

ALPHABETICAL INDEX TO THE COMMERCE CONTROL LIST

This index is not an exhaustive list of controlled items.

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

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Computers, digital	4A003
Computers, digital	4A004
Computers, digital	4A001
Computers, hybrid	4A102
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

Description	ECCN Citation
Congo-Crimean haemorrhagic fever virus (a.k.a. Crimean-Congo haemorrhagic fever virus)	1C351.a.5
Conotoxin	1C351.d.6
Construction equipment “specially designed” for military use	0A617.y.1
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
Continuous mixers	1B118
Contrarotating propellers	8A002.o.1.b
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 fluid (fluorocarbon electronic) development, production, or use technology.....	1E994
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
Coprocessors or accelerators, graphics	4A003.d
Correlation-velocity sonar log equipment	6A001.b
Counter-current solvent extractors.....	0B006.c
Counter Improvised Explosive Device equipment	5A001.h
Coxiella burnetii.....	1C351.c.13
Crime science laboratories, parts and accessories, nonmilitary mobile.....	9A980
Crimean-Congo haemorrhagic fever virus (a.k.a. Congo-Crimean haemorrhagic fever virus)	1C351.a.5
Critically safe tanks, nuclear fuel reprocessing	0B006.b
Cross-flow filtration equipment.....	2B352.d
Crossed-field amplifier tubes	3A001.b.1.b
Crucibles, liquid actinide resistant.....	2A225

Description	ECCN Citation
Crucibles, tantalum	2A225.b or c
Crude petroleum or shale oil.....	1C981
Cryocoolers for optical sensors, space qualified.....	6A002.d.1
Cryocoolers for optical sensors, non-space qualified	6A002.d.2
Cryptanalytic equipment or devices, digital	5A002.a.2
Cryptoanalytic equipment and components, n.e.s.	5A992
“Cryptographic activation” equipment	5A002.j
Cryptographic enabling systems, equipment, integrated circuits, etc.....	5A002.b
Cryptographic enabling software	5D002.d
Cryptographic enabling technology	5E002.b
Cryptographic equipment and components, n.e.s.	5A992
Cryptography equipment or devices, digital	5A002.a.1
Cryptography equipment or devices, analog	5A002.a.3
Cryptologic equipment, software for the development, production or use of	5D992
Cryptologic equipment and components, n.e.s.	5A992
Cryptologic equipment, technology for the development, production or use of	5E992
Crystal pullers and furnaces.....	3B991.b.1.c
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
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
Deep-hole drilling machines	2B001.f

Description	ECCN Citation
Defect, error or contaminant detection equipment for wafers or substrates	3B992.b.1
Deformable mirrors.....	6A004.a.1
Degassing equipment	2B350
DEGDN (diethylene glycol dinitrate).....	1C111.c.5
Demolition blocks.....	0A604.a
Dengue fever virus	1C351.a.6
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, 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.4
Diacetoxyscirpenol toxin	1C351.d.7
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
Diaphragms, made from fluoroelastomers.....	1A001.c
Diaphragm valves	2B350.g
Dibromotetrafluoroethane based damping or flotation fluids.....	1C006.c.1
Die bonder, stored program controlled	3B991.b.3.a
Diesel engines for submarines	8A620.d
Diesel engines, nonmagnetic	8A609.b
Diesel engines (air-cooled) and engine blocks for armored vehicles.....	0A606.c

Description	ECCN Citation
Dies, bellows-forming.....	2B228.c
Diesel engines, n.e.s.....	9A990
Diesel cycle engine, air independent	8A002.j
Diethyl ethylphosphonate	1C350.b.3
Diethyl methylphosphonite.....	1C350.b.4
Diethyl phosphite.....	1C350.c.1
Diethyl-N, N-dimethylphosphoramidate	1C350.b.5
Diethylaminoethanol.....	1C350.d.3
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.....	3A002a.5
Dimensional inspection or measuring systems or equipment not controlled by 2B006.....	2B996
Dimensional inspection machines.....	2B206
Dimensional inspection equipment/systems.....	2B006.a
Dimensional inspection equipment/systems.....	2B006.c

Description	ECCN Citation
Dimensional measuring equipment, instruments/systems	2B006.b
Dimethyl ethylphosphonate	1C350.b.10
Dimethyl methylphosphonate	1C350.b.11
Dimethyl phosphite	1C350.c.2
Dimethylamine.....	1C350.d.5
Dimethylamine hydrochloride	1C350.d.6
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
Disk drive (magnetic hard) development or production technology	4E993.c
Display, 3D (software for)	7D004.g
Disruptors.....	1A006.b
Dissolvers, for nuclear fuel	0B006.b
Distillation columns	2B350.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.7
Doppler laser interferometers (DLIs).....	6A225
Double seal valves	2B350.g
Drilling equipment	2B999.h
Drilling machines, deep-hole	2B001.f
Drone (military) production facilities	9B610.c
Dry etching equipment, anisotropic plasma.....	3B001.c

Description	ECCN Citation
Dye lasers.....	6A005.c
Dye lasers.....	6A205
Dynamic adaptive routing equipment.....	5A991.c.9
Dynamic wavefront (phase) measuring equipment.....	6A005.f.1
Dynamic adaptive routing software.....	5D991.a
E-beam welders.....	2B999.e
Earth moving equipment, large.....	2B999.h.2
Eastern equine encephalitis virus.....	1C351.a.8
EB-PVD (Electron beam physical vapor deposition) equipment.....	2B005.c
Ebola virus.....	1C351.a.9
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 propulsion engines.....	8A002o.2.b
Electrical discharge machines, non wire feed (CNC).....	2B001.d
Electrical discharge machines (EDM) of the wire feed type.....	2B991.d.2
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
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

Description	ECCN Citation
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 cyclotron resonance (ECR) plasma dry etching equipment	3B001.c.1.b
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.1.c	2B006.b.1.d
Electronic cameras	6A003.a.5
Electric chairs.....	0A981
Electronic components.....	3A001
Electronic components.....	3A201
Electronic components.....	3A101
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
Electronically steerable antennae, phased array	5A001.d
Electroplating equipment	2B999.i
EMP/EMI protection technology, avionic systems	7E102
Encoders, rotary input shaft type	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

Description	ECCN Citation
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.b, or 9B610.b
Environmental chambers, capable of simulating flight conditions.....	9B106.a, 9B610.b
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.12
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
0-ethyl-2-diisopropylaminoethyl methylphosphonite (QL).....	1C350.a.1
Ethyl centralites	1C018.a
Ethyl phenyl urethane	1C018.e
Ethyl phosphinyl dichloride.....	1C350.b.12
Ethyl phosphinyl difluoride	1C350.b.13
Ethyl phosphonous dichloride.....	1C350.b.12
Ethyl phosphonous difluoride.....	1C350.b.13
Ethyl phosphonyl dichloride.....	1C350.b.14
Ethyl phosphonyl difluoride	1C350.a.2
Ethyl-NN-diphenylurea (ethyl unsymmetrical diphenylurea)	1C018.d
Ethyldiethanolamine (139-87-7).....	1C355.b.2.a
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.....	1A008 or 1C992.1
Explosives (military) production equipment	1B018.a

Description	ECCN Citation
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
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 optic cable	5A001.c
Fiber optic gyro coil winding machines	7B003
Fiber optic magnetometers	6A006.c
Fiber optic hull penetrators/connectors	8A002.c
Fiber optic wave division multiplex equipment	5A991.b.5
Fiber preforms, metal coated, for fiber prepregs in 9C110	9C110
Fiber prepregs, resin impregnated, for items in 9A110	9C110
Fiber 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
Field programmable logic arrays (FPLA)	3A001.a.7
Field programmable logic devices	3A001.a.7
Field programmable logic devices	3A991.c
Filament winding machines	1B001.a
Filament winding machines	1B101.a
Filament winding machines	1B201
Filling equipment, remotely controlled	2B350.f
Film type integrated circuits	3A001.a Note 2
Filter canisters	1A004 or 1A995
Filters, tunable band-pass	3A001.b.5

Description	ECCN Citation
Filters for clean rooms	3B991.b.4
Filters (fuel or oil) for gas turbine engines	9A619.y.4
Filters (hydraulic, fuel, oil, air) for ground vehicles	0A606.y.8
Filters, optical	6A994.a
Filters for hydraulic/oil/fuel systems in military aircraft	9A610.y.8
Filters for pneumatic/hydraulic/oil/fuel systems in submersible vessels	8A620.y.2
Filters for pneumatic/hydraulic/oil/fuel systems in surface vessels of war	8A609.y.2
Finger cuffs	0A983
Fingerprint analyzers, cameras and equipment	3A981
Fingerprint equipment, computers for	4A980
Fingerprinting powders, dyes, inks	1A985
Fingers, for surface effect vessels	8A002.k
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
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 missiles	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
Flow-forming machines	2B009
Flow-forming machines	2B109
Flow-forming machines	2B209
Flow-forming machines	2B999i

Description	ECCN Citation
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 fluid development, production, or use technology	1E994
Fluorocarbon electronic cooling fluids	1C006.d
Fluorophosphate glass.....	6C004.e
Fluorocarbon electronic cooling fluids	1C006.d
Fluxgate magnetometer technology	6E003.f
Fly cutting machines	2B001.b.4 or 2B992.b
Fly-by-light flight control system software	7D003.e, 7D004.c, 0D521 No. 2
Fly-by-light technology	7E004.b
Fly-by-wire flight control system software.....	7D003.e, 7D004.c, 0D521 No. 2
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 and 0E521 No. 6
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 & mouth disease virus	1C352.a.4
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

Description	ECCN Citation
Free electron laser photo injector manufacturing or inspection equipment.....	6B995.a.2
Freeze drying equipment, steam sterilizable.....	2B352.e
Freon and chilled water cooling systems.....	1B999.d
Frequency agile (frequency hopping) radio equipment.....	5A001.b.3
Frequency agile systems.....	5A002.a.5
Frequency agile tubes.....	3A001.b.1
Frequency hopping development technology.....	5E001.b.4
Frequency analyzers (signal analyzers).....	3A002.c
Frequency changers.....	3A999.a
Frequency changers (converters or inverters).....	3A225
Frequency changers (a.k.a. converters or inverters) and generators, “software” “specially designed” for the “use” of.....	3D201
Frequency changers (a.k.a. converters or inverters) and generators, “software” “specially designed” to enhance or release the performance characteristics of equipment to meet or exceed the performance characteristics in ECCN 3A225.....	3D202
Frequency extenders, mixers/converters.....	3A001.b.7
Frequency network analyzers.....	3A002.e
Frequency standards, atomic.....	3A002.g
Frequency synthesized signal generators.....	3A002.d
Frequency synthesizer, electronic assemblies.....	3A001.b.11
Fuel oils.....	1C980
Fuel elements, (irradiated) reprocessing plant & equipment.....	0B006
Fuel element chopping or shredding machines.....	0B006.a
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

Description	ECCN Citation
Gallium nitride (GaN) “substrates”, ingots, boules, or other preforms of those materials.....	3C005
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 turbine aeroengines, civil non-certified/supersonic.....	9A001
Gas turbine blade, manufacturing or measuring equipment	9B001, 9B619
Gas turbine blade technology.....	9E003.a, 9E619
Gas turbine blades, vanes or tip shroud casting equipment, tooling or fixtures	9B991, 9B619
Gas turbine brush seal production/test equipment.....	9B003, 9B619
Gas turbine components, solid state joining equipment	9B004, 9B619
Gas turbine engine development systems/instrumentation.....	9B002, 9B619
Gas turbine engine development control systems or instrumentation	9B002, 9B619
Gas turbine engine propulsion systems assemblies/components.....	9A003, 9A619
Gas turbine engine technology.....	9E003, 9E619
Gas turbine engine development and use software.....	9D004, 9D619
Gas turbine engine monitoring system software.....	9D619.b.11
Gas turbine engines, parts and components, not controlled by 9A001 or 9A101	9A991, 9A619
Gas turbine engines & assemblies/components, marine.....	9A002
Gas turbine test/flow modeling software	9D004.a, 9D619
Gas turbine (aero engine) test software	9D004.b, 9D619
Gaskets, made from fluoroelastomers.....	1A001.c
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 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

Description	ECCN Citation
Gearmaking and/or finishing machinery not controlled by 2B003	2B993
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.f
Glass preforms, for optical fiber production.....	5C991
Glass Windows, nuclear radiation shielding.....	1A227
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
Goat pox virus.....	1C352.a.5
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
Graphics accelerators or graphics coprocessors	4A003.d
Graphics accelerator development or production technology	4E993.a
Graphite, fine grain recrystallized bulk	1C107.a
Graphite, bulk	1C107.a
Graphite, pyrolytic or fibrous reinforced.....	1C107.b
Graphite, nuclear-grade, not intended for use in a nuclear reactor.....	1C298
Gravimeters (Gravity meters) & components, gravity	6A007.a
Gravimeters (Gravity meters) & components, gravity	6A007.b
Gravimeters (Gravity meters) & components, gravity	6A107
Gravity meter (gravimeters) products & calibration equipment.....	6B007

Description	ECCN Citation
Gravity meters.....	6A997
Gravity gradiometers & components	6A007.c
Gravity meters (gravimeters) & components.....	6A007.b
Gravity meters (gravimeters) & components.....	6A007.a
Gravity meters (gravimeters) software	6D003.g
Gravity gradiometers & components	6A107
Gravity meters (gravimeters) & components.....	6A107
Gravity gradiometer software	6D003.g
Greases	1C980
Grenades, non-irritant smoke.....	1A984
Grinding machines (CNC)	2B991.d.1
Grinding machines, gear	2B003
Grinding machines	2B201.b
Grinding machines	2B001.c
Ground vehicles & related commodities.....	0A606
Guanarito virus.....	1C351.a.10
Guanidine nitrate.....	1C011.c or 1C608.m
GUDN (Guanylurea dinitramide) FOX-12 (CAS 217464-38-5)	Annex to Cat 1 List of Explosives 46
Guidance sets usable in missiles	7A117
Guillotines.....	0A981
Gun barrel rifling and broaching machines and tools therefor	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
Hafnium oxide (hafnia) (HfO ₂) made/coated crucibles	2A225.a.5
Hafnium metal, alloys & compounds	1C231
Hafnium fluoride (HfF ₄) glass	6C004.e

Description	ECCN Citation
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	1C351a.11
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
Helicopter system development technology	7E004.c
Helicopter power transfer system technology	9E003.d, 9E610
Helium, enriched	1C232
Helium refrigeration units	1B231.b.1
Helium	1C980
Helium-3	1C232
Helix Tubes	3A001.b.1.a.4
Helmet, military	1A613.c and .y.1
Helminthosporium oryzae (Cochliobolus miyabeanus)	1C354.b.2
Hemishell dimensional inspection equipment/systems	2B006.c
Hendra virus (Equine morbillivirus)	1C351.a.12
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

Description	ECCN Citation
HIPS (Hot Isostatic Presses)	2B204
HIPS (Hot Isostatic Presses)	2B004
HIPS (Hot Isostatic Presses)	2B104
Hogcholera virus (swine fever virus).....	1C352.a.7
Holding or storage vessels, critically safe & resistant to nitric acid	0B006.e
Hollow cylinder centrifugal balancing machines	2B229.b
Holographic sights	0A987
Honing machines, gear	2B003
Honing machines, gear.....	2B003
Hopping code generation capability, equipment with	5A002.a.5
Horses by sea	0A980
Hoses (brake) for ground vehicles	0A606.y.1
Hoses (cooling systems) for ground vehicles	0A606.v.7
Hoses (fuel) for gas turbine engines	9A619.y.3
Hoses (fuel and hydraulic) for military aircraft	9A610.y.10
Hoses (hydraulic system) for ground vehicles.....	0A606.y.10
Hoses for pneumatic/hydraulic/oil/fuel systems in surface vessels of war.....	8A609.y.2
Hoses (pneumatic) for ground vehicles	0A606.y.13
Hot isostatic presses (HIPS)	2B204
Hot isostatic densification technology/data, Al/Ti/Superalloys.....	2E003.b.2.d
Hot isostatic presses (HIPS).....	2B004
Hot cap sealers (semi-automatic or automatic) for ceramic microcircuit	3B991.b.3.c
Hot cell manipulators	2B225
Hot cells	0B999
Hot isostatic presses (HIPS)	2B104
Hovercraft	8A001
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	1C006.a
Hydraulic fluids	1C980
Hydraulic fluids	1C996
Hydraulic forming equipment.....	2B999.b
Hydraulic fracturing items	0A998.b

Description	ECCN Citation
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 vessels	8A001.h
Hydrofoils	8A002.m
Hydrogen.....	1C980
Hydrogen cyanide (74-90-8).....	1C355.b.1.c
Hydrogen fluoride.....	1C350.d.7
Hydrogen fluoride (HF) lasers	6A005.d.5.a
Hydrogen isotope storage & purification systems	1B231.b.2
Hydrogen refrigeration units.....	1B231.b.1
Hydrogen sulphide-water exchange tray columns	1B229
Hydrogen-cryogenic distillation columns.....	1B228
Hydrophone arrays, towed acoustic	6A001.a.2.b
Hydrophone arrays (towed) acoustic data processing source code	6D003.a.2
Hydrophones	6A001.a.2.a
3-Hydroxy-1-methylpiperidine	1C350.d.8
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 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 sensors, multispectral and monospectral	6A002.b

Description	ECCN Citation
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 heads designed/modified for use with balancing machines in 2B119.a.....	2B119.b
Indium organo-metallic compounds	3C003
Indium III/V compounds substrates.....	3C001.c
Induction coil magnetometers.....	6A006.c
Induction furnace, controlled environment inert gas	2B226
Induction furnace, vacuum.....	2B226
Inductively coupled plasma mass spectrometers (ICP/MS)	3A233.a
Industrial process control hardware/systems designed for power industries.....	1B999.c
Industrial process control hardware/systems designed for power industries controlled by 1B999, software for.....	1D999.a
Inert gas environment induction furnaces.....	2B226
Inertial Measurement Equipment.....	7A003.c
Inertial measurement equipment.....	7A003
Inertial measurement unit tester (IMU module)	7A003, 7B003 or 7B101
Inertial navigation, systems/equipment/components	7A103.a
Inertial navigation, systems/equipment/components	7A003
Inertial navigation systems not controlled by 7A003 or 7A103	7A994
Inertial navigation system software, source code	7D002
Inertial reference Systems (IRS).....	7A003.c
Inertial sensors, optical fiber.....	6A002.d.3.a
Inflatable boats and components.....	8A992.f
Inflation cartridges	8A992.i
Influenza virus	1C351.b.1
Information security equipment software	5D992
Information security technology support software	5D002.b
Information security equipment and components, n.e.s.	5A992
Information security software	5D002
Information security systems/equipment/devices/components.....	5A002
Information security technology	5E992
Information security - test, inspection, and production equipment	5B002

Description	ECCN Citation
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.c
Inspection equipment for composite materials	1B001.f
Inspection machines (dimensional), devices or systems, other than those in 2B006	2B206
Instruction generators for machine tools - technology	2E003.d
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
Intercepting systems and equipment, communications	5A001.f
Intercepting devices, communications.....	5A980
Interconnect equipment (Computer)	4A003.g
Interconnection equipment.....	3B991.b.1.1

Description	ECCN Citation
Interferometers, velocity (VISARs).....	6A225
Interlacing machines	1B001.c
Intermediate amplifier equipment.....	5A991.b Note a.3
Interstages for missiles.....	9A117
Intrinsic magnetic gradiometers.....	6A006.c.3
Inverse synthetic aperture radar (ISAR)	6A008.d
Inverters (Frequency changers or converters).....	3A225
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
Ion-exchange processing equipment.....	0B006.c
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
Jamming equipment	5A001.f.3
Japanese encephalitis virus	1C351.a.13
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
Junin virus.....	1C351.a.14
Kerr or Pocket cells, electro-optical shuttering.....	6A203.b.3.c
Kick motors.....	9A004
Krytron tubes, gas	3A228.a
Kyasanur Forest virus	1C351.a.15
Laboratories (mobile), crime science.....	9A980

Description	ECCN Citation
Laguna Negra virus.....	1C351.a.16
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	2B008.a
Laser based measuring instruments	2B006.b.1.c
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 gyro mirror characterization equipment.....	7B102
Laser microphone.....	6A005.g
Laser pointing devices for use on firearms	0A987
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 fever virus	1C351.a.17
Lathes (CNC).....	2B001.a
Latches for ground vehicles	0A606.y.11
Launch support equipment.....	9A115, 9A610.f
Launch vehicle components/structures	9A010, 9A610.x
Lavatories for military aircraft.....	9A610.y.11
Lavatories for submersible vessels	8A620.y.4
Lavatories for surface vessels of war.....	8A609.y.4
LAX-112 (3,6-diamino-1,2,4,5-tetrazine-1,4-dioxide).....	Annex to Cat 1 List of Explosives 47.b
Leg irons	0A982
Lenses for radiation hardened TV cameras	6A203.c
Lidar equipment (Laser radar)	6A008.j

Description	ECCN Citation
Life jackets.....	8A992.i
Life rafts for military aircraft.....	9A610.y.12
Lift fans, for surface effect vessels	8A002.1
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
Light-weight reduction gearing, marine transmissions.....	8A002.o.1.d
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 voltage displacement transformer (LVDT) based instruments	2B006.b.1.b.1
Linear position feedback units or sensors	2B008.a
Linear measuring equipment/instruments.....	2B006.b.1
Linear focal plane arrays	6A002.a.3
Linear-angular inspection equipment for hemishells.....	2B006.c
Liquid oxidizers, various nitrous oxides.....	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 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
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Description	ECCN Citation
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Monel equipment including valves, piping, tanks and vessels	2B999.f
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Description	ECCN Citation
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Description	ECCN Citation
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Nickel powder	1C240
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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
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Noise reduction systems for vessels, active	8A002.o.3.b
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Non-tunable continuous wave (CW) lasers	6A005.a or 6A995.e
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Description	ECCN Citation
Nuclear materials, facilities, and equipment software	0D001
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Operating system software for real time processing equipment.....	4D993.c
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Optical fiber preforms.....	6C994.b
Optical fiber preforms.....	5C991
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Description	ECCN Citation
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PEK (Polyether ketone)	1C998
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PFIB (1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8)	1C355.a.1.a
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Description	ECCN Citation
Phased array/segment mirror control equipment	6A004.d.4
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Pinacolone.....	1C350.d.11
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Pumps, vacuum.....	2B350.i
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Pyrolitically derived materials production technology	1E104
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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
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Description	ECCN Citation
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Radiation hardened sensors.....	6A002
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Radiation transport calculations/modeling, software for	0D999.b
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Radiation shielding windows.....	1A227
Radio frequency monitoring equipment	5A001.f.4
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Description	ECCN Citation
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Recording equipment, analog & digital tape recorders	3A002.a
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Reduction gearing, light-weight marine transmissions.....	8A002.o.1.d
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Description	ECCN Citation
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Remotely operated vehicles	1A006.a
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Resaturated pyrolyzed materials	1C102
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Resists (positive), semiconductor lithography	3C992
Resist material, coated (semiconductor) substrates	3C002
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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
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Reticle sights	0A987
Rhenium and alloys containing rhenium	1C241
Ricin	1C351.d.11
Rickettsia prowazekii	1C351.c.15
Rift Valley fever virus	1C351.a.29
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Ring laser gyro mirror characterizing equipment	7B002
Ring Magnets	0A999
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Robot end-effectors	2B007
Robot controllers for high explosive handling	2B207
Robot controllers	2B007
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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
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Description	ECCN Citation
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Rocket motors, hybrid	9A109
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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.....	2B008.b
Rotor assembly mandrels, bellows forming.....	2B228.a
Rotor centrifugal balancing machines	2B229
Rotor components, tooling for manufacture	9B009
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Rotor forming mandrels, precision	2B209.b
Rotor straightening equipment or systems.....	2B228.b
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S-parameter test/measurement equipment	3B002.a
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Safety cabinets, capable of biological use	2B352.f.2
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Satellite communication equipment technology	5E001.b.1
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Scanning cameras & systems.....	6A003.b.2
Scatterometers	7B002.a
Scatterometers, to characterize mirrors for laser gyro equipment	7B102.a
Sclerophthora rayssiae var. zeae	1C354.b.8
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Scuba gear	8A992.h

Description	ECCN Citation
SDH (Synchronous Digital Hierarchy) technology	5E001.b.4
SDH (Synchronous Digital Hierachy) technology	5E991.a.2
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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
Seals, for surface effect vessels	8A002.k
Seals, made from fluoroelastomers.....	1A001.c
Search lights.....	0A617.y.5
Seats, seat assemblies, seat supports, and harnesses – for ground vehicles.....	0A606.y.14
Security equipment, information	5A002
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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
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	2B008.a
Sensors, Micromachined Angular Rate	7A994
Sensors, multispectral imaging	6A002.b
Sensors, optical	6A992
Sensors, optical	6A002
Sensors, pressure (manganin & quartz)	6A226
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Description	ECCN Citation
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Seoul virus	1C351.a.32
Separation mechanisms for missiles	9A117
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Separators, electromagnetic isotope.....	1B226
Servo valves, propellant control systems.....	9A106.d
Shackles	0A982
Shaft encoders (rotary input type).....	3A001.f
Shale oil	1C981
Shaving machines, gear	2B003
Sheep pox virus.....	1C352.a.13
Shields, police.....	0A979
Shiga toxin	1C351.d.13
Shiga-like ribosome inactivating proteins other than verotoxin	1C351.d.17
Shiga toxin producing Escherichia coli (STEC) of serogroups O26, O45, O103, O104, O111,O121, O145, O157, and other shiga toxin producing serogroups	1C351.c.17
Shigella dysenteriae	1C351.c.18
Ship vessel positioning systems, acoustic.....	6A001.a.1.d
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Shock batons	0A985
Shock belts	0A982
Shock shields	0A985
Shock sleeves	0A982
Shock tubes	1C608.b or 1C992.c
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
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Sidelooking airborne radar (SLAR).....	6A008.d
Sights and sighting devices for firearms	0A987
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

Description	ECCN Citation
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 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
Silahydrocarbon oils	1C006.a.1
Silicon carbide (SiC) substrate blanks	6C004.d
Silicon, hetero-epitaxial grown multi-layer substrates	3C001.a
Silicon microcircuits	3A001.a
Silicone carbide wafers	3C005
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
Single crystals	6C002.b
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Single point diamond turning techniques, technology.....	6E003.d.2
Single-element & focal plane arrays, space-qualified	6A002.e
Sin Nombre virus	1C351.a.33
Skin friction transducers, wall	9B008
Skirts, for surface effect vessels.....	8A002.k
Slapper detonators (Electric).....	1A007 or 3A232.a.3
Slurry propellant control systems	9A106.d
Small waterplane area vessels.....	8A001.i
Smoke bombs.....	1A984
Smoke detector for military aircraft.....	9A610.y.27
Sodium azide.....	1C992.1
Sodium bifluoride	1C350.d.16
Sodium cyanide.....	1C350.d.17
Sodium fluoride	1C350.d.18
Sodium (Na) metal vapor lasers.....	6A005.b
Sodium sulphide.....	1C350.d.19
<i>Software, see product group D for controls in each category</i>	

Description	ECCN Citation
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 equipment controlled by 2A983	2D983
“Software” “specially designed” for ground vehicles and related commodities controlled by 0A606, 0B606, or 0C606	0D606
“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, superconductive.....	3A001.e.3
Solenoids, superconductive	3A201.b
Solid propellant rocket engines.....	9A107
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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

Description	ECCN Citation
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 and 0D521 No. 2
Source code recovery software	5D001.c.2
Space launch vehicles	9A004
Space probes	9A004
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
Spectrometry analytical instruments.....	3A999.f
Spherical aluminum powder	1C111.a.1
Spiked batons	0A983
Spin forming machines	2B009
Spin forming machines	2B209
Spin forming machines	2B9991
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.c
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

Description	ECCN Citation
Spread spectrum radio equipment.....	5A001.b.3
Spread spectrum spreading code generation.....	5A002.a.5
Spryttron 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
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
‘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
St. Louis encephalitis virus.....	1C351.a.34
Storage & holding vessels, critically safe & resistant to nitric acid	0B006.e
Storage phosphor image plates	1A999.b
Storage tanks, chemical (capacity greater than 100 L).....	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

Description	ECCN Citation
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
Subcavitating hydrofoils	8A002.m
Submarine diesel engines.....	8A620.d
Submarine engines, n.e.s.....	8A992.g
Submarine nets.....	8A620.e
Submarine vessel positioning systems, acoustic.....	6A001.a.1.d
Submersible systems.....	8A992.e
Submersible vessels, cargo and transport	8A620
Submersible vessels, military.....	8A620
Submersible vessels, oceanographic and associated commodities.....	8A620
Submersible vehicles operation software (unmanned)	8D999
Submersible vehicles/vehicle systems, equipment, or components (non-military).....	8A002.a
Submersible vehicles/vehicle systems or equipment (non-military)	8A001
Substrate development/production technology, diamond film	3E003.d
Substrates, for X-ray masks	3B991.b.2.b.2
Substrates, hard surface coated.....	3B991.b.2.b.1
Substrates, multi-layer hetero-epitaxial materials.....	3C001
Substrates, semiconductor with resist coating	3C002
Substrates with at least one epitaxial layer of silicon carbide, gallium nitride, aluminum nitride or aluminum gallium nitride	3C006
Suits, protective.....	1A004, 1A995 or 2B352.f.1
Sulphur dichloride.....	1C350.c.7
Sulphur monochloride.....	1C350.c.6
Super-ventilated propellers	8A002.o.1.a
Supercavitating hydrofoils	8A002.m
Supercavitating propellers	8A002.o.1.a
Supercomputers, see Computers	
Superconducting quantum interference devices (SQUIDs).....	6A006.a.1
Superconductive composite conductor	1C005
Superconductive gates, current switching.....	3A001.d.1
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

Description	ECCN Citation
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 irregularity measuring equipment/instruments	2B006.c
Surface coating & processing equipment	2B005
Surface skimming (shallow bulk) acoustic wave devices.....	3A001.c.1
Surface acoustic wave devices.....	3A001.c.1
Surface vessel positioning systems, acoustic.....	6A001.a.1.d
Surface vessels & components.....	8A001 and 8A609
Surface vessels of war and related commodities	8A609
Surface finishing equipment	3B991.b.1.k
Surface-effect vehicles, (fully skirted variety)	8A001.f
Surface-effect vehicles, (fully skirted variety)	8A002.k
Surface-effect vehicles,(rigid sidewalls)	8A001.g
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)	1C352.a.1
Swine fever virus (Hog cholera virus).....	1C352.a.7
Switch fabric development/production technology	5A991.c.10
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
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

Description	ECCN Citation
Tanks, stainless steel.....	2B999.g
Tank turret rings and sprockets induction hardening machines.....	2B018.m
Tank turret bearing grinding machines.....	2B018.s
Tantalum crucibles coated with tantalum carbide/nitride/boride.....	2A225.c
Tantalum made or lined crucibles.....	2A225.b
Tape designed for testing recording equipment of entry 3A002a.....	3A002.a
Tape bonders, stored program controlled equipment.....	3B991.b.3.b
Tape recording equipment.....	3A002.a
Tape-laying machines.....	1B101.b
Tape-laying machines.....	1B001.b
Tar sands.....	1C981
Tear gas.....	1A984
<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, machine tool instruction generators.....	2E003.d
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 6A990.....	6E990
“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	

Description	ECCN Citation
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, high and low temperature tolerant.....	5A991.a
Telecommunication equipment not controlled by 5A001	5A991
Telecommunications equipment/system software	5D001.c.1
Telecommunications interception equipment	5A001.f
Telecommunication monitoring equipment.....	5A001.f
Telecommunication test, inspection and production equipment	5B001
Telecommunications test equipment.....	5B991
Telecommunications transmission equipment, equipment for the development of equipment employing	5B001.b
Telecommunications transmission equipment, software for the development of equipment employing	5D001.d
Telecommunications transmission equipment, technology for the development of equipment employing	5E001.c
Telemetry & telecontrol equipment for missiles.....	5A101
Television cameras (radiation hardened), or lenses therefor	6A203.d
Television cameras, underwater.....	8A002.d.1.b
Television cameras, underwater.....	8A002.d.1
Television cameras, underwater	8A002.d.1.a
Television cameras, underwater.....	8A992.a.2
Television systems (camera, lights, monitoring and signal transmission equipment), remote operation with submersible vehicle	8A992.a.1
Tellurium (Te).....	6C002.a
Tempest type equipment	5A002.a.4
Tension stretchers for prepregs/preform production	1B101.d
Terminal interface equipment	4A994.i
Terrestrial, marine acoustic equipment.....	6A991
Teschen disease virus.....	1C352.a.14
Test benches/stands, for rockets/motors/rocket engines.....	9B117
Test, calibration or alignment equipment for equipment controlled by 7A.....	7B001
Test chambers, aerosol challenge	2B352.g
Test equipment - propellants and their constituents	1B115
Test equipment - specially designed for testing finished or unfinished semiconductor devices.....	3B002
Test models for defense articles.....	0A617
Test receivers, microwave	3A002.f

Description	ECCN Citation
Test tape designed for recording equipment of entry 3A002a.....	3A002.a
Testing equipment, for electronic components.....	3B992.b.4
Test, inspection, development and production equipment for Category 5 items.....	5B
Tetrazines.....	Annex to Cat 1 List of Explosives 47
Tetrodotoxin.....	1C351.d.16
TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4, 10- diazaisowurtzitane).....	Annex to Cat 1 List of Explosives 45
Thallium arsenic selenide (Tl 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.20
Thionyl chloride.....	1C350.c.8
Thrust tabs, thrust vector control subsystems.....	9A106.c
Thrust vector control sub-system.....	9A106.c
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
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.35
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

Description	ECCN Citation
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
Titanium-stabilized duplex stainless steel 9Ti-DSS).....	1C118
TMETN (trimethylolethane trinitrate)	1C111.c.4
Tooling for powder metallurgy rotor component manufacture	9B009
Torpedo nets.....	8A620.e
Torquemeter assembly software	9D619.b.9
Torture, specially designed implements of	0A983
Tow-placement machines	1B001.g
Towed acoustic hydrophone arrays	6A001.a.2.b
Toxic gas monitoring systems	2B351
Toxins	1C350, 1C351, 1C355 or 1C395
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
Transient recorders (Waveform digitizers).....	3A002.a.5 or 3A292.d
Transistor test equipment, S-parameter measurement.....	3B002.a
Transistors, microwave.....	3A001.b.3
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
Transmultiplex equipment	5A991.b Note a.9
Traveling wave tubes (TWTs), industrial	3A001.b.1.a
Tributyl phosphate	1C999.d
Triethanolamine	1C350.c.9
Triethanolamine hydrochloride.....	1C350.d.20
Triethyl phosphite	1C350.c.10
Triethylene glycol dinitrate (TEGDN).....	1C111.c.2
Triggered spark-gaps	3A228.b
Triggers, high voltage	3A999.c
Trimethyl phosphite	1C350.c.11
Tritium, compounds & mixtures.....	1C235

Description	ECCN Citation
Tritium plant or facilities equipment	1B231.b
Tritium production recovery, extraction & concentration handling facilities or plant.....	1B231.a
Trusted Computer System Evaluation Criteria (TCSEC) capability	5A002.f
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
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

Description	ECCN Citation
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 furnaces	2B226
Vacuum furnaces	2B227
Vacuum induction furnaces	2B226
Vacuum induction furnace, power supplies.....	2B226
Vacuum melting, remelt & casting furnaces.....	2B227
Vacuum microelectronic device development/production technology.....	3E003.a
Vacuum pumps	2B231
Vacuum pumps	2B350.i
Vacuum pumps, bellows-sealed scroll-type	2B233
Vacuum tubes, electronic microwave	3A001.b.1
Vacuum spraytron tubes	3A228.a
Vacuum valves, piping, flanges, gaskets	2B999.k
Valve seats, made from fluoroelastomers.....	1A001.c
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

Description	ECCN Citation
Valves, double-seal	2B350.g
Valves, of or lined with stainless steel, copper-nickel alloy or other alloy steel	2A292
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
Variola virus.....	1C351.a.36
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.37
Ventilated full or half (protective clothing) suits.....	2B352.f.1
Ventilated propellers.....	8A002.o.1.a
Verocytotoxin producing E. coli (VTEC)	1C351.c.17
Verotoxin	1C351.d.17
Vesicular stomatitis virus.....	1C352.a.15
Vessels, austenitic stainless steel	2B999.n
Vessel positioning systems, acoustic	6A001.a.1.d
Vessel noise reduction equipment	8A002.o.3
Vessels, marine	8A001, 8A609, 8A620
Vessels, marine systems or equipment	8A992
Vessels, monel	2B999.f
Vessels, stainless steel	2B999.e
Vests, bulletproof & bullet resistant	1A005
Vibration test equipment, acoustic.....	9B006
Vibration test equipment, parts and components.....	9B990
Vibration test equipment using digital control techniques	2B116
Vibrio cholerae.....	1C351.c.19
Video cameras incorporating solid state sensors	6A003.b.1
Vinylidene fluoride copolymers	1C009.a
Vinylidene fluoride copolymers, components of.....	1A001
virulans, fungi (Colletotrichum kahawae)	1C354.b.1
Virus protection software.....	5D992
Viruses	1C351, 1C352 or 1C353
Viruses, animal pathogens	1C352.a

Description	ECCN Citation
Viruses, human pathogens	1C351.a
Viruses, plant pathogens	1C354.c
Viscous software, 2D or 3D engine flow modeling.....	9D004.a
Viscum Album Lectin 1 (Viscumin).....	1C351.d.18
Vision systems, underwater	8A992.a
Vision systems, underwater	8A002.d
Voice print identification and analysis equipment and parts	3A980
Volkensin toxin.....	1C351.d.19
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
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
Water-screw propellers	8A002.o.1
Wave division multiplex equipment	5A991.b.5
Waveform digitizers (Transient recorders).....	3A002.a.5
Wax pattern preparation equipment, ceramic shell	9B991.e
Weaving machines	1B001.c
Weight belts	8A992.i
Welders, MIG	2B999.d
Welders, E-beam.....	2B999.e
Welding machines, laser	2B999.c
Western equine encephalitis virus	1C351.a.38
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

Description	ECCN Citation
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
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.39
Yersinia pestis	1C351.c.20
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
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.