixture .....	7B003 or 7B101
Incinerators designed to destroy the chemicals controlled by 1C350.....	2B350.j
Independent (air) power systems underwater .....	8A002.j
Indicator dials.....	3A611.y.26
Indicator heads designed/modified for use with balancing machines in 2B119.a.....	2B119.b
Indium organo-metallic compounds .....	3C003
Indium III/V compounds substrates.....	3C001.c
Induction coil magnetometers.....	6A006.c
Induction furnace, controlled environment inert gas .....	2B226
Induction furnace, vacuum.....	2B226
Inductively coupled plasma mass spectrometers (ICP/MS) .....	3A233.a
Industrial process control hardware/systems designed for power industries.....	1B999.c
Industrial process control hardware/systems designed for power industries controlled by 1B999, software for.....	1D999.a
Inert gas environment induction furnaces.....	2B226
Inertial Measurement Equipment.....	7A003.c
Inertial measurement equipment.....	7A003
Inertial measurement unit tester (IMU module) .....	7A003, 7B003 or 7B101
Inertial navigation, systems/equipment/components .....	7A103.a
Inertial navigation, systems/equipment/components .....	7A003
Inertial navigation systems not controlled by 7A003 or 7A103 .....	7A994
Inertial navigation system software, source code .....	7D002
Inertial reference Systems (IRS).....	7A003.c
Inertial sensors, optical fiber.....	6A002.d.3.a
Inflatable boats and components.....	8A992.f
Inflation cartridges .....	8A992.i
Influenza virus (Reconstructed 1918 influenza virus).....	1C351.a.41
Information security defeating, weakening or bypassing systems, equip. and components...	5A004

Description	ECCN Citation
Information security equipment software, mass market .....	5D992
.....	
.....	
Information security equipment and components, mass market.....	5A992
Information security software .....	5D002
Information security systems/equipment/devices/components.....	5A002
Information security technology, mass market.....	5E992
Information security - test, inspection, and production equipment .....	5B002
Infrared detectors, industrial space qualified .....	6A002.a.1
Infrared sensors, industrial .....	6A002.c
Infrared viewers (police model).....	9A980
Inhibited red fuming nitric acid (IRFNA).....	1C111.a.3.e
Initiation systems, single or multipoint (electric).....	3A232.b
Injector (free electron laser photo) manufacturing or inspection equipment.....	6B995.a.2
Inorganic overlay coating application technology.....	2E003.f
Inorganic chemicals listed in Supp. No. 1 to part 754 produced or derived from the Naval Petroleum Reserves .....	1C980
Inorganic fibers & filamentary materials.....	1C010.c
Inspection equipment (linear-angular for hemishells) .....	2B006.d
Inspection equipment for composite materials .....	1B001.f
Inspection machines (dimensional), devices or systems, other than those in 2B006 .....	2B206
International Space Station being developed, launched, and operated under the supervision of NASA and “parts,” “components,” “accessories” and “attachments” that are “specially designed” for the ISS. ....	9A004.w and .x
Instrumentation for gas turbine development .....	9B002, 9B619
Instrumentation for wind tunnels.....	9B005
Instrumentation systems, inertial navigation .....	7A003
Instrumentation cameras .....	6A003.a
Integrated circuit assembly equipment .....	3B991.b.3
Integrated circuit, Direct Digital Synthesizer (DDS).....	3A001.a.13
Integrated circuit test equipment, microwave.....	3B002.c
Integrated circuit test equipment, for (truth table) testing .....	3B002.b
Integrated circuit, masks .....	3B001.g, 6B002
Integrated circuits, compound semiconductor .....	3A001.a.11
Integrated circuits, custom.....	3A001.a.10
Integrated circuits, general purpose .....	3A001.a
Integrated circuits, microwave .....	3A001.b.2
Integrated circuits, radiation hardened.....	3A001.a.1
Integrated circuits and assemblies manufacturing equipment and systems.....	3B991.b
Integrated circuit and assembly testing equipment.....	3B992.b.4.b
Integrated circuit computer-aided-design (CAD) software .....	3D003

Description	ECCN Citation
Integrated circuits and assemblies inspection or testing equipment and systems.....	3B992.b
Integrated flight instrument systems/components .....	7A103.b
Integrated Navigation Systems, designed or modified for use in missiles .....	7A103.c
Integrated Services Digital Network technology .....	5E991
Integrated system source code, avionic/mission systems .....	7D003.c
Integration software for expert systems .....	2E003.e
Integration technology for flight management systems.....	7E104
Intensity modulator .....	3A001.i
Intercepting systems and equipment, communications .....	5A001.f
Intercepting devices, communications.....	5A980
Interconnect equipment (Computer).....	4A003.g
Interconnection equipment.....	3B991.b.1.1
Interface equipment (military) for use in collecting or processing samples of chemical warfare agents.....	1A607.j
Interferometers, velocity (VISARs).....	6A225
Interlacing machines .....	1B001.c
Intermediate amplifier equipment.....	5A991.b Note a.3
International Space Station parts components accessories attachments .....	9A004.w-y
Interruption, ground fault circuit .....	3A611.y.18
Interstages for missiles.....	9A117
Intrinsic magnetic gradiometers.....	6A006.c.3
Inverse synthetic aperture radar (ISAR) .....	6A008.d
Inverters (Frequency changers or converters).....	3A225
Iodo acetone (CAS 3019-04-3).....	1C607.a.12
Ion beam equipment for mask making/semiconductor devices.....	3B001.f.2
Ion beam equipment for projection image transfer.....	3B991.b.2.g
Ion beam sensitive resist materials .....	3C002.b
Ion beam system, manufacturing, repairing, physical layout analysis and testing of masks or semiconductor devices.....	3B992.b.6
Ion implantation equipment .....	3B001.b
Ion implantation equipment .....	3B991.b.1.g
Ion implantation production equipment.....	2B005.b
Ion lasers .....	6A005.a
Ion or laser beam lithography mask or reticle fabrication equipment .....	3B991.b.2.d.2
Ion plating production equipment.....	2B005.g
Ion-enhanced diffusion equipment .....	3B991.b.1.g
ISDN development/production technology .....	5E991
Isolated live cultures .....	see Cultures
Isolators capable of use with biological agents.....	2B352.f.2
Isostatic presses, hot .....	2B104
Isostatic presses, hot .....	2B204
Isostatic presses, hot.....	2B004

Description	ECCN Citation
Isostatic presses, n.e.s. ....	2B999.a
Isotope separators, electromagnetic .....	1B226
James Webb Space Telescope (JWST) and “parts,” “components,” “accessories” and “attachments” that are “specially designed” for the JWST .....	9A004.u and .v
Jamming equipment .....	5A001.f.3
Japanese encephalitis virus .....	1C351.a.19
Jet engine lubricating oil.....	1C980
Jet vane, thrust vector control sub-systems.....	9A106.c
Jet engines/components, pulse .....	9A111
Jigs and fixtures for use in the manufacture of firearms, ordnance, and other stores and appliances for land, sea, or aerial warfare .....	2B018.n
Joule-Thomson self-regulating minicoolers .....	6A002.d.2.b.6
Joy sticks.....	3A611.y.4
Jumpers, electrical.....	3A611.y.24
Junin virus.....	1C351.a.20
Kerr or Pocket cells, electro-optical shuttering.....	6A203.b.3.c
Kick motors.....	9A004
Knobs .....	3A611.y.34
Krytron tubes, gas .....	3A228.a
Kyasanur Forest disease virus.....	1C351.a.21
Laboratories (mobile), crime science.....	9A980
Laguna Negra virus.....	1C351.a.22
Laminate or composite development software .....	1D002
Laminates & composite structures, organic metal or carbon.....	1A002
Laminates, rockets/propulsion systems/space vehicles .....	9A110
Land inertial navigation equipment .....	7A003
Land-based gravity meters production equipment.....	6B007
Laser acoustic detection equipment .....	6A005.a
Laser based linear position feedback units .....	2B006.b.2
Laser based measuring instruments .....	2B006.b.3.a
Laser beam cutting machines (CNC).....	2B001.e.1.c
Laser beam equipment for mask making/semiconductor devices .....	3B001.f.2
Laser beam lithography mask or reticle fabrication equipment.....	3B991.b.2.d.2
Laser beam systems, for probing semiconductor devices.....	3B992.b.5
Laser communication technique technology .....	5E001.b.2
Laser diagnostic equipment .....	6A005.f.2
Laser diodes .....	6A005.d.1
Laser diodes designed for telecommunication.....	5A991.b Note b.4
Laser, fiber (components) .....	6A005.e.3
Laser gyro mirror characterization equipment.....	7B102
Laser microphone.....	6A005.g
Laser pointing devices for use on firearms .....	0A504.f

Description	ECCN Citation
Laser pointing devices for use on firearms that have focal plane array (visible wavelength only), technology for .....	0E504
Laser radar altimeters.....	7A106
Laser radar or Light Detection & Ranging (LIDAR) equipment .....	6A008.j
Laser radar systems.....	6A108
Laser ring gyro test equipment .....	7B002
Laser, technology .....	6E003.e
Laser welding machines.....	2B999.c
Lasers .....	6A005
Lasers .....	6A205
Lasers .....	6A995
Lasers for direct write on wafers .....	3B991.b.2.h
Lassa virus .....	1C351.a.23
Lathes (CNC).....	2B001.a
Latches for ground vehicles .....	0A606.y.11
Launch support equipment.....	9A115, 9A610.f
Launch vehicle components/structures .....	9A010, 9A610.x
Lavatories for military aircraft.....	9A610.y.11
Lavatories for submersible vessels .....	8A620.y.4
Lavatories for surface vessels of war.....	8A609.y.4
LAX-112 (3,6-diamino-1,2,4,5-tetrazine-1,4-dioxide).....	Annex to Cat 1 List of Explosives 47.b
Leg irons .....	0A982
Lenses for radiation hardened TV cameras .....	6A203.d
Lidar equipment (Laser radar) .....	6A008.j
Life jackets.....	8A992.i
Life rafts for military aircraft.....	9A610.y.12
Light gas guns(Multistage) systems .....	2B232
Light systems, fuses, and components, for ground vehicles.....	0A606.y.12
Light systems, Stroboscopic .....	8A992.c
Light systems, underwater .....	8A002.g
Light systems, underwater .....	8A002.d.2
Lights, underwater .....	8A992.j
Lights, search .....	0A617.y.1 and .y.2
Lightweight composite or foam mirror structures .....	6A004.a.3
Lightweight monolithic mirrors.....	6A004.a.2
Lightweight turbofan/turbojet engines.....	9A101, 9A619.a
Line terminating equipment.....	5A991.b Note a.2
Linear displacement measuring systems containing a laser .....	2B006.b.3.a, 2B206.c
Linear position feedback units or sensors .....	2B006.b.2
Linear measuring equipment/instruments.....	2B006.b.3
Linear focal plane arrays .....	6A002.a.3
Linear-angular inspection equipment for hemishells.....	2B006.d

Description	ECCN Citation
Liquid oxidizers, various nitrous oxides.....	1C608.m, 1C111.a.3
Liquid or water jet cutting machines (CNC).....	2B001.e.1.a
Liquid lasers.....	6A005.c
Liquid propellant tanks .....	9A103
Liquid rocket propulsion systems & components.....	9A106
Liquid rocket propulsion systems & components.....	9A006
Liquid rocket propulsion systems .....	9A005
Liquid, slurry and gel propellant control systems.....	9A106.d
Liquid propellant rocket engines .....	9A105
Liquid-liquid exchange columns, for lithium amalgams .....	1B233.b.1
Lithium metal, alloys, compounds, mixtures, products or devices.....	1C233
Lithium isotope separation facilities, plant and equipment .....	1B233
Lithium amalgam electrolysis cells .....	1B233.b.3
Lithium amalgam pumps .....	1B233.b.2
Lithograph templates .....	3B001.i
Lithography equipment, imprint.....	3B001.f.2
Lithography equipment, mask making for semiconductor wafer-processing .....	3B001.f
Lithography mask or reticle fabrication equipment.....	3B991.b.2.d.2
Lithography software.....	3D003
Location & object detection systems or transmitting and receiving arrays, acoustic ..	6A001.a.1.b
Logic arrays, field programmable (FPLA) .....	3A001.a.8
Logic processors and assemblies .....	4A003
Louping ill virus.....	1C351.a.24
Low Light Level (LLL) camera software .....	6D003
Lubricating materials .....	1C006.b
Lubricating oil.....	1C980
Lujo virus.....	1C351.a.25
Lumpy skin disease virus.....	1C351.a.26
Lymphocytic choriomeningitis virus .....	1C351.a.27
Lyssavirus (including rabies virus and all other members of the Lyssavirus genus) .....	1C351.a.40
Machine tools, E-beam .....	2B001.e.1.b
Machine tools, laser .....	2B001.e.1.c
Machine tools, numerically controlled .....	2B001
Machine tools, numerically controlled .....	2B201
Machine tools, numerically controlled and using a Magnetorheological finishing (MRF) process.....	2B002
Machine tools, numerically controlled, optical finishing .....	2B002
Machine tools, water/other liquid jet .....	2B001.e.1.a
Machine tool assemblies, units or inserts .....	2B998
Machine tool components and assemblies for 2B006 & 2B007 equipment.....	2B008
Machine tool cutting tools .....	2B008
Machine tools for generating optical quality surfaces .....	2B992

Description	ECCN Citation
Machine tools for grinding (CNC).....	2B001.c
Machine tools for grinding (CNC).....	2B201.b
Machines for milling (CNC).....	2B001.b
Machines for milling (CNC).....	2B201.a
Machine tools for turning, grinding, and milling .....	2B991.d.1
Machines for turning (CNC).....	2B001.a
Machine tool rotary position feedback units.....	2B006.c
Machine tool spindles .....	2B008.d
Machining centers (CNC).....	2B201
Machining centers (CNC).....	2B001
Machupo virus .....	1C351.a.28
Magnaporthe oryzae (Pyricularia oryzae).....	1C354.b.6
Magnesium (high purity) .....	1C228
Magnesium alloy, powder or particulate form .....	1C002.c.1.e
Magnesium alloys .....	1C002.b.5
Magnesium, metal and alloys of.....	1C011.a
Magnesium oxide (MgO) made or coated crucibles.....	2A225.a.6
Magnesium metal particulate.....	1C111.a.2.a.4
Magnetic alloy strips.....	1C003.c
Magnetic anomaly detection software .....	6D003.f.2
Magnetic bearings (suspension).....	2A001.c
Magnetic compensation systems for magnetic and underwater electric field sensors .....	6A006.d
Magnetic compensation systems software.....	6D003.f.1
Magnetic disk storage .....	3A002.a.6
Magnetic and Electric Field Sensors “software” .....	6D003.f
Magnetic gradiometers.....	6A006.c
Magnetic gradiometers, intrinsic .....	6A006.c.2
Magnetic metals .....	1C003
Magnetically enhanced, sputtering equipment .....	3B991.b.1.f
Magnetometers.....	6A006
Magnetometers not controlled by 6A006 .....	6A996.a
Magnetometer systems.....	6A006
Magnetostrictive alloys.....	1C003.b
Mandrels for rotor assembly, bellows forming.....	2B228.a
Mandrels, bellows-forming .....	2B228.c
Mandrels (precision) for filament winding machines.....	1B201
Manganin gauges, pressure.....	6A226.a
Manifolds (air, fuel, oil) for gas turbine engines .....	9A619.y.8
Manipulators, remote .....	2B225
Manipulators, for submersibles .....	8A002.i
Manned, tethered submersible vehicles .....	8A001.a

Description	ECCN Citation
Manned, untethered submersible vehicles .....	8A001.b
Manufactured gas and synthetic natural gas produced or derived from	
Naval Petroleum Reserves .....	1C984
Map cases for military aircraft .....	9A610.y.28
Maraging steel .....	1C116
Maraging steel .....	1C216
Marburgvirus (includes all members of Marburgvirus genus) .....	1C351.a.29
Marine acoustic systems .....	6A001.a
Marine boiler .....	8A992.1
Marine engines and parts (both inboard and outboard, n.e.s.) .....	8A992.g
Marine gas turbine engines .....	9A002
Marine, terrestrial acoustic equipment .....	6A991
Marx generators .....	3A999.c
Mask, gas or full face .....	1A004 or 1A995
Mask or reticle altering holders or equipment .....	3B991.b.2.d.3
Mask or reticle fabrication equipment .....	3B991.b.2.d
Mask or reticles or pellicles, stored program controlled inspection equipment .....	3B991.b.2.e
Mask software .....	3D003
Mask substrate blanks .....	3B001.j
Masks .....	8A992.i
Masks, integrated circuits of 3A001 .....	3B001.g
Masks, for optical sensors .....	6B002
Masks, mask substrates, mask-making equipment .....	3B991.b.2
Mass spectrometers & ion sources (UF6 enrichment plant) .....	3A233
Mass spectrometers, n.e.s. ....	3A999.b
Materials for reduced electromagnetic reflectivity .....	1C101
Materials “specially designed” for ground vehicles and related commodities controlled by 0A606 and not elsewhere specified on USML .....	0C606
Materials “specially designed” for surface vessels of war and related commodities controlled by 8A609 .....	8C609
Miscellaneous materials “specially designed” for military use .....	0C617
Matrix, organic .....	1A002.b
MCT (HgCdTe) crystals & epitaxial wafers .....	6C002.b
Measurement equipment, radiation .....	1A999.a
Measurement equipment, underwater velocity .....	6A001.b
Measuring instruments or systems, dimensional .....	2B006
Measuring and analysis equipment .....	3B992.b.2
Measuring systems (linear displacement) containing a laser .....	2B006.b.1.c, 2B206.c
Mechanical cameras, framing .....	6A003.a.1, 2 or 3
Mechanical caps .....	3A611.y.29
Mechanical plugs .....	3A611.y.30
Mechanical-seal or inflatable-seal walkthrough doors .....	2B352.a.2.c



Description	ECCN Citation
Media access units .....	5A991.b Note a.12
Medical countermeasures equipment (military) for use against chemical warfare agents .....	1A607.k
Medical facilities for submersible vessels .....	8A620.y.6
Medical facilities for surface vessels of war .....	8A609.y.6
Melting furnaces .....	2B227.b
Mercury amalgam pumps .....	1B233.b.2
Mercury cadmium telluride crystals & epitaxial wafers .....	6C002.b
MERS-related coronavirus (Middle East respiratory syndrome-related coronavirus) ...	1C351.a.30
Metal alloy powders or particulate form .....	1C002.c
Metal alloy particulate .....	1C111.a.2.a.4
Metal alloys .....	1C002.b
Metal alloys, aluminum or titanium .....	1C202
Metal alloys, beryllium .....	1C230
Metal alloys, boron .....	1C011.b
Metal alloys, hafnium .....	1C231
Metal alloys, lithium .....	1C233
Metal alloys, powder and material production systems and components .....	1B002
Metal alloys, tungsten .....	1C226
Metal alloys, tungsten or molybdenum .....	1C117
Metal alloys, zirconium .....	1C234
Metal coated fiber preforms .....	9A110
Metal coated fiber preforms for fiber prepregs in 9C110 .....	9C110
Metal or carbon matrix .....	1A002.b
Metal embrittlement agents .....	0A617
Metal-organic compounds, aluminum/gallium/indium .....	3C003
Metal particulate .....	1C011
Metal powder production equipment .....	1B102
Metal vapor lasers .....	6A005.b
Metal working process tools, die & fixture technology .....	2E003.b.1
Metal working manufacturing processes technology .....	2E003.b
Metallo-organic or polymeric materials .....	1C007.e
Metallurgical melting & casting furnaces .....	2B227
Metals or carbon coated fibers .....	1C010.e
Metals with high initial relative (magnetic) permeability .....	1C003.a
Methyl benzilate .....	1C350.d.16
Methyl centralites .....	1C018.a
Methyl chlorofluorophosphate .....	1C350.d.17
Methyl dichlorophosphate .....	1C350.d.18
Methyldiethanolamine (105-59-9) .....	1C355.b.2.b
Methyl difluorophosphate .....	1C350.d.19
Microbiological disposal technology .....	1E351

Description	ECCN Citation
Microchannel plates, image intensifier tubes.....	6A002.a.2
Microcomputer microcircuits.....	3A001.a.3
Microcontroller microcircuits.....	3A001.a.3
Microcyclus ulei (syn. Dothidella ulei) .....	1C354b.3
Microcystins (Cyanginosins) .....	1C351d.9
Microelectronic circuits (e.g., integrated circuits and micro-circuits) rated, certified, or otherwise specified or described as meeting or exceeding all the characteristics in 9A515.d and that are “specially designed” for defense articles, “600 series” items, or items controlled by 9A515 .....	9A515.d
Microelectronic circuits (e.g., integrated circuits and micro-circuits) that are rated, certified, or otherwise specified or described as meeting or exceeding all the characteristics in 9A515.e and that are “specially designed” for defense articles controlled by USML Category XV or items controlled by 9A515.....	9A515.e
Microfluorination ion sources.....	3A233.f
Micromachined Angular Rate Sensors .....	7A994
Microorganisms, genetically modified .....	1C353
Microphones .....	3A611.y.6
Microprocessor microcircuits .....	3A001.a.3
Microprocessor microcircuits above 530 MTOPS development/production technology.....	3E002.g
Microwave amplifiers, solid state.....	3A001.b.4
Microwave frequency extenders, mixers/converters .....	3A001.b.7
Microwave integrated circuit test equipment.....	3B002.c
Microwave integrated circuits.....	3A001.b.2
Microwave modules.....	3A001.b.2
Microwave or millimeter wave components .....	3A001.b
Microwave or millimeter wave components software.....	3D001
Microwave or millimeter wave components technology.....	3E001
Microwave “monolithic integrated circuits” (MMIC) power amplifiers.....	3A611.c, 3A001.b.2
Microwave Monolithic Integrated Circuit (MMIC) power amplifier technology .....	5E001.d or .e, 3E611.b.3, 3E001
Microwave power amplifiers .....	3A001.b.8
Microwave power modules (MPM).....	3A001.b.9
Microwave transistors (discrete).....	3A001.b.3
Microwave test receivers .....	3A002.f
Microwave wave components.....	3A001.b
Middle East respiratory syndrome-related coronavirus (MERS-related coronavirus) ...	1C351.a.30
MIG welders .....	2B999.d
Military commodities.....	0A919
Military components .....	3A611
Military construction equipment.....	0A617.y
Military electronics (equipment, end items, systems) .....	3A611

Description	ECCN Citation
Military explosive production equipment.....	1B018.a
Military ferries, bridges and pontoons.....	0A617
Military flame throwers with an effective range less than 20 meters.....	0A602.b
Military harbor entrance detection devices (magnetic, pressure, and acoustic).....	8A620
Military helmet.....	0A018
Military training equipment.....	0A614
Military vehicles.....	0A606
Military vehicle fording kits.....	0A606
Military vehicle self-launching bridge components.....	0A606
Millimeter wave components.....	3A001.b
Milling machines, (CNC) with two or more coordinated axes.....	2B001.b
Milling machines, (CNC) with two or more coordinated axes.....	2B201.a
Milling machines (CNC).....	2B991.d.1
Mills, fluid energy.....	1B119
Mining equipment.....	2B999.h
Mirror assemblies/segments, space assembly.....	6A004.c.3
Mirror characterization equipment, reflectometers.....	7B102.b
Mirror structures, lightweight foam or composite type.....	6A004.a.3
Mirrors, actively cooled or heat pipe cooled.....	6A005.e.1
Mirrors, beam steering.....	6A004.a.4
Mirrors, cockpit for military aircraft.....	9A610.y.15
Mirrors, optical.....	6A005.e.2
Mirrors, optical.....	6A004.a
Missile engine combustion regulation devices.....	9A118
Missile (usable) guidance sets.....	7A117
Missile telemetry.....	5A101
Missile modeling, simulation & integration software.....	9D103
Mixed Oxides of Nitrogen (MON).....	1C111.a.3.d
Mixers, batch.....	1B117
Mixers, continuous.....	1B118
Mixers, frequency extenders.....	3A001.b.7
Mobile communications equipment, assemblies and components.....	5A991.g
Modeccin.....	1C351.d.10
Modeling/simulation of guidance sets, software.....	7D103
Modems.....	5A991.b.2
Modular time interval meter.....	3A999.e2
Modules, microwave.....	3A001.b.2
Modules/assemblies, fast switching function.....	3A228.c
Molecular beam epitaxial growth equipment using gas sources.....	3B001.a.3
Molecular beam epitaxial growth equipment.....	3B991.b.1.e
Molecular beam mass spectrometers.....	3A233.e
Molybdenum alloy fibers.....	1C010.c Note 2

Description	ECCN Citation
Molybdenum & tungsten metals & alloys .....	1C117
Monel equipment including valves, piping, tanks and vessels .....	2B999.f
Monel plate .....	1C999.c
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Description	ECCN Citation
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N,N-diisopropyl-(beta)-aminoethyl chloride hydrochloride.....	1C350.b.11
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N,N-Dimethylacetamide.....	1C350.d.27
N,N-Dimethylbutanamide.....	1C350.d.28
N,N-Dimethylformamide.....	1C350.d.29
N,N-Dimethylisobutanamide.....	1C350.d.30
N,N-Dimethylpropanamide.....	1C350.d.31
N,N-Dipropylacetamide.....	1C350.d.32
N,N-Dipropylbutanamide.....	1C350.d.33
N,N-Dipropylformamide.....	1C350.d.34
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Description	ECCN Citation
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2-Nitrodiphenylamine.....	1C111.c.3 or 1C018.h
Nitrogen dioxide (dinitrogen tetroxide).....	1C111.a.3.b
Nitroglycerin (in medicinal form).....	1C992.1
Nitroguanidine .....	1C011.d
P-Nitromethylaniline.....	1C018.i
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N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts .....	1C355.a.2.e
N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts .....	1C355.a.2.f
N,N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides .....	1C355.a.2.b
N-Nonanoylmorpholine, (MPA) (CAS 5299-64-9).....	1C607.a.6
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Noise reduction systems for vessels, active.....	8A002.o.3.b
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Description	ECCN Citation
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Nucleic acid assemblers and synthesizers (partly or entirely automated) .....	2B352.j
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Numerical control units for machine tools and numerically controlled machine tools, n.e.s.....	2B991
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Object detection and location systems or transmitting and receiving arrays (acoustic).....	6A001.a.1.b
Ocean salvage systems.....	8A001.e
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Operating system software for real time processing equipment.....	4D993.c
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Optical fabrication technologies .....	6E993.a
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Pathogens, animal .....	1C351
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PBAA (Polybutadiene-acrylic acid) .....	1C111.b.3
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PEK (Polyether ketone) .....	1C998
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PEKK (Polyether ketone ketone).....	1C998
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Description	ECCN Citation
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Phased array antennae.....	5A991.f
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Piping, austenitic stainless steel.....	2B999.n
Piping, fittings and valves of or lined with stainless steel, copper-nickel alloy or other alloy steel .....	2A992
Piping, monel .....	2B999.f
Piping, multi-walled incorporating a leak detection port.....	2B350.h
Piping, stainless steel .....	2B999.g
Piping, vacuum .....	2B999.k
Pitch-impregnated fibers.....	1C010.e
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Description	ECCN Citation
Plant pathogens, bacteria or fungi.....	1C354
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Plasma arc jet facilities .....	9B104
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Pocket cell electro-optical shuttering.....	6A203.b.3.c
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Polybiphenylenethersulphone .....	1C008.f
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Polycrystalline alumina fibers .....	1C010.c Note 1
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Polyether ketone (PEK) .....	1C998
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Porcine Teschovirus (Teschén disease virus) .....	1C351.a.38
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Portable electric generator development or production software .....	2D994
Portable electric generators.....	2A994
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Description	ECCN Citation
Positioning equipment .....	7A105
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Positioning tables or rate tables .....	2B121
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Potassium cyanide.....	1C350.d.40
Potassium fluoride .....	1C350.d.41
Potassium hydrogen fluoride (see potassium bifluoride).....	1C350.d.39
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Potato Andean latent tymovirus (Andean potato latent virus).....	1C354.c.1
Potentiometers.....	3A611.y.7
Powassan virus.....	1C351.a.39
Powder metallurgy rotor component manufacturing equipment .....	9B009
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Precision rotor forming mandrels .....	2B209.b
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Preforms production equipment, n.e.s. ....	1B999.e
Preforms production equipment controlled by 1B999, software for .....	1D999.b
Preforms, fibrous or filamentary materials .....	1C010.e
Preforms, glass for optical fibers .....	5C991
Preforms for space vehicles (metal coated fiber).....	9A110
Preforms, fibrous or filamentary materials .....	9A110
Preforms, metal coated fiber (for propulsion systems).....	9A110
Prepreg production equipment.....	1B001.e
Prepreg production equipment.....	1B101.d
Prepregs production equipment, n.e.s. ....	1B999.e
Prepregs production equipment controlled by 1B999, software for. ....	1D999.b
Prepregs, fibrous or filamentary materials.....	1C010.e
Prepregs, resin impregnated fiber, for 9A110 items .....	9C110
Prepregs production equipment .....	1B001
Prepregs, when impregnated with phenolic or epoxy resins.....	1C010.e Note 2

Description	ECCN Citation
Prepregs, fibrous or filamentary materials .....	9A110
Presses, hot isostatic .....	2B204
Presses, hot isostatic .....	2B104
Presses, hot isostatic.....	2B004
Presses, hot isostatic n.e.s. ....	2B999.a
Pressure transducers.....	2B230
Pressure regulators, air cylinders, hoses, valves and backpacks.....	8A992.h
Pressure sensors, manganin & quartz .....	6A226
Primary cells and secondary cells .....	3A001.e.1.a or 3A991.j
Printed circuit boards for numerical control units, machine tools or feed back devices .....	2B998.c
Printed circuit boards & populated circuit card assemblies.....	3A611.g, y.15
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Process control hardware/systems designed for power industries controlled by 1B999, software for .....	1D999.a
Process control systems for use in nuclear reactor equipment .....	2A290.b
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Processors, digital signal.....	3A001.a.3 Note
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Production equipment, reentry vehicles.....	9B115
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Programmable & logic arrays (FPGA's & FPLA's), field .....	3A001.a.8
Programmable logic devices (PLD).....	3A611.f, y.14
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Proppant .....	0A998.b.2
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Description	ECCN Citation
Propellants and constituent materials .....	1C111
Propellant (liquid) production equipment and components.....	1B115
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Propellant (solid) production equipment and components .....	1B117
Propellants, having nitrocellulose.....	1C608.a
Propellers and systems used with reciprocating engines for military aircraft .....	9A610.y.25
Propeller blades or propfans composite technology .....	9E003.b.2, 9E610.y
Propeller noise reduction technology.....	8E002.a
Propeller noise reduction software.....	8D002
Propulsion equipment, nuclear.....	0A002
Propulsion systems/components, production equipment.....	9B115, 9B619
Propulsion systems, rocket.....	9A005
Propulsion equipment, underwater .....	8A992.j
Propulsion, satellites .....	9A515
Propulsion system components/structures, launch-vehicle.....	9A010
Propulsion system composite components/structures.....	9A110, 9A619.x
Propulsion system use software .....	9D101, 9D610.a
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Propulsion systems, rocket.....	9A007
Propulsive substances .....	1C111.a
Propyleneimine .....	1C608.1
Protection equipment (military) for toxicological agents .....	1A607.f
Protective and detection equipment.....	1A004, 1A995 or 2B351
Protective clothing, Independently ventilated.....	2B352.g.1
Protective suits, gloves, shoes.....	1A004, 1A995 or 2B352.g.1
Proximity focused image intensifier tubes.....	6A203.b.3.a
Pseudomonas mallei (Burkholderia mallei).....	1C351.c.5
Pseudomonas pseudomallei (Burkholderia pseudomallei) .....	1C351.c.6
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Steam sterilizable freeze drying equipment.....	2B352.e
Steel, maraging .....	1C216
Steel, maraging .....	1C116
Steel, Titanium-stabilized duplex stainless (Ti-DSS).....	1C118
Steel plate, stainless .....	1C999.b
Stealth materials, coatings and treatments for signature suppression.....	0C617.a
Step & repeat equipment, semiconductor wafer processing.....	3B001.f.1
Stirling cycle engine, air independent.....	8A002.j.4
Storage phosphor image plates .....	1A999.b
Storage tanks, containers, receivers (chemical, with total internal volume greater	

Description	ECCN Citation
than 100 L) and prefabricated repair assemblies therefor .....	2B350.c
Stored program controlled (SPC) switching equipment .....	5A991.c
Stored program controlled (SPC) switching equipment, equipment for the development of equipment employing.....	5B001.b
Stored program controlled (SPC) switching equipment, software for the development of equipment employing .....	5D001.d
Stored program controlled (SPC) switching equipment, technology for the development of equipment employing .....	5E001.c
Stored program controlled equipment controlled by 3B, software for use of .....	3D002
Stored program controlled crystal pullers.....	3B991.b.1.c.2
Straight jackets.....	0A982
Strap down/gimbal inertial navigation systems or equipment.....	7A003
Streak cameras, mechanical type .....	6A203.a.2
Streak cameras, mechanical or electronic .....	6A003.a.3
Streak tubes, electronic streak cameras .....	6A203.b.1
Streak cameras, electronic type.....	6A203.b.1
Striplines to provide low inductance path to detonators .....	3A234
Stroboscopic light systems.....	8A992.c
Structural composites production equipment .....	1B101
Structures and composite structures, laminate, and manufacturers for missiles.....	9A110
Stun guns.....	0A503
Stun cuffs .....	0A982
Submarine diesel engines.....	8A620.d
Submarine engines, n.e.s.....	8A992.g
Submarine nets.....	8A620.e
Submarine vessel positioning systems, acoustic.....	6A001.a.1.d
Submersible systems .....	8A992.e
Submersible vessels, cargo and transport .....	8A620
Submersible vessels, military.....	8A620
Submersible vessels, oceanographic and associated commodities .....	8A620
Submersible vehicles operation software (unmanned) .....	8D999
Submersible vehicles/vehicle systems, equipment, or components (non-military).....	8A002.a
Submersible vehicles/vehicle systems or equipment (non-military) .....	8A001
Substrate development/production technology, diamond film .....	3E003.d
Substrates, for X-ray masks .....	3B991.b.2.b.2
Substrates, hard surface coated.....	3B991.b.2.b.1
Substrates, multi-layer hetero-epitaxial materials.....	3C001
Substrates, semiconductor with resist coating .....	3C002
Substrates with at least one epitaxial layer of silicon carbide, gallium nitride, aluminum nitride or aluminum gallium nitride .....	3C006

Description	ECCN Citation
Suid herpesvirus 1 (Aujeszky's disease; Pseudorabies virus) .....	1C351.a.51
Suits, protective.....	1A004, 1A995 or 2B352.f.1
Sulphur dichloride.....	1C350.c.7
Sulphur monochloride.....	1C350.c.8
Supercomputers, see Computers	
Superconducting quantum interference devices (SQUIDs).....	6A006.a.1
Superconductive composite conductor .....	1C005
Superconductive gates, current switching.....	3A001.d.1
Superconductive electrical equipment .....	9A620.b
Superconductive electromagnetic sensors .....	6A996.b
Superconductive electromagnets or solenoids.....	3A201.b
Superconductive electromagnets or solenoids.....	3A001.e.3
Superconductive devices or circuits.....	3A001.d
Superconductive quantum interference devices (SQUIDs).....	6A006.a.1
Superconductive propulsion engines .....	8A002.o.2.c
Superconductive electromagnetic sensors .....	6A996
Superconductive electronic device technology.....	3E003.c
Superplastic forming technology, metal working.....	2E003.b.1.a
Superplastic forming tools, dies, molds or fixtures .....	1B003
Superplastic forming technology/data, Al/Ti/Super alloys.....	2E003.b.2.a
Surface acoustic wave devices.....	3A001.c.1
Surface coating & processing equipment .....	2B005
Surface effect vehicles technology .....	8E002.c.1, c.2
Surface finishing equipment .....	3B991.b.1.k
Surface irregularity measuring equipment/instruments.....	2B006.c
Surface skimming (shallow bulk) acoustic wave devices.....	3A001.c.1
Surface vessel positioning systems, acoustic.....	6A001.a.1.d
Surface vessels & components.....	8A609
Surface vessels of war and related commodities .....	8A609
Surface wave radar, high frequency.....	3A611.e
Surreptitious interception devices.....	5A980
Surreptitious interception systems and equipment .....	5A001.f
Surreptitious interception systems and equipment, software for.....	5D001 or 5D980
Surreptitious interception systems and equipment, technology for.....	5E001 or 5E980
Survey equipment, surface vessel.....	6A001.a.1.a.1
Survey equipment, underwater .....	6A001.a.1.a.2
Survey systems or transmitting and receiving arrays, bathymetric .....	6A001.a.1.b
Swine fever virus (African) .....	1C351.a.2
Swine fever virus (Hog cholera virus).....	1C351.a.9
Swine vesicular disease virus (Porcine enterovirus type 9).....	1C351.a.52
Switch fabric development/production technology .....	5A991.c.10
Switches, filtered and unfiltered mechanical.....	3A611.y.21

Description	ECCN Citation
Switching devices, modules or assemblies .....	3A228
Switching equipment, stored program controlled .....	5A991.c
Synchronous Digital Hierarchy (SDH) technology .....	5E001.b.4
Synchronous Digital Hierarchy (SDH) technology .....	5E991.a.2
Synchronous Optical Network technology (SONET).....	5E001.b.4
Synchronous Optical Network technology (SONET).....	5E991.a.2
Synchytrium endobioticum.....	1C354.b.9
Synthetic Aperture Sonar (SAS) designed for seabed imaging.....	6A001.a.1.a.3
Syntactic foam, underwater use .....	8C001
Synthetic crystalline laser host material .....	6C005
Synthetic diamond material .....	6C004.f
Synthetic aperture radar (SAR).....	6A008.d
Systolic array computers/assemblies/components.....	4A004.a
T-2 toxin.....	1C351.d.15
Tanks, austenitic stainless steel.....	2B999.n
Tanks, chemical storage (capacity greater than 100 L) .....	2B350.c
Tanks, monel.....	2B999.f
Tanks, stainless steel.....	2B999.g
Tank turret rings and sprockets induction hardening machines.....	2B018.m
Tank turret bearing grinding machines .....	2B018.s
Tantalum crucibles coated with tantalum carbide/nitride/boride.....	2A225.c
Tantalum made or lined crucibles.....	2A225.b
Tape designed for testing recording equipment of entry 3A002a.....	3A002.a
Tape bonders, stored program controlled equipment .....	3B991.b.3.b
Tape recording equipment .....	3A002.a
Tape-laying machines .....	1B101.b
Tape-laying machines .....	1B001.b
Tar sands .....	1C981
Tear gas.....	1A984
Tear gases and riot control agents .....	1C607.a
<i>Technology, see product group E for controls for each category.</i>	
Technology, airborne equipment .....	7E004.a
Technology, development of frequency hopping techniques .....	5E001.b.4
Technology, development of spread spectrum techniques .....	5E001.b.4
Technology, “development,” “production,” or “use” of “software” controlled by ECCN 3D201 or 3D202 .....	3E202
Technology, diamond substrate film.....	3E003.d
Technology, for commodities controlled by 8A609, 8B609, or 8C609, or “software” controlled by 8D609 .....	8E609
Technology, for ground vehicles and related commodities in 0A606, 0B606, 0C606 or software in 0D606.....	0E606
Technology, for items controlled by 0A617, 0B617, 0C617, 0D617.....	0E617

Description	ECCN Citation
Technology, for items controlled by 8A620, 8B620 or 8D620 .....	8E620
Technology, gas turbine engine components.....	9E003.c, 9E619
Technology, gas turbine engine components.....	9E003.a, 9E619
Technology, helicopter power transfer systems.....	9E003.d, 9E619
Technology, hetero-structure semiconductor development.....	3E003.b
Technology, high output type diesel engines.....	9E003.e
Technology, integration software for expert systems .....	2E003.e
Technology, “production” or “use” of “software” controlled by ECCN 6D201 .....	6E202
“Technology” specially designed or modified for the “development”, “production” or “use” of equipment controlled by 2A983, or the “development” of software controlled by 2D983 .....	2E983
Technology “required” for the “development” or “production” of commodities controlled by ECCN 6A002.f - ROICs .....	6A002.f
“Technology” “required” for the “development,” “production,” operation, failure analysis or anomaly resolution of commodities controlled by 9A515.d.....	9E515.d
“Technology” “required” for the “development,” “production,” failure analysis or anomaly resolution of commodities controlled by 9A515.e .....	9E515.e
Technology, superconductive electronic device .....	3E003.c
Technology, tilt rotor/wing power transfer systems development.....	9E003.d, 9E610.a
Technology, vacuum microelectronic device .....	3E003.a
TEGDN (Triethylene glycol dinitrate) propellant additive .....	1C111.c.2
Telecommunications equipment .....	5A001
Telecommunications equipment, parts, components for a military application .....	5A611, 3A611
Telecommunications equipment, high and low temperature tolerant.....	5A991.a
Telecommunication equipment not controlled by 5A001 .....	5A991
Telecommunications equipment/system software .....	5D001.c.1
Telecommunications interception equipment .....	5A001.f
Telecommunication monitoring equipment.....	5A001.f
Telecommunication test, inspection and production equipment .....	5B001
Telecommunications test equipment.....	5B991
Telecommunications transmission equipment, equipment for the development of equipment employing .....	5B001.b
Telecommunications transmission equipment, software for the development of equipment employing .....	5D001.d
Telecommunications transmission equipment, technology for the development of equipment employing .....	5E001.c
Telemetry & telecontrol equipment for missiles.....	5A101
Television cameras (radiation hardened), or lenses therefor .....	6A203.d
Television cameras, underwater.....	8A002.d.1.b
Television cameras, underwater.....	8A002.d.1
Television cameras, underwater .....	8A002.d.1.a
Television cameras, underwater.....	8A992.a.2

Description	ECCN Citation
Television systems (camera, lights, monitoring and signal transmission equipment), remote operation with submersible vehicle .....	8A992.a.1
Tellurium (Te).....	6C002.a
Tempest type equipment.....	5A003.b
Tension stretchers for prepregs/preform production .....	1B101.d
Terminal interface equipment.....	4A994.i
Terrestrial, marine acoustic equipment.....	6A991
Terrestrial equipment, specially designed for spacecraft.....	9A515
Teschen disease virus (Porcine Teschovirus) .....	1C351.a.38
Test benches/stands, for rockets/motors/rocket engines.....	9B117
Test, calibration or alignment equipment for equipment controlled by 7A.....	7B001
Test equipment - propellants and their constituents .....	1B115
Test equipment - specially designed for testing finished or unfinished semiconductor devices.....	3B002
Test facilities and equipment “specially designed” for military certification, qualification, or testing of commodities controlled by 1A607.e, .f, .g, .h, or .j or by USML XIV(f), except for XIV(f)(1).....	1B607.b
Test, inspection, and production commodities for military electronics.....	3B611
Test models for defense articles.....	0A617
Test receivers, microwave .....	3A002.f
Test tape designed for recording equipment of entry 3A002a.....	3A002.a
Testing equipment, for electronic components.....	3B992.b.4
Test, inspection, development and production equipment for Category 5 items.....	5B
Tetrazines.....	Annex to Cat 1 List of Explosives 47
Tetrodotoxin.....	1C351.d.16
TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4, 10- diazaisowurtzitane) .....	Annex to Cat 1 List of Explosives 45
Thallium arsenic selenide (Tl <sub>3</sub> AsSe <sub>3</sub> or TAS) .....	6C004.b.3
Thecaphora solani .....	1C354.b.11
Thermal batteries .....	9A604
Thermal ionization mass spectrometers (TIMS).....	3A233.c
Thermal sensors, optical fiber.....	6A002.d.3
Thermoplastic liquid crystal copolymers.....	1C008.b
Thermoset resin impregnated materials .....	1C210.c
Thio-ethers, as lubricating fluids .....	1C006.b.1
Thiodiglycol.....	1C350.b.22
Thionyl chloride.....	1C350.c.9
Thrust tabs, thrust vector control subsystems .....	9A106.c
Thrust vector control sub-system.....	9A106.c
Thrusters, satellites .....	9A515
Thulium-YAG (Tm:YAG) lasers.....	6A005.c.1, c.2 or c.3
Thulium-YSGG (Tm:YSGG) lasers .....	6A005.c.1, c.2 or c.3

Description	ECCN Citation
Thumbcuffs .....	0A983
Thumbscrews .....	0A983
Thumbwheels .....	3A611.y.22
Thyristor devices and modules, solid-state pulsed power switching .....	3A001.g
Tick-borne encephalitis virus (Far Eastern subtype, formerly known as Russian Spring-Summer encephalitis virus) .....	1C351.a.53
Tick-borne encephalitis virus (Siberian subtype, formerly known as West Siberian virus) .....	1C351.b.3
Tilletia indica .....	1C354.b.10
Tilt rotor/tilt wing power transfer system technology .....	9E003.d, 9E610.a
Tilting spindles for machine tools .....	2B009.c
Time delay general, electronic equipment for .....	3A999.e
Time interval measurement, electronic equipment for .....	3A999.e
Time or frequency domain processing & correlation equipment .....	6A001.a.2.c
TIMS (Thermal ionization mass spectrometers) .....	3A233.c
Tires (aircraft) .....	9A610.y.1
Tires (ground vehicles), except run flat .....	0A606.15
Titanium alloys .....	1C002.b.3
Titanium alloys, as tubes/solid forms/forgings .....	1C202.b
Titanium alloy/powder or particulate form .....	1C002.c.1.c
Titanium aluminides .....	1C002.a.2
Titanium-based alloys .....	1C002.b.3
Titanium doped sapphire laser host material .....	6C005.a
Titanium-sapphire (Ti: Al <sub>2</sub> O <sub>3</sub> ) lasers .....	6A005.c.1, c.2 or c.3
Titanium-stabilized duplex stainless steel 9Ti-DSS) .....	1C118
TMETN (trimethylolethane trinitrate) .....	1C111.c.4
Tooling and equipment “specially designed” for the “development,” “production,” repair, overhaul, or refurbishing of commodities controlled by 1A607.e, .f, .g, .h, or .j or by USML Category XIV(f) .....	1B607.c
Tooling for powder metallurgy rotor component manufacture .....	9B009
Torpedo nets .....	8A620.e
Torquemeter assembly software .....	9D619.b.9
Torture, specially designed implements of .....	0A983
Touchpads .....	3A611.y.28
Tow-placement machines .....	1B001.g, 1B101.a
Towed acoustic hydrophone arrays .....	6A001.a.2.b
Toxic gas monitors and monitoring systems .....	2B351
Toxins .....	1C350, 1C351, 1C355 or 1C395
Trackballs .....	3A611.y.12
Tracking radar .....	6A008.1.1
Tracking systems, precision .....	6A108.b.1
Tracking systems .....	6A008.1

Description	ECCN Citation
Tractors and parts.....	9A990
Transceivers, radio.....	5A001.b.2 through 10
Transceivers, radio.....	5A991.b.6 or 7
Transcoders (translation encoders).....	5A991.b Note a.6
Transducers, wall skin friction.....	9B008
Transducers, acoustic projectors.....	6A001.a.1.c
Transformers, electric.....	3A611.y.13
Transient recorders (Waveform digitizers).....	3A002.h or 3A992.g
Transistor test equipment, S-parameter measurement.....	3B002.a
Transistors, microwave.....	3A001.b.3, 3A611.d
Translation encoders (transcoders).....	5A991.b Note a.6
Transmission fluids, automatic.....	1C980
Transmission equipment.....	5A991.b
Transmission equipment for Improvised Explosive Devices (IED).....	5A001.h
Transmissions for tracked combat vehicles.....	0A606.d
Transmit/receive or transmit modules, transmit/receive MMICs or transmit MMICs...	3A001.b.12
Transmit/receive or transmit module technology.....	3E611.b.2, 3E001
Transmultiplex equipment.....	5A991.b Note a.9
Transport, handling, activation, and launch equipment.....	9A115
Traveling wave tubes (TWTs), industrial.....	3A001.b.1.a
Tributyl phosphate.....	1C999.d
Triethanolamine.....	1C350.c.10
Triethanolamine hydrochloride.....	1C350.d.48
Triethyl phosphite.....	1C350.c.11
Triethylene glycol dinitrate (TEGDN).....	1C111.c.2
Triggered spark-gaps.....	3A228.b
Triggers, high voltage.....	3A999.c
Tri-isopropyl phosphite.....	1C350.d.49
Trimethyl phosphite.....	1C350.c.12
Tritium, compounds & mixtures.....	1C235
Tritium plant or facilities equipment.....	1B231.b
Tritium production recovery, extraction & concentration handling facilities or plant.....	1B231.a
Tritium targets for production of tritium and related development and production technology.....	1A231
Tubes, gas krytron.....	3A228.a
Tubes, vacuum sprytron.....	3A228.a
Tunable band-pass filters.....	3A001.b.5
Tunable lasers.....	6A005.c
Tunable lasers, solid state.....	6A005.c.1, c.2 or c.3
Tungsten alloys.....	1C004
Tungsten alloy, parts.....	1C226



Description	ECCN Citation
Tungsten carbide, parts .....	1C226
Tungsten & molybdenum metal & alloys .....	1C117
Tungsten, parts .....	1C226
Turbines for use in nuclear reactors .....	2A290.a
Turbines, aero gas engines, test software .....	9D004.b, 9D619
Turbines, gas aero engines .....	9A001, 9A619.a
Turbo prop engines .....	9A619.a
Turbocompound engines .....	9A101
Turboexpanders and turboexpander-compressors .....	1B232
Turbofan & turbojet engines, lightweight .....	9A101, 9A619
Turboprop engine systems specially designed for items controlled by 9A012 .....	9A102.a
Turning machines for optical quality surfaces .....	2B992.a
Turning machines (CNC) .....	2B991.d.1
Turning machines .....	2B201.c
Turning machines (CNC) .....	2B001.a
TV cameras (radiation-hardened), or lenses therefor .....	6A203.d
TV cameras, radiation-hardened, not specified in 6A203 .....	6A999.b
Two dimensional focal plane arrays .....	6A002.a.3
TWTs (Traveling Wave Tubes) .....	3A001.b.1.a
UAVs (non-military) .....	9A012.a
UAV (military) production facilities .....	9B610.c
Ultra high temperature ceramic composites .....	1C107.d.3
Ultrasonic test equipment for nuclear reactors .....	2A291.d
Underwater breathing apparatus, self-contained .....	8A992.h
Underwater cameras, photographic .....	8A002.d, e or f
Underwater camera equipment, n.e.s. .....	8A992.d
Underwater communications systems .....	5A001.b.1
Underwater ElectroMagnetic Receivers (UEMR) .....	6A006.e
Underwater ElectroMagnetic Receivers (UEMR) software .....	6D003.f.3 or f.4
Underwater electric field sensors .....	6A006.b
Underwater lights .....	8A992.j
Underwater noise reduction technology .....	8E002
Underwater (propeller) noise reduction software .....	8D002
Underwater propulsion equipment .....	8A992.j
Underwater rebreathing apparatus .....	8A620.f
Underwater robots, computer controlled .....	8A002.h
Underwater sonar navigation systems .....	7A008
Underwater systems or equipment and parts, not controlled by 8A002 .....	8A992
Underwater television cameras .....	8A992.a.2
Underwater vehicles, industrial .....	8A001
Underwater velocity measurement equipment .....	6A001.b
Underwater vessel positioning systems, acoustic .....	6A001.a.1.d

Description	ECCN Citation
Underwater vision systems .....	8A002.d
Underwater vision systems .....	8A992.a
Unmanned aerial vehicles, not specified in 9A102 .....	9A120, 9A610
Unmanned aerial vehicles and associated systems, production equipment.....	9B010, 9A610
Unmanned aerial vehicles, associated equipment, systems, and components.....	9A012.b, 9A610
Unmanned air vehicle systems (UAVs) Non-military.....	9A012.a
Unmanned submersible vehicles.....	8A001.c.1
Unmanned submersible vehicle operation software .....	8D999
Unmanned tethered submersible vehicles.....	8A001.c.2
Unmanned untethered submersible vehicles.....	8A001.c.1
Uranium, depleted.....	1A290
Uranium titanium alloys .....	1C004
Urine collection bags/pads/cups/pumps for military aircraft.....	9A610.y.21
Vaccines and immunotoxins .....	1C991
Vacuum electronic devices .....	3A001.b
Vacuum furnaces .....	2B226
Vacuum furnaces .....	2B227
Vacuum induction furnaces .....	2B226
Vacuum induction furnace, power supplies.....	2B226
Vacuum melting, remelt & casting furnaces.....	2B227
Vacuum microelectronic device development/production technology.....	3E003.a
Vacuum pumps .....	2B231
Vacuum pumps .....	2B350.i
Vacuum pumps, bellows-sealed scroll-type .....	2B233
Vacuum tubes, electronic microwave .....	3A001.b.1
Vacuum sphytrion tubes .....	3A228.a
Vacuum valves, piping, flanges, gaskets .....	2B999.k
Valves, austenitic stainless steel .....	2B999.n
Valves, bellows seal.....	2A226
Valves, bellows.....	2B350.g
Valves (check) for hydraulic and pneumatic systems in military aircraft .....	9A610.y.4
Valves, double-seal.....	2B350.g
Valves, of or lined with stainless steel, copper-nickel alloy or other alloy steel (not having the characteristics of valves controlled by 2B350.g) .....	2A992
Valves, diaphragm .....	2B350.g
Valves, monel .....	2B999.f
Valves, multiple seal incorporating a leak detection port.....	2B350.g
Valves, non-return (check).....	2B350.g
Valves, stainless steel.....	2B999.g
Valves, vacuum.....	2B999.k
Vapor sterilizable freeze drying equipment.....	2B352.e
Variola virus.....	1C351.a.54

Description	ECCN Citation
Vector processing unit technology.....	3E002
Vector processors/assemblies .....	4A003
Vehicle position determination software .....	6D103
Vehicles, “specially designed” for a military use .....	0A606.a
Vehicles, unarmed, off-road, and armored .....	0A606.b.1
Velocity interferometers (VISARs).....	6A225
Velocity measurement equipment, underwater.....	6A001.b
Venezuelan equine encephalitis virus.....	1C351.a.55
Ventilated full or half (protective clothing) suits.....	2B352.f.1
Verocytotoxin producing E. coli (VTEC) .....	1C351.c.17
Verotoxin .....	1C351.d.13
Vesicular stomatitis virus.....	1C351.a.56
Vessels, austenitic stainless steel .....	2B999.n
Vessel positioning systems, acoustic .....	6A001.a.1.d
Vessel noise reduction equipment .....	8A002.o.3
Vessels, marine .....	8A001, 8A609, 8A620
Vessels, marine systems or equipment .....	8A992
Vessels, monel .....	2B999.f
Vessels, stainless steel .....	2B999.e
Vests, bulletproof & bullet resistant .....	1A005
Vibration test equipment, acoustic.....	9B006
Vibration test equipment, parts and components.....	9B990
Vibration test equipment using digital control techniques .....	2B116
Vibrio cholerae.....	1C351.c.21
Video cameras incorporating solid state sensors .....	6A003.b.1
Vinylidene fluoride copolymers, components of.....	1A001
virulans, fungi (Colletotrichum kahawae) .....	1C354.b.1
Virus protection software, mass market.....	5D992
Viruses .....	1C351 or 1C353
Viruses, animal pathogens .....	1C351.a
Viruses, human pathogens .....	1C351.a or .b
Viruses, plant pathogens .....	1C354.c
Viscous software, 2D or 3D engine flow modeling.....	9D004.a
Viscumin (Viscum album lectin 1).....	1C351.d.17
Vision systems, underwater .....	8A992.a
Vision systems, underwater .....	8A002.d
Voice print identification and analysis equipment and parts .....	3A980
Volkensin .....	1C351.d.18
Wafer handling systems, semiconductor .....	3B001.e
Wafer processing, semiconductor manufacture.....	3B001.e
Wafer probing equipment .....	3B992.b.3
Wafer production align and expose equipment .....	3B991.b.2.f

Description	ECCN Citation
Wafers, semiconductor with function determined .....	3A001.a
Wafers, comprising multiple epitaxially grown layers .....	3C001
Wall skin friction transducers .....	9B008
War implement machinery, equipment, gear, and specially designed parts and accessories therefor.....	2B018
Water (deep) fording kits for ground vehicles.....	0A606.e
Water jet cutting machines (CNC).....	2B001.e.1.a
Water jet (pumpjet) propulsion systems .....	8A002.p
Waterplane area vessels (small).....	8E002.c.4
Water tanks (potable) and accessories for military aircraft .....	9A610.y.17
Water tanks (potable) and accessories for submersible vessels.....	8A620.y.7
Water tanks (potable) and accessories for surface vessels of war .....	8A609.y.7
Water tunnels, propulsion model acoustic field measurement .....	8B001
Water-hydrogen sulphide exchange tray columns.....	1B229
Wave division multiplex equipment .....	5A991.b.5
Waveform digitizers (Transient recorders).....	3A002.h
Wax pattern preparation equipment, ceramic shell .....	9B991.e
Weaving machines .....	1B001.c
Weight belts .....	8A992.i
Welders, MIG .....	2B999.d
Welders, E-beam.....	2B999.e
Welding machines, laser .....	2B999.c
Western equine encephalitis virus .....	1C351.a.57
Western red cedar, logs and timber.....	1C988
Wet-spinning equipment for refractory ceramics .....	1B101.c.3
Wet-spinning equipment for refractory ceramics .....	1B001.d.3
Wetsuits.....	8A992.i
Wide-swath bathymetric survey systems.....	6A001.a.1
Wigglers (free electron laser magnet) manufacturing or inspection equipment.....	6B995.a.1
Wind tunnel aero-model technology.....	9E003.b.1
Wind tunnel, control systems.....	9B005
Wind tunnels, usable for missiles .....	9B105
Winding machines, fiber optic gyro coil.....	7B003
Windows, glass for nuclear radiation shielding .....	1A227
Windows (ground vehicle), except those for armored vehicles .....	0A606.y.16
Windshield water and wiper systems for military aircraft.....	9A610.y.22
Wing folding system software .....	0D521 No. 3
Wing folding system technology .....	9E003.j
Work stations, as computers having a CTP above 260 Mtops .....	4A003.b
X-ray converters.....	1A999.b
X-ray equipment for projection image transfer .....	3B991.b.2.g
X-ray generators, radiographic .....	3A201.c

Description	ECCN Citation
X-ray machines, flash .....	3A999.c
X-ray (non planar) inspection equipment, rocket motors .....	9B007
Xanthomonas albilineans .....	1C354.a.1
Xanthomonas axonopodis pv. citri (Xanthomonas campestris pv, citri A) (Xanthomonas campestris pv. citri) .....	1C354.a.2
Xanthomonas oryzae .....	1C354.a.3
Xanthomonas oryzae pv. oryzae (syn. Pseudomonas campestris pv. oryzae) .....	1C354.a.3
Yellow fever virus .....	1C351.a.58
Yersinia pestis .....	1C351.c.22
Yttrium oxide (yttria) (Y <sub>2</sub> O <sub>3</sub> ), crucibles made or coated .....	2A225.a.8
Zinc germanium biphosphide .....	6C004.b.4
Zinc germanium diphosphide .....	6C004.b.4
Zinc germanium phosphide .....	6C004.b.4
Zinc selenide (ZnSe), substrate blanks .....	6C004.a
Zinc sulphide (ZnS), substrate blanks .....	6C004.a
Zirconium fluoride (ZrF <sub>4</sub> ) glass .....	6C004.e
Zirconium metal particulate .....	1C111.a.2.a.1
Zirconium metal, alloy, compounds, or manufacturers .....	1C234
Zirconium oxide (zirconia) (ZrO <sub>2</sub> ) made/coated crucibles .....	2A225.a.9
Zoonotic pathogens and “toxins” .....	1C351

*Note: Prior to October 15, 2013, the CCL contained certain ECCNs that were only included as cross references to items subject to the export control regulations administered by the Nuclear Regulatory Commission. ECCNs formerly listed on the CCL that, as of October 15, 2013 were subject to the export licensing authority of the Nuclear Regulatory Commission at 10 CFR part 110 are: 0A001, 0B001, 0B002, 0B003, 0B004, 0B005, 0B006, 0C001, 0C002, 0C004, 0C005, 0C006, 0C201 and 1C012. See Section § 774.1(b) for additional information.*