

**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.

Description	ECCN Citation
Ablative liners, thrust or combustion chambers	9A106.a, 9A619.c, .e
Abrin	1C351.d.1
Absolute reflectance measurement equipment	6B004.a
Absorbers of electromagnetic waves	1C001
Absorbers, hair type	1C001.a Note 1.a
Absorbers, non-planar & planar.....	1C001.a Note 1, b or c
Absorption columns	2B350.e
Accelerators (electro-magnetic radiation).....	3A101.b
Accelerometer axis align stations	7B003 or 7B101
Accelerometer test station.....	7B003 or 7B101
Accelerometers & components therefor.....	7A101
Accelerometers & accelerometer components.....	7A001
Acoustic beacons	6A001.a.1.b
Acoustic beam forming software.....	6D003.a.1
Acoustic hydrophone arrays, towed	6A001.a.2.b
Acoustic location & object detection systems or transmitting and receiving arrays	6A001.a.1.b
Acoustic, marine, terrestrial equipment	6A991
Acoustic mounts, noise reduction equipment for vessels	8A002.o.3.a
Acoustic-optic signal processing devices	3A001.c.3
Acoustic positioning systems.....	6A001.a.1.d
Acoustic projectors	6A001.a.1.c
Acoustic seabed survey equipment.....	6A001.a.1.a
Acoustic systems, diver deterrent	8A002.r
Acoustic systems, equipment, radar, parts ... for military not on USML	6A611, 3A611
Acoustic systems, marine.....	6A001.a
Acoustic transducers	6A001.a.2.c
Acoustic underwater communications systems	5A001.b.1
Acoustic vibration test equipment	9B006
Acoustic wave devices.....	3A001.c
Acoustic-wave device manufacturing equipment and systems	3B991.b Note
Active flight control system software.....	7D003.e
Active flight control system technology	7E004.b

Active magnetic bearing systems.....2A001.c

Active acoustic systems6A001.a.1

Actively cooled mirrors6A005.e.1

Acoustic systems, equipment, radar, parts, components, accessories for military6A611, 3A611

Adamsite (Diphenylamine chloroarsine or DM) (CAS 578-94-9)..... 1C607.a.5

Adaptive control software.....2D992.a

Adaptive control software.....2D002.b.2

ADCs (analog-to-digital converters).....3A101.a

ADCs (analog-to-digital converters).....3A001.a.5

ADCs (analog-to-digital converters).....3A002.h

Additive-manufacturing equipment (directional-solidification or single-crystal) 9B001.c/9D004.c

Aero gas turbine engine/assemblies/component test software.....9D004.b, 9D619.a

Aero gas turbine engines.....9A001, 9A619.a

Aerosol challenge testing chambers.....2B352.h

Aerosol generating units specially designed for fitting to the systems
 specified in 2B352.i.1 or .i.2.....2B352.i.3

Aerosol inhalation equipment designed for aerosol challenge testing with
 microorganisms, viruses, or toxins2B352.h

Aerothermodynamic test facilities9B104

Aflatoxins.....1C351.d.2

African horse sickness virus1C351.a.1

African swine fever virus (animal pathogens)1C351.a.2

Agitators (chemical manufacturing)2B350.b

AHRS (Attitude Heading Reference Systems), source code7D002

Air traffic control software6D003.h.1

Air independent power systems (for underwater use)8A002.j

Air compressors and filtration systems designed for filling air cylinders8A992.1

Air Traffic Control software application programs6D993

Airtight vaults0A981

Airborne altimeters7A006, 9A610.v

Airborne altimeters7A106, 9A610.v

Airborne communication equipment7A994

Airborne radar equipment.....6A998

Air-cooled diesel engines and engine blocks for armored vehicles.....0A606

Aircraft.....9A610

Aircraft, civil.....9A991.b

Aircraft, demilitarized.....9A991.a, 9A610

Aircraft, n.e.s.....9A991, 9A610

Aircraft, trainer9A610.a

Aircraft breathing equipment and parts9A991.e, 9A610.g

Aircraft (military) pressurized breathing equipment9A610.g

Aircraft inertial navigation systems & equipment.....7A103.a

Description	ECCN Citation
Aircraft inertial navigation systems & equipment	7A003
Aircraft parts and components	9A991.d, 9A610.x
Aircraft wing folding system software	0D521 No. 3
Aircraft wing folding system technology	0E521 No 2
Alexandrite lasers.....	6A005.c.2.b
Align & expose step & repeat equipment (wafer processing)	3B001.f.1
Alignment equipment for equipment controlled by 7A	7B001
Alkylphenylene ethers or thio-ethers, as lubricating fluids	1C006.b.1
Alloy strips, magnetic	1C003.c
Alloyed materials production systems and components	1B002
Alloyed metal materials in powder or particulate form	1C002.b
Alloyed metal materials in the form of uncomminuted flakes, ribbons, or thin rods	1C002.c
Alloys, aluminum.....	1C202.a
Alloys, aluminum.....	1C002.a.2.d
Alloys, magnesium	1C002.a.2.e
Alloys, metal powder or particulate form	1C002.b
Alloys, nickel	1C002.a.2.a
Alloys, niobium.....	1C002.a.2.b
Alloys, titanium.....	1C202.b
Alpha-emitting radionuclides, compounds, mixtures, products or devices	1C236
Alternators for ground vehicles	0A606.y.2
Altimeters, airborne	7A006, 9A610.v
Altimeters, radar or laser types	7A106, 9A610.v
Alumina fibers	1C010.c Note 1
Aluminides.....	1C002.a.1
Aluminides, nickel	1C002.a.1.a
Aluminides, titanium.....	1C002.a.1.b
Aluminum alloys.....	1C002.a.2.d
Aluminum alloy/powder or particulate form	1C002.b.1.d
Aluminum alloys as tubes/solid forms/forgings	1C202.a
Aluminum electroplating equipment	2B999.i
Aluminum gallium nitride (AlGaN) “substrates”, ingots, boules, or other preforms of those materials	3C005.a
Aluminum nitride (AlN) “substrates”, ingots, boules, or other preforms of those materials	3C005.a
Aluminum organo-metallic compounds	3C003
Aluminum powder, spherical or spheroidal	1C111.a.1
Aluminum powder (spherical) production equipment.....	1B102
Amalgam electrolysis cells, lithium isotope separation	1B233.b.3
Amalgam pumps, lithium and/or mercury	1B233.b.2
Ammonia, aqueous	1C980

Description	ECCN Citation
Ammonium bifluoride	see ammonium hydrogen fluoride
Ammonium hydrogen fluoride	1C350.d.1
Ammonium nitrate, including certain fertilizers containing ammonium nitrate	1C997
Ammunition hand-loading equipment	0B986
Amorphous alloy strips	1C003
Amplifiers, microwave solid state	3A001.b.4
Amplifiers, pulse	3A999.d
Amplitude modulator	3A001.i
Analog computers	4A101
Analog-to-digital converters	3A101.a
Analog-to-digital conversion equipment	3A002.h
Analog-to-digital converters, integrated circuits	3A001.a.5
Analog-to-digital converters, integrated circuits that also store/process digitized data	3A001.a.14
Analyzers, network	3A002.e
Analyzers, signal	3A002.c.1
Andean potato latent virus (Potato Andean latent tymovirus)	1C354.c.1
Andes virus	1C351.a.3
Angular displacement measuring instruments	2B206.c
Angular measuring instruments	2B006.b.2
Angular measuring instruments	2B206
Angular-linear inspection equipment (hemishells)	2B206
Angular-linear inspection equipment (hemishells)	2B006.c
Angular rate sensors	7A002
Animal pathogens	1C351
Annealing or recrystallizing equipment	3B991.b.1.c.1
Antennae, phased array	5A001.d
Antennae, phased array (for radar)	6A008.e
Anti-friction bearings and bearing systems	2A001
Anti-vibration mounts (noise reduction), civil vessels	8A002.o.3.a
Antimony hydrides	3C004
Application Specific Integrated Circuits (ASICs)	3A611.f, y.14
Aramid fibers & filamentary materials	1C210.a
Aramid fibers & filamentary materials	1C010.a
Arc remelt & casting furnaces	2B227.a
Argon ion lasers	6A205.a
Argon ion lasers	6A005.a
Armor body (hard)	1A005.b
Armor body (soft)	1A005.a
Armor plate (for hard body armor)	1A613, 1A005.b
Armor plate drilling machines	2B018.a
Armor plate planing machines	2B018.b
Armor plate quenching presses	2B018.c

Description	ECCN Citation
Armor (for vehicles)	0A606.b.2.b
Arms machinery, equipment, gear, parts, and accessories	2B018
Arms (small) chambering machines	2B018.o
Arms (small) deep hole drilling machines and drills therefor	2B018.p
Arms (small) rifling machines	2B018.q
Arms (small) spill boring machines	2B018.r
Aromatic polyimides	1C008.a.3
Aromatic polyamide-imides	1C008.a.2
Aromatic polyetherimides	1C008.a.4
Array processor microcircuits	3A001.a.3 Note
Array processors/assemblies	4A004
Array processors/assemblies	4A003
Arrays of aerosol generating units or spray booms, specially designed for fitting to aircraft, "lighter than air vehicles," or "UAVs"	2B352.h.2
Arsenic trichloride	1C350.b.1
Arsenic hydrides	3C004
Asphalt paving mixtures	1C980
ASICs (Application Specific Integrated Circuits)	3A611.f, y.14
Aspheric optical elements	6A004.e
Assemblies to enhance performance by aggregation of computing elements	4A994.c
Asynchronous transfer mode (ATM) equipment	5A991.c.10.d
Atomic frequency standards	3A002.g
Atomic transition solid state lasers	6A005.a or b
Attitude Heading Reference Systems (AHRS), source code software	7D002
Attitude control equipment for missiles	7A116
Audio selector panels (military aircraft)	9A610.y.3
Audio selector panels (submersible vessels)	8A620.y.11
Audio selector panels (surface vessels of war)	8A609.y.11
Aujeszky's disease (Suid herpesvirus 1; Pseudorabies virus)	1C351.a.51
Austenitic stainless steel plate, valves, piping, tanks and vessels	2B999.n
Autoclave temperature, pressure or atmosphere regulation technology	1E103
Automated control systems, submersible vehicles	8A002.b
Automatic drug injection systems	0A981
Automotive, diesel, and marine engine lubricating oil	1C980
Avian influenza virus	1C351.a.4
Aviation engine lubricating oil	1C980
Avionic equipment, parts, and components	7A994
Avionic systems, equipment, parts ... for military not on USML	7A611/3A611
Avionics EMP/EMI protection technology	7E102
Axles for ground vehicles	0A606.y.3
Bacillus anthracis	1C351.c.1
Backshells, electric connector	3A611.y.9

Description	ECCN Citation
Bacteria	1C351.c
Bacteria	1C354.a
Balancing machines	2B119.a
Balancing machines, centrifugal multiplane.....	2B229
Balancing machines, centrifugal multiplane.....	2B999.m
Ball bearings, precision hardened steel and tungsten carbide.....	1C999.a
Ball bearings, Radial.....	2A101
Ball & solid roller bearings.....	2A001.a
Band-pass filters, tunable.....	3A001.b.5
Barium metal vapor lasers	6A005.b
Batch mixers	1B117
Bathymetric survey systems or transmitting and receiving arrays	6A001.a.1.b
Batons, shock	0A985
Batons, spiked.....	0A983
Batteries (ground vehicles)	0A606.y.4
Batteries (lead-acid and nickel-cadmium) for military aircraft	9A610.y.24
Batteries, thermal	9A604
Bay cable systems.....	6A001.a.2.e
Bay cable systems software	6D003.a.3
Bayonets.....	0A918.b
Beacons (underwater)	9A610.y.20
Beam lead bonders, stored program controlled equipment	3B991.b.3.b
Beam steering mirrors.....	6A004.a.4
Beamforming techniques	6A001.a.2.c
Bearing pullers for gas turbine engines	9B619.y
Bearings (anti-friction) and bearing systems	2A001
Bearings (e.g., ball, roller, wheel) – for ground vehicles.....	0A606.y.5
Bearings, ball & solid roller.....	2A001.a
Bearings, (e.g., ball, roller, wheel) for ground vehicles.....	0A606.y.5
Bearings, high precision/temperature/special	2A001
Bearings, magnetic (active)	2A001.c
Bearings, precision hardened steel and tungsten carbide.....	1C999.a
Bellows forming dies	2B999.b
Bellows manufacturing equipment	2B999.b
Bellows seal valves	2A226
Bellows seal valves	2B350.g
Bellows sealed valves, n.e.s.	2A999
Bellows-forming mandrels.....	2B228.c
Bellows-forming dies.....	2B228.c
Bellows-sealed scroll-type compressors	2B233
Bellows-sealed scroll-type vacuum pumps.....	2B233
Benzilic acid.....	1C350.b.2

Description	ECCN Citation
Beryllium metal, alloys, compounds, or manufactures.....	1C230
Beryllium metal particulate.....	1C111.a.2.a.4
Beryllium/beryllium substrate blanks	6C004.d
“Biocatalysts,” and biological systems therefor, not controlled by USML Category XIV(g), “specially designed” for the decontamination or degradation of chemical warfare agents controlled in USML Category XIV (a).....	1C607.c
Biocontainment chambers.....	2B352.g.2
Biocontainment isolators	2B352.g.2
Biological containment facilities, ACDP level 3 or 4.....	2B352.a.1
Biological manufacturing equipment & facilities.....	2B352
Biological safety cabinets	2B352.g.2
“Biopolymers,” not controlled by USML Category XIV(g), “specially designed” or processed for the detection or identification of chemical warfare agents specified by USML Category XIV(a), and the cultures of specific cells used to produce them.....	1C607.b
Bismaleimides.....	1C008.a.1
Bismuth.....	1C229
Bladders for aircraft/aerospace, fuel	1A001.a, 9A991.d, 9A610.x
Bladders for aircraft/aerospace/missiles, fuel	9A610.x
Blanks, beryllium/beryllium (Be/Be) deposited material	6C004.d
Blanks, Zinc selenide (ZnSe) substrate.....	6C004.a
Blanks, Zinc sulphide (ZnS) substrate	6C004.a
Bluetongue virus	1C351.a.5
Boats	8A992.f
Body armor (hard and soft).....	1A005
Boilers, Marine	8A918
Bombs, smoke.....	1A984
Bonding equipment.....	3B991.b.3.b
Boosters (commercial cast or pressed)	1C608.g
Boring equipment, large.....	2B999.h.1
Boring machines (CNC)	2B001
Boring machines (CNC)	2B201
Boron.....	1C011.b
Boron alloys particulate	1C011.b
Boron & boron compounds.....	1C225
Boron fibers	1C010.c Note 3
Bottom cable systems	6A001.a.2.e
Bottom cable systems software.....	6D003.a.3
Botulinum toxin	1C351.d.3
Boules of electro-optic materials	6C004.b
Brake discs, rotors, drums, calipers, cylinders, pads, shoes for ground vehicles	0A606.y.1
Brake pads (steel) for military aircraft.....	9A610.y.19

Description	ECCN Citation
Brayton cycle engine, air independent.....	8A002.j.1
Breathing air suit decontamination showers.....	2B352.a.2.b
Breathing equipment and parts, pressurized aircraft.....	9A991.e, 9A610.g
Bridge (self-launching) components for deployment by ground vehicles.....	0A606.f
Bridges & gateways, telecommunication.....	5A991.b.4.a
Bridges & gateways, telecommunication.....	5A991.c.9
Bromo acetone (CAS 598-31-2).....	1C607.a.10
Bromo methylethylketone (CAS 816-40-0).....	1C607.a.11
Brucella abortus.....	1C351.c.2
Brucella melitensis.....	1C351.c.3
Brucella suis.....	1C351.c.4
BTAT (Bis(2,2,2-trinitroethyl)-3,6-diaminotetrazine)	Annex to Cat 1 List of Explosives 47.a
Buckshot shotgun shells.....	0A984
Bulk acoustic wave devices.....	3A001.c.2
Bulk fluoride glass, low optic absorption.....	6C004.e.2
Bulletproof and bullet resistant vests.....	1A005
Burkholderia mallei (Pseudomonas mallei).....	1C351.c.5
Burkholderia pseudomallei (Pseudomonas pseudomallei).....	1C351.c.6
Butacene.....	1C111.c.1
CA (Bromobenzyl cyanide) (CAS 5798-79-8).....	1C607.a.1
Cables, cable assemblies, and connectors – for.....	0A606.y.6
Cable systems for communications to detect surreptitious intrusion.....	5A003.a
Cables, Optical fiber.....	5A001c
CAD (Computer-aided-design) software for semiconductors.....	3D003
Cadmium telluride (CdTe) single crystals/epitaxial wafers.....	6C002.b
Cadmium zinc telluride (CdZnTe) single crystals & epitaxial wafers.....	6C002.b
Calcium.....	1C227
Calcium fluoride (CaF ₂) made/coated crucibles.....	2A225.a.1
Calcium zirconate (metazirconate) (Ca ₂ ZrO ₃) crucibles.....	2A225.a.2
Calibration, test or alignment equipment for equipment controlled by 7A.....	7B001
Camera equipment, underwater , n.e.s.....	8A992.d
Camera, designed or modified for remote operation with submersible vehicle.....	8A992.a.1
Cameras, instrumentation.....	6A003.a
.....	
Cameras, electronic framing type.....	6A003.a.4
Cameras, electronic framing type.....	6A203.b.2
Cameras, electronic streak type.....	6A003.a.3
Cameras, electronic streak type.....	6A203.b.1
Cameras, framing.....	6A003.a.4
Cameras, framing.....	6A203
Cameras, imaging.....	6A003.b

Description	ECCN Citation
Cameras, high speed cinema recording	6A003.a.1
Cameras, mechanical high speed	6A203.a.2
Cameras, mechanical or electronic steak	6A003.a.3
Cameras, photo-optical step and repeat	3B991.b.2.d.1
Cameras, radiation hardened TV (or lenses therefor).....	6A203.d
Cameras, scanning & scanning camera systems.....	6A003.b.2
Cameras (still), for underwater use.....	8A992.b
Cameras, video using solid state sensors	6A003.b.1
Cameras and components	6A003
Cameras and components not controlled by 6A003	6A203
Cameras and imaging devices (high-speed) 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
Cameras not controlled by 6A003 or 6A203	6A993
Canopies, complete.....	9A992, 9A610.h
Caps, mechanical	3A611.y.29
Capacitors	3A001.e.2
Capacitors	3A201.a
Capacitors, high voltage.....	3A999.c
Capacitors, mica paper.....	3A611.y.5
Carbon dioxide and monoxide	1C980
Carbon dioxide detector for military aircraft	9A610.y.27
Carbon dioxide (CO ₂) lasers	6A005.d.3
Carbon fiber & filamentary materials.....	1C010.b
Carbon fiber & filamentary materials.....	1C210.a
Carbon fiber preforms.....	1C010.e
Carbon fibrous or filamentary materials.....	1A002.b.1
Carbon monoxide (CO) lasers	6A005.d.2
Carbon or alumina fiber conversion equipment.....	1B001.d.4
Carbon-carbon components, resaturated pyrolyzed.....	1A102
Carbon-carbon materials, resaturated pyrolyzed	1C102
Carbonyl dichloride (75-44-5) (Phosgene)	1C355.b.1.a
Carboxy-terminated polybutadiene (CTPB).....	1C111.b.1
Cartridge power devices	1C608.c
Casks for transport of radioactive material.....	2A291.c
Casting and remelt arc furnaces.....	2B227.a
Casting equipment (directional solidification or single crystal).....	9B001.a & 9D004.c
Catalysts, platinized	1A225
Cathodes (Impregnated) for electronic tubes.....	3A001.b.1.c
Cathodes.....	3A001.b.1
Cathodic arc deposition production equipment	2B005.f
Cedar, Western red.....	1C988

Description	ECCN Citation
Cells, primary & secondary	3A001.e.1 or 3A991.j
Cellular radio equipment/system software.....	5D991
Centralized network control.....	5A991.e
Centralized network control development/production technology.....	5E991
Centrifugal decanters	2B352.c
Centrifugal fixtures for gyro bearings.....	7B003 or 7B101
Centrifugal multiplane balancing machines.....	2B999.m
Centrifugal multiplane balancing machines for flexible rotors	2B229.a
Centrifugal separators	2B352.c
Centrifuge rotor balancing equipment	2B229
Centrifuge rotor assembly equipment.....	2B228.a
Centrifuges capable of imparting accelerations above 100 g	2B122
Ceramic based materials	1C007
Ceramic base materials, of single or complex borides of titanium.....	1C007.a
Ceramic composite materials, useable for radomes or nose tips	1C107.b
Ceramic cores for blades & vanes	9B001.b, 9B619.a
Ceramic core manufacturing equipment.....	9B991.d, 9B619.a
Ceramic fibers.....	1C010.c Note 4
Ceramic non-composite materials.....	1C007.b
Ceramic shells for blades & vanes.....	9B001.b, 9B619.a
Ceramic shell wax pattern preparation equipment.....	9B991.e, 9B619.a
Ceramic-ceramic composite materials.....	1C007.c.1.a
Ceramic-ceramic-matrix composite materials	1C007.c.2
Ceramic-matrix composite materials	1C007.c.1.b
Cerium sulphide (Ce ₂ S ₃) made/coated crucibles	2A225.a.3
Chambers, aerosol challenge testing (capacity of 1 m ³ or more)	2B352.h
Changers, frequency	3A999.a
Changers, frequency (converters or inverters).....	3A225
Chapare virus	1C351.a.6
Charges, containing military explosives for civil applications.....	1C608
Charges, non-irritant smoke.....	1A984
Charges, shaped for oil well operations.....	1C608.f, 1C992.a
Chemical agents	1A984
Chemical disposal technology	1E351
Chemical incinerators	2B350.j
Chemical production process control software.....	1D390
Chemical production facility technology.....	1E350
Chemical warfare (CW) precursors	1C350
Chemical lasers	6A005.d.5
Chemical manufacturing equipment.....	2B350
Chemical manufacturing facilities	2B350
Chemical mixtures, not controlled by USML Category XIV(f), “specially designed”	

Description	ECCN Citation
for military use for the decontamination of objects contaminated with materials specified by USML Category XIV(a) or (b)	1C607.d
Chemical (precursor) mixtures and test kits	1C395
Chemical (precursor) mixtures, used in the production of chemical warfare agents.....	1C995
Chemical storage tanks & containers.....	2B350.c
Chemical Vapor deposition (CVD) equipment.....	3B991.b.1.i
Chemical vapor deposition (CVD) equipment, epitaxial growth	3B001
Chemical vapor deposition (CVD) equipment, production (fiber).....	1B001.d.2
Chemical vapor deposition (CVD) equipment, production	2B005.a
Chemicals, CWC Schedule 2 and 3	1C355
Chemicals, precursors for toxic chemical agents.....	1C350
Chikungunya virus (Human pathogen).....	1C351.a.7
Chip carrier bonders, stored program controlled equipment	3B991.b.3.b
Chlamydia psittaci (Chlamydophila psittaci).....	1C351.c.7
Chlorine trifluoride (ClF ₃)	1C238
2-Chloroethanol	1C350.d.2
Chloropicrin (trichloronitromethane)(76-06-2)	1C355.b.3
Choclo virus	1C351.a.8
Cholera toxin.....	1C351.d.4
Chromatography analytical instruments	3A999.f
Chronometry equipment	3A999.e.2
Cinema recording cameras.....	6A003.a.1
Circuit breakers.....	3A611.y.17
Clamps (V-Band, cushion, broomstick, hinged, and loop) for gas turbine engines	9A619.y.5
Classical swine fever virus (Hog cholera virus)	1C351.a.9
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
Coating equipment for prepregs/preform production	1B101.d
Coating & processing equipment, for non-electronic substrates	2B005

Description	ECCN Citation
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
Compound semiconductor photocathodes	6A002.a.2.c.3
Compressors.....	9A619.x

Description	ECCN Citation
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
Construction equipment "specially designed" for military use	0A617.y.1

Description	ECCN Citation
Contactors	3A611.y.27
Contagious bovine pleuropneumonia (<i>Mycoplasma mycoides</i> subspecies <i>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
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
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
Cryocoolers for optical sensors, non-space qualified	6A002.d.2
Cryogenic and superconductive equipment, parts, components, accessories.....	9A620
Cryogenic and superconductive test equipment	9B620

Description	ECCN Citation
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 enabling systems, equipment, integrated circuits, etc.....	5A002.b
Cryptographic enabling software.....	5D002.b
Cryptographic enabling 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
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
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
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

Description	ECCN Citation
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.7
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
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

Description	ECCN Citation
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 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 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

Description	ECCN Citation
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.8
Dimethylamine hydrochloride.....	1C350.d.9
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.....	0A985
Discrete microwave transistors.....	3A611.d
Discrete microwave transistor technology.....	3E611.b.4
Display, 3D (software for).....	7D004.g
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

Description	ECCN Citation
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
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.....	0A985
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
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 radiation sensors, optical fiber.....	6A002.d.3.a
Electromagnetic signature reduction devices.....	1A101
Electromagnetic signature reduction materials.....	1C101

Description	ECCN Citation
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
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, 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
Electrical connectors.....	3A611.y.1
Electronically steerable antennae, phased array	5A001.d
Electroplating equipment	2B999.i

Description	ECCN Citation
EMP/EMI protection technology, avionic systems	7E102
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
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 ₂ O ₃) 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 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

Description	ECCN Citation
Ethyl-NN-diphenylurea (ethyl unsymmetrical diphenylurea)	1C018.d
Ethyldibromoarsine (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
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

Description	ECCN Citation
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
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
Fire extinguishers for military aircraft.....	9A610.y.26
Fire detectors for military aircraft.....	9A610.y.27

Description	ECCN Citation
Firearms, muzzle-loading (black powder)	0A018.c
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
Flip-guards	3A611.y.32
Flow-forming machines	2B009
Flow-forming machines	2B109
Flow-forming machines	2B209
Flow-forming machines	2B999i
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
Flurocarbon 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

Description	ECCN Citation
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
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

Description	ECCN Citation
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
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

Description	ECCN Citation
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
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

Description	ECCN Citation
Glass, high homogeneity.....	6C004.e.3
Global Navigation Satellite Systems (GNSS) ranging signals decryption software	7D005
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
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	

Description	ECCN Citation
(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	2B018.e or f
Gun barrel trepanning machines	2B018.g
Gun boring and turning machines	2B018.h
Gun honing machines	2B018.i
Gun, immobilization	0A985
Gun jump screw lathes	2B018.j
Gun rifling machines	2B018.k
Gun, shotgun	0A984
Gun straightening presses	2B018.l
Gun, stun	0A985
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
Hacking systems, equipment and components	5A004
Hafnium oxide (hafnia) (HfO ₂) made/coated crucibles	2A225.a.5
Hafnium metal, alloys & compounds	1C231
Hafnium fluoride (HfF ₄) 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

Description	ECCN Citation
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.50
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 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	0A987
Holographic sights that have focal plane array or image intensifier tube, technology for	0E987
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

Description	ECCN Citation
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
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.10
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

Description	ECCN Citation
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.11
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 6A002.a.2.a.....	6A003.b.3
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
Imaging satellites	9A515
Imaging sensors, multispectral and monospectral	6A002.b
Immobilization guns and projectiles.....	0A985
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

Description	ECCN Citation
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.40
Information security defeating, weakening or bypassing systems, equip. and components...5A004	
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

Description	ECCN Citation
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
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
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
Interrupters, ground fault circuit.....	3A611.y.18
Interstages for missiles.....	9A117
Intrinsic magnetic gradiometers.....	6A006.c.3

Description	ECCN Citation
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
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

Description	ECCN Citation
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	0A987
Laser pointing devices for use on firearms that have focal plane array or image intensifier tube, technology for	0E987
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

Description	ECCN Citation
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
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

Description	ECCN Citation
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.39
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
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.b.1.e
Magnesium alloys	1C002.a.2.e
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

Description	ECCN Citation
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
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

Description	ECCN Citation
Mask software.....	3D003
Mask substrate blanks.....	3B001.j
Masks.....	8A992.i
Masks, integrated circuits of 3A001.....	3B001.g
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
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
Metal alloy powders or particulate form.....	1C002.b
Metal alloy particulate.....	1C111.a.2.a.4
Metal alloys.....	1C002.a
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

Description	ECCN Citation
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 centralites.....	1C018.a
Methyldiethanolamine (105-59-9).....	1C355.b.2.b
Methyl benzilate.....	1C350.d.12
Microbiological disposal technology	1E351
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

Description	ECCN Citation
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
MIG welders	2B999.d
Military commodities.....	0A919
Military components	3A611
Military construction equipment.....	0A617.y
Military electronics (equipment, end items, systems)	3A611
Military explosive production equipment.....	1B018.a
Military ferries, bridges and pontoons	0A617
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

Description	ECCN Citation
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
Molybdenum & tungsten metals & alloys	1C117
Monel equipment including valves, piping, tanks and vessels	2B999.f
Monel plate	1C999.c
Monitoring equipment, radiation	1A999.a
Monitoring systems, toxic gas	2B351
Monkeypox virus	1C351.a.30
Monolithic integrated circuits.....	3A001.a Note 2
Monolithic integrated circuit repair or trimming laser equipment.....	3B991.b.1.m
Monolithic Microwave Integrated Circuit (MMIC) amplifiers	3A001.b.12
Monospectral imaging sensors.....	6A002.b
Motion control boards for machine tools.....	2B991.b
Motion simulators or rate tables	2B120
Multi-chamber central wafer handling systems.....	3B001.e
Multi-channel interval meter.....	3A999.e2
Multichip modules	3A611.h, y.16
Multi-data-stream processing equipment, development or production technology for	4E993
Multi-element detector arrays	6A002.a.3
Multi-layer hetero-epitaxial material substrates & wafers.....	3C001
Multi-layer masks (with phase shift layer), for integrated circuits.....	3B001.h

Description	ECCN Citation
Multichip integrated circuits	3A001.a Note 2
Multichip modules	3A611.h, y.16
Multilevel security capability, equipment.....	5A002.d
Multimode optical fiber & cables, high tensile strength.....	5A001.c
Multiple-seal pumps.....	2B350.i
Multiplex equipment.....	5A991.b Note a.7
Multipoint initiation systems	3A232.b
Multipoint restraint devices	0A982
Multispectral imaging sensors	6A002.b
Multistage light gas gun systems	2B232
Multi-walled piping incorporating a leak detection port	2B350.h
Murray Valley encephalitis virus.....	1C351.a.31
Mycoplasma capricolum subspecies capripneumoniae ("strain F38")	1C351.c.15
Mycoplasma mycoides subspecies mycoides SC (small colony) (a.k.a. contagious bovine pleuropneumonia).....	1C351.c.16
N,N-diisopropyl-beta-aminoethane thiol	1C350.b.8
N,N-diisopropyl-(beta)-amino ethanol	1C350.b.9
N,N-diisopropyl-beta-aminoethyl chloride.....	1C350.b.10
N,N-diisopropyl-(beta)-aminoethyl chloride hydrochloride.....	1C350.b.11
NBC (Nuclear, biological and chemical) detection system software	1D003
NBC (Nuclear, biological and chemical) detection system libraries or parametric technical databases.....	1E002.g
NN-Diphenylurea (unsymmetrical diphenylurea)	1C018.b
Name plates and identification plates	3A611.y.33
Nanocrystalline alloy strips.....	1C003.c
Natural gas liquids and derivatives produced or derived from Naval Petroleum Reserves	1C983
Navigation, airborne comm. & other avionics equip. technology	7E004, 7E994
Navigation, airborne communication and other avionics software	7D004, 7D994
Navigation/avionics equipment, systems, parts, components ... for military	7A611, 3A611
Navigation direction finding equipment	7A004-7A008, 7A103-7A105, 7A994
Navigation systems, equipment & components, inertial	7A103
Navigation systems, equipment & components, inertial	7A003
Navigation systems, equipment, parts ... for military not on USML.....	7A611/3A611
Navigation systems, underwater sonar	7A008
NDT (non-destructive test) inspection equipment (3D)	1B001.f
NDT (non-destructive test) inspection equipment.....	9B007
Neodymium lasers	6A005.d.6
Neodymium lasers	6A205.f
Nets (submarine or torpedo)	8A620.e
Network analyzers	3A002.e

Description	ECCN Citation
Network access controllers contained in computer equipment.....	4A994.i
Network access controllers contained in telecommunications	5A991.b.4.a
Neural computers/assemblies/components	4A004.b
Neural network integrated circuits.....	3A001.a.9
Neutron generator systems & tubes	3A231
Neutronic calculations/modeling, software for.....	0D999.a
Newcastle disease virus	1C351.a.32
Nickel alloy	1C002.a.2.a
Nickel alloy/powder or particulate form	1C002.b.1.a
Nickel aluminides	1C002.a.1.a
Nickel based alloys	1C002.a.1
Nickel electroplating equipment.....	2B999.i
Nickel metal (made from powder).....	1C240
Nickel powder.....	1C240
Night vision devices.....	6A002.a.2, 6A003.b.3, 6A003.b.4, 6A202 or 6A203
Night vision technology.....	6E002 or 6E101
Niobium alloys.....	1C002.a.2.b
Niobium alloy/powder or particulate form	1C002.b.1.b
Nipah virus	1C351.a.33
3-Nitroaza-1,5 pentane diisocyanate.....	1C018.l
Nitric acid.....	1C999.e
Nitrided niobium-titanium-tungsten alloy crucibles.....	2A225.a.7
2-Nitrodiphenylamine	1C111.c.3 or 1C018.h
Nitrogen dioxide (dinitrogen tetroxide).....	1C111.a.3.b
Nitroglycerin (in medicinal form).....	1C992.l
Nitroguanidine	1C011.d
P-Nitromethylaniline.....	1C018.i
N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-chlorides and corresponding protonated salts	1C355.a.2.d
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
Noise reduction equipment for vessels, acoustic mounts	8A002.o.3.a
Noise cancellation systems for vessels, active.....	8A002.o.3.b
Noise reduction systems for vessels, active.....	8A002.o.3.b
Non-destructive inspection equipment	1B001.f
Non-destructive test inspection equipment, rocket motor	9B007
Non-fluorinated polymeric substances	1C008

Description	ECCN Citation
Non-fluorinated polymeric manufactures	1A003
Non-irritant smoke flares, canisters, grenades and charges	1A984
Non-linear optical materials.....	6C004.c
Non-planar absorbers	1C001.a Note 1.b
Non-tunable continuous wave (CW) lasers	6A005.a or 6A995.e
Non-tunable pulsed lasers	6A005.b or 6A995.d
Non-tunable solid state lasers	6A005a or b or 6A995.f
Nozzles, for producing pyrolitically derived materials.....	1B116
Nozzles, rocket motor (liquid)	9A106.b
Nuclear material handling and processing equipment	2A291
Nuclear materials, facilities, and equipment software	0D001
Nuclear plant commodities, parts and accessories.....	2A291.d
Nuclear reactor, eddy current test equipment	2A291.d
Nuclear reactor equipment.....	2A291
Nuclear reactor, simulators	2A291.b
Nuclear reactor, ultrasonic test equipment.....	2A291.d
Nuclear technology for the development, production or use of nuclear materials, facilities, and equipment	0E001
Nucleic acid assemblers and synthesizers (partly or entirely automated)	2B352.j
Numerical control for machine tools - software	2D002 and 2D003
Numerical control units for machine tools and numerically controlled machine tools, n.e.s.....	2B991
Numerically controlled machine tools that can be equipped with electronic devices for simultaneous contouring control.....	2B991.c
O-ring for ground vehicles.....	0A606.y.9
Object detection and location systems or transmitting and receiving arrays (acoustic).....	6A001.a.1.b
Ocean salvage systems.....	8A001.e
Off highway wheel tractors.....	9A990
Oil and gas exploration equipment, software, and data	0A998
Oil well cartridges.....	1C608.f or 1C992.g
Oil lines and tubes for military gas turbine engines	9A619.y.2
Oil tank and reservoirs for military gas turbine engines.....	9A619.y.1
Oil, lubricating, cutting, or quenching	1C980
Oils, distillate fuel.....	1C980
Omsk hemorrhagic fever virus.....	1C351.a.34
On-highway tractors.....	9A990
Operating systems for real time processing equipment, software	4D993.c
Operating system software for real time processing equipment.....	4D993.c
Optical absorption materials, low	6C994.a
Optical components, space-qualified	6A004.c

Description	ECCN Citation
Optical components for lasers.....	6A005.e
Optical components for lasers.....	6A004.b
Optical computers	4A004.c
Optical control equipment.....	6A004.d
Optical detectors, radiation hardened	6A102
Optical detectors & sensors	6A002
Optical element inspection or testing equipment and components.....	3B992.a
Optical element manufacturing equipment and components.....	3B991.a
Optical elements, aspheric	6A004.e
Optical equipment.....	6A005.f
Optical equipment.....	6B004
Optical equipment other than optical surface scattering measurement equipment.....	6B004.b
Optical fabrication technologies	6E003.d.2
Optical fabrication technologies	6E993.a
Optical fiber characterization equipment.....	5A991.b Note b.3
Optical fiber couplers or connectors for underwater use	8A002.c
Optical fiber & accessories, communications.....	5A001.c
Optical fiber preforms.....	6C994.b
Optical fiber preforms.....	5C991
Optical fibers/fiber cable, sensing.....	6A002.d.3
Optical fiber sensing elements, hydrophones	6A001.a.2.a.2
Optical filters	6A994.a
Optical filters technology.....	6E993.b
Optical finishing processes	2B002.d
Optical (Infrared) tracking (range) radars.....	6A108.b.2
Optical integrated circuits.....	3A001.a.6
Optical materials	6C994
Optical materials, with non-linear characteristics.....	6C004.b.3
Optical mirrors (reflectors)	6A004.a
Optical mirrors (reflectors)	6A005.e.2
Optical sensing fibers not controlled by 6A002	6C992
Optical Sensors	6A992
Optical sensor cryocoolers.....	6A002.d.1
Optical sensors - flight control systems - technology.....	7E004
Optical sensors, optical fiber.....	6A002.d.3
Optical sensor materials.....	6C002
Optical sighting devices for firearms.....	0A987
Optical sighting devices for firearms that have focal plane array or image intensifier tube, technology for	0E987
Optical surface coating/treatment technology	6E003.d.1
Optical switching equipment	5A991.c.10.c

Description	ECCN Citation
Optical switching equipment, technology for the development of equipment employing.....	5E001.c.3
Optical-electro shutters, Kerr or Pockel cells	6A203.b.3.c
Optics	6A994
Optics, (optical components)	6A004
Optics software	6D003.d
Optimization of rocket systems trajectory technology	7E104
Organic fibers & filamentary materials	1C010.a
Organic matrix	1A002.a
Organo-metallic compounds	3C003
Oropouche virus.....	1C351.a.35
Oscillators or oscillator assemblies.....	3A001.b.10
Oscilloscopes (high-speed)	3A002.a.7
Oscilloscopes (analog and digital)	3A992
Oxide matrix reinforced materials	1C007.c.1.a
Oxidizer or mixture, composed of fluorine and halogens, oxygen or nitrogen	1C608.m
Oxygen Iodine (O ₂ -I) laser.....	6A005.d.5.c.1
PABXs (Private Automatic Branch exchanges)	5A991.c
Packet switching equipment	5A991.c.10
Parachutes, military.....	9A610.h
Paraffin wax	1C980
Parametric technical databases	1E002.g
Particle accelerators	1B999.b
Particle flow detection microphone	6A005.g
Passenger seats for military aircraft.....	9A610.y.16
Particle measuring systems employing lasers.....	3B992.b.7
Parts for “600 series” or defense articles	3A611.y
Passive coherent location systems or equipment.....	5A001.g
Passive sensors, direction finding systems	7A115
Passive acoustic systems.....	6A001.a.1.d
Pathogens, genetically modified microorganisms	1C353.a
Pathogens, animal	1C351
Pathogens, human	1C351
Pathogens, plant	1C354
Pathogens, zoonotic	1C351
PBAA (Polybutadiene-acrylic acid)	1C111.b.3
PBAN (Polybutadiene-acrylic acid-acrylonitrile).....	1C111.b.4
PEEK (Polyether ether ketone).....	1C998
PEK (Polyether ketone)	1C998
PEKEKK (Polyether ketone ether ketone ketone).....	1C998
PEKK (Polyether ketone ketone).....	1C998

Description	ECCN Citation
1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8) (PFIB) ..	1C355.a.1.a, 1E355.a.1
Perfluoroaliphatic-ethers, monomeric or polymeric	1C006.d.1.a
Perfluoroalkanes	1C006.d.1.d
Perfluorocycloalkanes.....	1C006.d.1.c
Perfluoropolyalkylether-triazines, monomeric or polymeric.....	1C006.d.1.a
Performance improvement software, navigation systems	7D003.a
Performance improvement source code, navigation systems	7D003.b and 7D004
Peronosclerospora philippinensis (a.k.a. Peronosclerospora sacchari).....	1C354.b.7
Peste-des-petits ruminants virus	1C351.a.36
Petroleum products produced or derived from Naval Petroleum Reserves.....	1C982
PFIB (1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8)	1C355.a.1.a
Phase electro-optic modulator.....	3A001.i
Phased array antennae (in radar).....	6A008.e
Phased array antennae (in radar).....	5A001.d
Phased array antennae.....	5A991.f
Phenylcarbylamine chloride (CAS 622-44-6)	1C607.a.13
Phenylene, as lubricating fluids	1C006.b.1
Phoma glycinicola (formerly Pyrenochaeta glycinis)	1C354.b.12
Phosgene: Carbonyl dichloride (75-44-5).....	1C355.b.1.a, 1E355.b.1
Phosphate glass	6C004.e
Phosphor bronze or copper mesh packings.....	1A226
Phosphor image plates, storage.....	1A999.b
Phosphorus hydrides	3C004
Phosphorus oxychloride.....	1C350.c.4
Phosphorus pentachloride	1C350.c.5
Phosphorus pentasulphide.....	1C350.d.13
Phosphorus trichloride	1C350.c.6
Photo-enhanced CVD equipment	3B991.b.1.i
Photo-enhanced diffusion equipment	3B991.b.1.g
Photo-optical step and repeat cameras.....	3B991.b.2.d.1
Photocathodes	6A002.a.2.c
Photographic still cameras, underwater	8A001.e
Photographic still cameras, for underwater use.....	8A992.b
Photomultiplier tubes	6A202
Photovoltaic arrays, space qualified or radiation hardened	3A001.e.4
Physics-based simulation “software” specially designed for the “development” of lithographic, etching or deposition processes	3D003
Piezoelectric sensing elements, hydrophones	6A001.a.2.a.2.b
Pinacolone.....	1C350.d.14
Pinacolyl alcohol.....	1C350.b.20
Piping, austenitic stainless steel.....	2B999.n

Description	ECCN Citation
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
Planar absorbers	1C001.a Note 1, c or d
Plant pathogens, bacteria or fungi.....	1C354
PLAs (Programmable Logic Arrays).....	3A001.a.8
Plasma arc jet facilities	9B104
Plasma atomization & melting furnaces	2B227.b
Plasma-enhanced CVD (PECVD) equipment	3B991.b.1.i
Plasma enhanced or plasma assisted CVD production equipment	2B005.a.1.c
Plasma spraying production equipment, with controlled atmosphere	2B005.d
Plasma wind tunnels	9B104
Platforms, complete	9A992, 9A610.h
Platinized catalysts.....	1A225
Plugs, mechanical	3A611.y.30
Pocket cell electro-optical shuttering.....	6A203.b.3.c
Police helmets and shields	0A979
Polyarylene ketones	1C008.d
Polybiphenylenethersulphone	1C008.f
Polybromotifluoroethylene	1C006.c.3
Polybutadiene-acrylic acid (PBAA)	1C111.b.3
Polybutadiene-acrylic acid-acrylonitrile (PBAN).....	1C111.b.4
Polycarbosilazanes.....	1C007.e.3
Polychlorotrifluoroethylene	1C006.c.2
Polycrystalline alumina fibers	1C010.c Note 1
Polycrystalline or ceramic substrates.....	3C005.b
Polycrystalline silicon and materials production equipment	3B991.b.1.a
Polydiorganosilanes, precursor for silicon carbide.....	1C007.e.1
Polyether ketone ether ketone ketone (PEKEKK).....	1C998
Polyether ketone (PEK)	1C998
Polyether ether ketone (PEEK).....	1C998
Polyether ketone ketone (PEKK).....	1C998
Polyetherimides, fibrous & filamentary materials composed of	1C010.d.1.a
Polygraphs.....	3A981
Polymeric or metallo-organic materials.....	1C007.e
Polymeric substances	1C111.b
Polymeric substances, non-fluorinated.....	1C008

Description	ECCN Citation
Polymeric substances, non-fluorinated	1C998
Polysilazanes, precursor for silicon nitride	1C007.e.2
Polythiophene	1C001.c.3
Porcine enterovirus type 9 (swine vesicular disease virus)	1C351.a.51
Porcine Teschovirus (Teschén disease virus)	1C351.a.37
Porous nickel metal	1C240
Portable electric generator development or production software	2D994
Portable electric generators	2A994
Positioning equipment/components, global	7A005
Positioning equipment	7A105
Positioning systems, acoustic	6A001.a.1.d
Positioning tables or rate tables	2B120
Positioning tables or rate tables	2B121
Positive resists for semiconductor lithography	3C002.a.1
Post-flight data processing software	6D103
Potassium bifluoride	1C350.d.15
Potassium cyanide	1C350.d.16
Potassium fluoride	1C350.d.17
Potassium hydrogen fluoride (see potassium bifluoride)	1C350.d.15
Potassium titanyl arsenate (KTA)	6C004.b.1
Potato Andean latent tymovirus (Andean potato latent virus)	1C354.c.1
Potentiometers	3A611.y.7
Powassan virus	1C351.a.38
Powder metallurgy rotor component manufacturing equipment	9B009
Power generating equipment, nuclear reactor	0A002
Power supplies, direct current high power (dc)	3A226
Power supplies, direct current high-voltage	3A227
Power systems, air independent, for underwater use	8A002.j
Precision mandrels for filament winding machines	1B201
Precision rotor forming mandrels	2B209.b
Precision tracking systems, usable for missiles	6A108.b
Precursors for toxic chemical agents	1C350
Preform production equipment	1B101.d
Preforms, metal coated, for fiber prepreps in 9C110	9C110
Preforms production equipment	1B001
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

Description	ECCN Citation
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
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
Private automatic branch exchanges (PABXs).....	5A991.c
Probing (test) systems, semiconductor devices.....	3B002.d
Process control hardware/systems designed for power industries.....	1B999
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
Process control systems for use in nuclear material handling and processing equipment.....	2A291.a
Processing equipment for bay or bottom cable systems.....	6A001.a.2.e.3
Processors, digital array.....	3A001.a.3 Note
Processors, digital signal.....	3A001.a.3 Note
Processors, digital signal.....	4A003
Processors, digital array.....	4A003
Production facilities, reentry vehicles.....	9B116
Production equipment, propulsion systems & components.....	9B115, 9B619
Production equipment, reentry vehicles.....	9B115
Production facilities, rockets/propulsion systems.....	9B116
Profilometers.....	7B002.b
Program proof and validation software for real time processing equipment.....	4D993
Programmable gate & logic arrays (FPGA's & FPLA's), field.....	3A001.a.7

Description	ECCN Citation
Programmable & logic arrays (FPGA's & FPLA's), field	3A001.a.8
Programmable logic devices (PLD).....	3A611.f, y.14
Programming controls for filament winding machines	1B201
Projectile accelerators	2B232
Projection image transfer equipment	3B991.b.2.g
Projection telescopes, laser diagnostics	6A005.f.4
Projectors, acoustic	6A001.a.1.c
Proppant	0A998.b.2
Prolifometers, to characterize mirrors for laser gyro equipment	7B102.c
Propellant additives and agents.....	1C111.c
Propellants and constituent materials	1C111
Propellant (liquid) production equipment and components.....	1B115
Propellant (liquid) test and handling equipment and components.....	1B115
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
Propulsion systems, rocket.....	9A009
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
Pseudorabies virus (Aujeszky's disease; Suid herpesvirus 1)	1C351.a.51
Psychological stress analysis equipment	3A981
Public Address (PA) systems for military aircraft.....	9A610.y.18

Description	ECCN Citation
Public Address (PA) systems for submersible vessels	8A620.y.1
Public Address (PA) systems for surface vessels of war	8A609.y.1
Puccinia graminis ssp. graminis var. graminis / Puccinia graminis ssp. graminis var. stakmanii (Puccinia graminis [syn. Puccinia graminis f. sp. tritici]).....	1C354.b.4
Puccinia striiformis (syn. Puccinia glumarum).....	1C354.b.5
Pulsating Chemical Vapor Deposition production equipment.....	2B005.a.1.a
Pulse amplifiers.....	3A999.c
Pulse excited Q switched neodymium-doped lasers	6A205.f
Pulse generators, high-current for detonators	3A229
Pulse generators, high-speed	3A230
Pulse jet engines/components	9A111
Pulse radar cross-section measurement systems & components	6B008
Pulse shaping networks, high power.....	3A999.c
Pulsed electron accelerators.....	3A201.c
Pumpjet propulsion systems	8A002.p
Pumps, high pressure	0A998.b.3
Pumps, liquid propellant.....	9A106.d
Pumps, lithium amalgam	1B233.b.2
Pumps, mercury or lithium amalgam.....	1B233.b.2
Pumps, multiple-seal.....	2B350.i
Pumps, potassium amide in liquid ammonia	1B230
Pumps, seal-less	2B350.i
Pumps, vacuum.....	2B231
Pumps, vacuum.....	2B350.i
Pumps designed for industrial service	2B999.j
Pumps designed to move molten metals by electromagnetic force	2A993
Pyrolitic deposition nozzles	1B116
Pyrolitic deposition systems (“isostatic presses”, other than those controlled by 2B004).....	2B104
Pyrolitic deposition systems (chemical vapor deposition furnaces, other than those controlled by 2B005.a).....	2B105
Pyrolitic deposition systems, for rocket nozzles and reentry vehicle nose tips	2B117
Pyrolitically derived materials production technology	1E104
Pyrolized carbon-carbon components.....	1A102
Pyrolized carbon-carbon materials	1C102
Pyrolysis equipment, for rocket nozzles and reentry vehicle nose tips (“isostatic presses”, other than those controlled by 2B004)	2B104
Pyrolysis equipment, for rocket nozzles and reentry vehicle nose tips (chemical vapor deposition furnaces, other than those controlled by 2B005.a)	2B105
Pyrolysis equipment, for rocket nozzles and reentry vehicle nose tips (other than those controlled by 2B004, 2B005.a, 2B104, or 2B105).....	2B117

Description	ECCN Citation
Pyrolysis process control equipment, for “isostatic presses”, other than those controlled by 2B004	2B104
Pyrolysis process control equipment, for chemical vapor deposition furnaces, other than those controlled by 2B005.a.....	2B105
Pyrolysis process control equipment (other than those controlled by 2B004, 2B005.a, 2B104, or 2B105).....	2B117
Pyrotechnic articles, dual use.....	1A984
Pyrotechnic devices, commercial.....	1C608.j or 1C992.k
QRS11-00100-100/101 Micromachined Angular Rate Sensors.....	7A994
Q-switched lasers	6A005.a or b
Q-switched lasers	6A205.f
Quadrature-amplitude-modulation (QAM) based radio equipment operating above level 4.....	5A991.b.7.a
Quadrature-amplitude- modulation (QAM) based radio equipment operating above level 16	5A991.b.7.b
Quadrature-amplitude-modulation (QAM) based radio equipment	5A991.b.7
Quadrature-amplitude-modulation (QAM) based radio equipment, equipment for the development of.....	5B001.b.4.a
Quadrature-amplitude-modulation (QAM) based radio equipment, software for the development of.....	5D001.d.4.a
Quadrature-amplitude-modulation (QAM) based radio equipment, technology for the development of	5E001.c.4.a
Quantum cryptography	5A002.c
Quartz pressure sensors/transducers	6A226.b
3-Quinuclidinol.....	1C350.b.21
3-Quinuclidone	1C350.d.18
Rabies virus (and all other members of the Lyssavirus genus)	1C351.a.39
Radar cross section measurement systems, missile	6B108
Radar, high frequency (HF) surface wave	3A611.e
Radar systems & components.....	6A008
Radar altimeters	7A106
Radar software	6D003.h
Radar systems, employing signal processing.....	6A008.h
Radial ball bearings.....	2A101
Radiation detection, monitoring and measurement equipment.....	1A999.a
Radiation hardened detectors	6A002
Radiation hardened detectors.....	6A102
Radiation hardened designed (or rated) robots	2B007.c
Radiation hardened electronic computers	4A001.a.2
Radiation hardened integrated circuits.....	3A001.a.1, 9A515.d or 9A515.e
Radiation hardened sensors.....	6A002

Description	ECCN Citation
Radiation hardened TV cameras or lenses therefor	6A203.d
Radiation hardened TV cameras not specified in 6A203	6A999.b
Radiation transport calculations/modeling, software for	0D999.b
Radiation sensors, optical fibers	6A002.d.3
Radiation shielding windows	1A227
Radio frequency monitoring equipment	5A001.f.4
Radio frequency transmitting equipment.....	5A001.h.1
Radio equipment	5A001.b.2, 3 or 4
Radio equipment	5A991.b.6 or 7
Radio relay communications equipment.....	5A991.h
Radio, shortwave technology.....	5E001.c.4.c
Radio systems development/production technology	5E001.b.3
Radiographic detection equipment	1A999.b
Radiographic equipment	3A101.b
Radionuclides, alpha-emitting	1C236
Radionuclides, alpha-emitting, n.e.s.	1C999.g
Radium-226, compounds, mixtures, products or devices	1C237
Radome design software	6D003.h.2
Radomes usable in protecting missiles against nuclear effects	6A103
Rafts (life) for military aircraft	9A610.y.12
Ralstonia solanacearum, race 3, biovar 2.....	1C354.a.5
Raman shift lasers	6A205.e
Ramjet engines/components	9A011
Range gated illumination systems, underwater	8A002.d.2
Range instrumentation radars	6A108.b.2
Rankine cycle engine, air independent	8A002.j.1
Rate tables and positioning tables.....	2B121
Rate tables, positioning tables, and motion simulators.....	2B120
Rathayibacter toxicus.....	1C354.a.6
Reaction vessels (chemical), reactors and prefabricated repair assemblies therefor	2B350.a
Read-out integrated circuits (ROICs)	6A002.f
Real time processing	2D002.b
Real time processing operating systems	4D993.c
Real time processing equipment operating system software	4D993.c
Real time processing proof and validation software.....	4D993
Rebreathing apparatus specially designed for military use.....	8A620.f
Receivers, microwave test	3A002.f
Receivers, radio.....	5A001.b.2, 3 or 4
Reciprocating diesel engine & component technology	9E003.e.1
Reconstructed 1918 influenza virus (includes reconstructed replication competent forms of the 1918 pandemic influenza virus containing any portion of the coding	

Description	ECCN Citation
regions of all eight gene segments)	1C351.a.40
Recording equipment, analog & digital tape recorders	3A002.a
Recovery of source code - software.....	5D001.c.2
Red dot sights.....	0A987
Red dot sights that have focal plane array or image intensifier tube, technology for.....	0E987
Reduced observables analysis software	1D103
Reentry vehicles & equipment.....	9A116
Reentry vehicles/components, production equipment	9B115
Reflectance measuring equipment, absolute.....	6B004
Reflectivity (electromagnetic) reducing materials.....	1C101
Reflectometers, mirror characterization.....	7B102.b
Reflectors (mirrors), optical.....	6A004.a.1
Reflex sights.....	0A987
Reflex sights that have focal plane array or image intensifier tube, technology for	0E987
Refrigeration units, hydrogen or helium.....	1B231.b.1
Reinforced composite materials.....	1C007.c.1.a
Reinforcement fiber, production equipment	1B001.d
Release mechanisms, electronic.....	9A992, 9A610.h
Remote manipulators	2B225
Remotely operated vehicles	1A006.a
Remotely operated filling equipment, chemical	2B350.f
Remotely piloted vehicles (RPVs), non-military	9A012
Remotely controlled manipulators, for submersibles	8A002.i
Repeater/regenerator equipment	5A991.b Note a.4 or 5
Resaturated pyrolyzed components	1A102
Resaturated pyrolyzed materials.....	1C102
Resin impregnated fiber prepregs for 9A110 items.....	9C110
Resin impregnated fibers	1C010.e
Resin (thermoset) impregnated continuous materials.....	1C210.c
Resin impregnated fiber prepregs, propulsion & space systems	9A110
Resist materials, semiconductor lithography	3C002
Resists (positive), semiconductor lithography.....	3C992
Resist material, coated (semiconductor) substrates	3C002
Resistors, fixed.....	3A611.y.23
Restraint devices (electronic monitoring).....	3A981
Restraint devices, law enforcement, including leg irons, shackles, and handcuffs; straight jackets, stun cuffs; shock belts; shock sleeves, multipoint restraint devices, restraint chairs	0A982
Reticles, integrated circuits of 3A001.....	3B001.g
Reticles and designs.....	3B991.b.2
Reticle sights.....	0A987

Description	ECCN Citation
Reticle sights that have focal plane array or image intensifier tube, technology for.....	0E987
Rhenium and alloys containing rhenium	1C241
Rheostats	3A611.y.8
Ricin	1C351.d.11
Rickettsia prowazekii.....	1C351.c.17
Rift Valley fever virus	1C351.a.41
Rinderpest virus	1C351.a.42
Ring laser gyro mirror characterizing equipment	7B002
Ring Magnets	0A999
Riot control agents and tear gases.....	1C607.a
Robot end-effectors.....	2B207
Robot end-effectors.....	2B007
Robot controllers for high explosive handling.....	2B207
Robot controllers.....	2B007
Robots not controlled by 2B007 or 2B207	2B997
Robots, specially designed to operate at high altitudes	2B007.d
Robots, explosive/munitions environment handling.....	2B007.b
Robots, radiation hardened	2B007.c
Robots with real time 3D image processing or scene analysis	2B207
Robots specially designed for underwater use.....	8A002.h
Rocio virus	1C351.a.43
Rocket fuels	1C111
Rocket/rocket motor, test benches/stands	9B117
Rocket engines, solid propellant	9A107
Rocket motors, hybrid	9A109
Rocket nozzles	9A106.b
Rocket stages, other than those of 9A005/7/9, 9A105/107/109	9A119
Rocket motor inspection equipment	9B007
Rockets, sounding	9A104
Roller bearings, solid	2A001.a
Rollers for prepregs/preform production	1B101.d
Rotary position feedback units.....	2B006.c
Rotor assembly mandrels, bellows forming.....	2B228.a
Rotor centrifugal balancing machines	2B229
Rotor components, tooling for manufacture	9B009
Rotor fabrication/assembly equipment	2B228.a
Rotor forming mandrels, precision	2B209.b
Rotor straightening equipment or systems.....	2B228.b
Routers, telecommunications	5A991.c.10
Ruby lasers.....	6A995.c
Russian Spring-Summer encephalitis virus (Tick-borne encephalitis virus).....	1C351.a.52

Description	ECCN Citation
S-parameter test/measurement equipment	3B002.a
S20 and S25 photocathodes	6A002
Sabia virus.....	1C351.a.44
Safety cabinets, capable of biological use	2B352.f.2
Saint Louis (St. Louis) encephalitis virus.....	1C351.a.49
Salmonella enterica subspecies enterica serovar Typhi (Salmonella typhi).....	1C351.c.18
Salvage systems, ocean.....	8A001.e
Saps.....	0A978
SARS-related coronavirus (SARS-CoV).....	1C351.a.46
Satellite communication equipment technology.....	5E001.b.1
Satellite receivers	7A005
Satellite receivers, other than those of 7A005	7A105
Satellites, commercial communications.....	9A004, 9A515
SAW (Surface Acoustic Wave) devices	3A001.c.1
Saxitoxin	1C351.d.12
Scanning cameras & systems.....	6A003.b.2
Scatterometers.....	7B002.a
Scatterometers, to characterize mirrors for laser gyro equipment	7B102.a
Sclerophthora rayssiae var. zae	1C354.b.8
Scramjet engines/components.....	9A011
Scuba gear.....	8A992.h
SDH (Synchronous Digital Hierarchy) technology	5E001.b.4
SDH (Synchronous Digital Hierachy) technology	5E991.a.2
Sealers (semi-automatic or automatic hot cap) for ceramic microcircuit packages	3B991.b.3.c
Seal-less pumps.....	2B350.i
Seals, aircraft/aerospace use	1A001.a, 9A610.x
Search lights.....	0A617.y.5
Seats, seat assemblies, seat supports, and harnesses – for ground vehicles.....	0A606.y.14
Security equipment, information	5A002
Security equipment, information, software.....	5D002
Security imaging equipment	2A984, 2D984 or 2E984
Security scanning equipment	2A984, 2D984 or 2E984
Segmented mirrors, assembly in space	6A004.c.3
Seismic detection equipment	6A999.a
Semiconductor, test equipment.....	3B002
Semiconductor compound photocathodes	6A002.a.2.c.3
Semiconductor components, extended temperature range.....	3A001.a.2
Semiconductor component design software, computer-aided-design	3D003
Semiconductor device discrete testing equipment.....	3B992.b.4.a
Semiconductor device inspection or testing equipment and systems	3B992.b

Description	ECCN Citation
Semiconductor device or material manufacturing equipment	3B001
Semiconductor devices manufacturing equipment and systems.....	3B991.b
Semiconductor lasers	6A005.d.1
Semiconductor materials purifying or processing equipment	3B991.b.1.b
Semiconductor probing systems, electron & laser beam	3B002.d
Sensing devices (electronic)	6A002.a.2.a.2.b
Sensing elements, hydrophone	6A001.a.2.a
Sensing fibers, optical (not controlled by 6A002)	6C992
Sensor materials, optical	6C002
Sensors, direction finding systems (passive)	7A115
Sensors, industrial infrared	6A002.a
Sensors, linear position feedback unit	2B006.b.2
Sensors, Micromachined Angular Rate	7A994
Sensors, multispectral imaging	6A002.b
Sensors, optical	6A992
Sensors, optical	6A002
Sensors, pressure (manganin & quartz)	6A226
Sensors, radiation hardened	6A102
Sensors, superconductive electromagnetic	6A996
Seoul virus	1C351.a.45
Separation mechanisms for missiles	9A117
Separators, centrifugal (biological).....	2B352.c
Separators, electromagnetic isotope.....	1B226
Servo valves, gel propellant control systems.....	9A106.d
Severe acute respiratory syndrome-related coronavirus (SARS-related coronavirus) ...	1C351.a.46
Shackles	0A982
Shaft encoders (rotary input type), and rings, discs or scales therefor	3A001.f
Shaving machines, gear	2B003
Sheeppox virus (Sheep pox virus)	1C351.a.47
Shields, police	0A979
Shiga toxins (shiga-like toxins, verotoxins, and verocytotoxins)	1C351.d.13
Shiga toxin producing Escherichia coli (STEC) of serogroups O26, O45, O103, O104, O111,O121, O145, O157, and other shiga toxin producing serogroups	1C351.c.19
Shigella dysenteriae	1C351.c.20
Ship vessel positioning systems, acoustic.....	6A001.a.1.d
Shims for gas turbine engines	9A619.y.6
Shock batons	0A985
Shock belts	0A982
Shock shields	0A985
Shock sleeves	0A982
Shock tubes	1C608.b or 1C992.c

Description	ECCN Citation
Shoes, protective.....	1A004 or 1A995
Shortwave radio technology	5E001.c.4.c
Shotgun shells	0A986
Shotgun shell manufacturing equipment	0B986
Shotgun shells, buckshot.....	0A984
and shotgun shells, technology for the development or production of	0E984
Shotguns, barrel length 18 inches or over.....	0A984
Shotgun trigger mechanisms, barrels, magazines, magazine extension tubes, receivers.....	0A984
Shrink fit machines for rotor fabrication/assembly	2B228.a
Side Scan Sonar & Synthetic Aperture Sonar (SAS) designed for seabed imaging...	6A001.a.1.a.3
Sidelooking airborne radar (SLAR).....	6A008.d
Sights and sighting devices for firearms.....	0A987
Sights and sighting devices for firearms that have focal plane array or image intensifier tube, technology for.....	0E987
Signal processor microcircuits.....	3A001.a.3 Note
Signal generators, frequency synthesizer based.....	3A002.d
Signal analyzers	3A002.c
Signal processing devices, acousto-optic.....	3A001.c.3
Signal processing equipment, sonar.....	6A001.a.1.d
Signal processing equipment	4A994.f
Signal processing equipment, general purpose digital.....	4A003
Signal processing equipment, hydrophone arrays	6A001.a.2.c
Signal (information bearing) reducing systems, equipment and components	5A003.b
Signal tracking development/use technology, laser.....	5E001.b.2
Signature suppression devices, treatments & fittings	1C001
Signature (electromagnetic) reduction devices.....	1C001
Signature (electromagnetic) reduction devices.....	1A101
Signature suppression devices, treatments & fittings	1A101
Silicon carbide (SiC) substrate blanks	6C004.d
Silicon, hetero-epitaxial grown multi-layer substrates	3C001.a
Silicon microcircuits	3A001.a
Silicon carbide wafers or semiconductor substrates, ingots, boules or preforms	3C005.a
Silicon-on-sapphire integrated circuits	3A001.a Note 2
Silicone fluid, fluorinated	1C006.b.2
Silver gallium selenide (AgGaSe ₂).....	6C004.b.2
Silylated resists for semiconductor lithography.....	3C002.d
Simulators for nuclear reactors	2A291.b
Simultaneous initiation arrangements or systems, single & multipoint	3A232.b
Single crystal casting control software	9D004.c
Single crystal casting equipment	9B001.a, 9B619

Description	ECCN Citation
Single crystals	6C002.b
Single mode optical fiber & cable	5A991
Single point diamond turning techniques, technology.....	6E003.d.2
Single-element & focal plane arrays, space-qualified	6A002.e
Sin Nombre virus	1C351.a.48
Skin friction transducers, wall	9B008
Slapper detonators (Electric).....	1A007 or 3A232.a.3
Slurries and emulsions, commercial prefabricated	1C608.h
Slurry propellant control systems	9A106.d
Smoke bombs.....	1A984
Smoke detector for military aircraft.....	9A610.y.27
Sodium azide.....	1C992.1
Sodium bifluoride	1C350.d.19
Sodium cyanide.....	1C350.d.20
Sodium fluoride	1C350.d.21
Sodium (Na) metal vapor lasers.....	6A005.b
Sodium sulphide.....	1C350.d.23
<i>Software, see product group D for controls in each category</i>	
Software, adaptive control	2D002.b.2
Software, adaptive control	2D992.a
Software, dedicated, for toxic gas monitoring systems and their dedicated detecting components controlled by 2B351	2D351
Software, electronic devices	2D002
Software, for coordinating function of multiple subsystems for use in missiles	9D105
Software, for potable electric generator development or production	2D994
Software for Nuclear materials, facilities and equipment.....	0D001
Software, numerical control.....	2D002 and 2D003
Software, real time processing in machine tools	2D002.b
Software, real time processing equipment operating systems	4D993.c
Software, recovery of source code.....	5D001.c.2
“Software” specially designed or modified for the “development”, “production” or “use” of items controlled by 2A290 or 2A291	2D290
“Software” specially designed or modified for the “development”, “production” or “use” of equipment controlled by 2A983	2D983
“Software” specially designed or modified for the “development”, “production” or “use” of equipment controlled by 2B991, 2B993, or 2B996, 2B997, and 2B998.....	2D991
“Software” specially designed or modified for the “development”, “production” or “use” of items controlled by 2A992 or 2A993	2D993
“Software” “specially designed” for ground vehicles and related commodities controlled by 0A606, 0B606, or 0C606	0D606

Description	ECCN Citation
“Software” “specially designed” for commodities controlled by 0A617, “equipment” controlled by 0B617, or materials controlled by 0C617	0D617
“Software” specially designed for the “development” of the equipment controlled by 3A003.....	3D004
“Software” “specially designed” for the “development,” “production,” operation, failure analysis or anomaly resolution of commodities controlled by 9A515.d.....	9D515.d
“Software” “specially designed” for the “development,” “production,” operation, failure analysis or anomaly resolution of commodities controlled by 9A515.e	9E515.e
Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels, and solar arrays (space qualified)	3A001.e.4 or 3A991
Solenoids.....	3A611.y.10
Solenoids, superconductive.....	3A001.e.3
Solenoids, superconductive	3A201.b
Solid propellant rocket engines.....	9A107
Solid rocket propulsion systems	9A007
Solid rocket propulsion system, components.....	9A008
Solid rocket propulsion system, components.....	9A108
Solid state cameras.....	6A003.b.1
Solid state joining equipment, tools/dies/fixtures	9B004
Solid state imaging devices.....	6A203.b.3
Solid-state imaging devices	6A002
Solid-state pulsed power switching thyristor devices and thyristor modules	3A001.g
Solid state lasers, tunable.....	6A005.c
Solid state microwave amplifiers.....	3A001.b.4
Solid-state power semiconductor switches, diodes, or 'modules'	3A001.h
Sonar, active individual	6A001.a.1.e
Sonar processing equipment	6A001.a.2.b
Sonar log equipment	6A001.b
Sonar, Side Scan Sonar (SSS) designed for seabed imaging.....	6A001.a.1.a.3
Sonar, Synthetic Aperture Sonar (SAS) designed for seabed imaging.....	6A001.a.1.a.3
Sonar, underwater navigation system	7A008
Sonar signal processing equipment.....	6A001.a.1.d Note a
SONET (Synchronous Optical Network) technology.....	5E001.b.4
SONET (Synchronous Optical Network) technology.....	5E991.a.2
Sounding rocket use software	9D101
Sounding rockets.....	9A104
Source code automatic generation software	4D993.b
Source code, development of avionic goods as specified.....	7D004
Source code recovery software	5D001.c.2
Spacecraft.....	9A515
Spacecraft buses.....	9A515

Description	ECCN Citation
Spacecraft on-board systems.....	9A515
Spacecraft payloads	9A515
Space probes	9A515
Space qualified focal plane arrays	6A002. a.1.d
Space qualified or radiation hardened photovoltaic arrays.....	3A001.e.1.c
Space-qualified solid state detectors.....	6A002.a.1
Space-qualified optical components	6A004.c
Spacecraft and related commodities	9A004 or 9A515
Spacecraft components	9A515 or 9A010
Spacecraft inertial navigation equipment/components	7A003
Spark-gaps, triggered	3A228.b
Speakers	3A611.y.11
Spectrometry analytical instruments.....	3A999.f
Spherical or spheroidal aluminum powder	1C111.a.1
Spiked batons.....	0A983
Spin forming machines	2B009
Spin forming machines	2B209
Spin forming machines	2B999I
Spin forming machines capable of flow-forming functions	2B209
Spin forming machines combining spin-forming and flow-forming function.....	2B009
Spindle assemblies.....	2B998.a
Spindle assemblies, machine tools.....	2B008.d
Spray booms or arrays of aerosol generating units, specially designed for fitting to aircraft, lighter than air vehicles,” or “UAVs”	2B352.i.2
Spray cooling thermal management systems.....	3A003
Spray-drying equipment capable of drying toxins or pathogenic microorganisms	2B352.f
Spraying or fogging systems, specially designed for fitting to aircraft, “lighter than air vehicles,” or “UAVs”	2B352.i.1
Spraying production equipment, plasma with controlled atmosphere.....	2B005.d
Spread spectrum development technology techniques	5E001.b.4
Spread spectrum radio equipment.....	5A001.b.3
Spread spectrum spreading code generation.....	5A002.e
Sprytron tubes, vacuum	3A228.a
Sputter deposition production equipment	2B005.e
Sputtering equipment, magnetically enhanced	3B991.b.1.f
SQUIDs (Superconducting quantum interference devices).....	6A006.a.1
St. Louis encephalitis virus	1C351.a.49
Staging mechanisms for missiles	9A117
Stainless steel plate	1C999.b
Staphylococcus aureus enterotoxins, hemolysin alpha toxin, and toxic shock syndrome toxin (formerly known as Staphylococcus enterotoxin F).....	1C351.d.14

Description	ECCN Citation
'Star trackers' and components therefor	7A004
Statistical multiplex equipment.....	5A991.b Note a.7
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 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.....	0A985
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

Description	ECCN Citation
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
Suid herpesvirus 1 (Aujeszky's disease; Pseudorabies virus).....	1C351.a.50
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

Description	ECCN Citation
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.51
Switch fabric development/production technology	5A991.c.10
Switches, filtered and unfiltered mechanical	3A611.y.21
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

Description	ECCN Citation
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
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

Description	ECCN Citation
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
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

Description	ECCN Citation
TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4, 10- diazaisowurtzitane)	Annex to Cat 1 List of Explosives 45
Thallium arsenic selenide (Tl ₃ AsSe ₃ 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
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.52
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 ₂ O ₃) lasers	6A005.c.1, c.2 or c.3

Description	ECCN Citation
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
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

Description	ECCN Citation
Triethanolamine	1C350.c.10
Triethanolamine hydrochloride.....	1C350.d.24
Triethyl phosphite	1C350.c.11
Triethylene glycol dinitrate (TEGDN).....	1C111.c.2
Triggered spark-gaps	3A228.b
Triggers, high voltage	3A999.c
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
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

Description	ECCN Citation
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
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 vehicle operation software	8D999
Unmanned tethered submersible vehicles.....	8A001.c
Unmanned untethered submersible vehicles.....	8A001.d
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

Description	ECCN Citation
Vacuum pumps	2B231
Vacuum pumps	2B350.i
Vacuum pumps, bellows-sealed scroll-type	2B233
Vacuum tubes, electronic microwave	3A001.b.1
Vacuum sprytron 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.53
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.54
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.55
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

Description	ECCN Citation
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
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

Description	ECCN Citation
Welders, MIG	2B999.d
Welders, E-beam.....	2B999.e
Welding machines, laser	2B999.c
Western equine encephalitis virus	1C351.a.56
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
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.57
Yersinia pestis.....	1C351.c.22
Yttrium oxide (yttria) (Y ₂ O ₃), 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 ₄) glass	6C004.e
Zirconium metal particulate.....	1C111.a.2.a.1
Zirconium metal, alloy, compounds, or manufacturers	1C234

Description	ECCN Citation
Zirconium oxide (zirconia) (ZrO ₂) 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.