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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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

Description **ECCN Citation**

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
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
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 ..... 1C018.d or 1C992.e
Detonators, exploding bridge wire (EBW) 1A007

Description **ECCN Citation**

Detonators, exploding bridge (EB 1A007
Detonators, exploding foil initiators (EB) 1A007
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
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

Description **ECCN Citation**

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 tape data recorders....3A002.a.3
Digital signal processors....3A001a.3 Note
Digital signal processors....4A003
Digital time delay generators....3A999.e1
Digital video magnetic tape recorders....3A002.a.2
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
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 (Nitrogen dioxide)....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

Description	ECCN Citation
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
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
Dry etching equipment, anisotropic plasma	3B001.c
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
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

Description **ECCN Citation**

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
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

Description **ECCN Citation**

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
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.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_2O_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

Description **ECCN Citation**

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.l
Explosives (military) production equipment 1B018.a
Explosives (military) in charges for civil applications ..... 1A008 or 1C018
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 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

Description	ECCN Citation
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
Filters for clean rooms	3B991.b.4
Filters, optical	6A994.a
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
Firearms, muzzle-loading (black powder)	0A018.c
Firing sets, for multiple detonators of 3A232	1A007 or 3A229.a
Fireworks displays	1C018.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
Flight management system integration technology	7E104
Flight control servo valves	9A106.e
Flight control systems for missiles	7A116
Flight control systems - software	7D003.e and 7D004
Flight instrument systems, integrated	7A103.b

Description **ECCN Citation**

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 2B999l
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
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, 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 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
FPGA's (Field programmable gate arrays) 3A001.a.7
FPLA's (Field programmable logic arrays) 3A001.a.8
Framing cameras, electronic type 6A203.b.2

Description **ECCN Citation**

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 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 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
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
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
Gallium selenide....6C004.b.5
Gallows....0A981
Gas centrifuge rotor assembly equipment....2B228.a

Description **ECCN Citation**

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 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 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, vacuum 2B999.k
Gate silicon intensifier target (SIT) videcon tubes 6A203.b.3.b
Gateways & bridges 5A991.b.4.b
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
Generator systems, neutron 3A231
Generators and other equipment for nuclear plants 2A290
Generators, digital time delay 3A999.e1
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

Description **ECCN Citation**

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 positioning system (GPS) equipment & components ..... 7A005, 7A105 or 7A994
Glove boxes 0B999
Gloves, protective ..... 1A004 or 1A995
Glow discharge mass spectrometers (GDMS) 3A233.b
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
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
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Grenades, non-irritant smoke 1A984
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Grinding machines, gear 2B003
Grinding machines 2B201.b
Grinding machines 2B001.c
Ground vehicles & related commodities 0A606
Guanarito virus 1C351.a.10

Description **ECCN Citation**

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Gun boring and turning machines 2B018.h
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Gun, immobilization 0A985
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Gun rifling machines 2B018.k
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Gyro tuning test stations ..... 7B003 or 7B101
Gyro run-in/motor test stations ..... 7B003 or 7B101
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Harnesses, complete 9A992, 9A610.h
Heading sensors, towed hydrophones 6A001.a.2.b.4
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Helium, enriched 1C232
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Hendra virus (Equine morbillivirus)	1C351.a.12
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Hetero-structure semiconductor technology	3E003.b
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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
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HIPS (Hot Isostatic Presses)	2B004
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Hollow cylinder centrifugal balancing machines	2B229.b
Holographic sights	0A987
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Honing machines, gear	2B003
Hopping code generation capability, equipment with	5A002.a.5
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Hot isostatic presses (HIPS)	2B004
Hot cap sealers (semi-automatic or automatic) for ceramic microcircuit	3B991.b.3.c
Hot cell manipulators	2B225
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Hot isostatic presses (HIPS)	2B104
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Hybrid rocket propulsion systems	9A009
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Description **ECCN Citation**

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Hydraulic fluids 1C996
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Image enhancement equipment..... 4A994.f
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Description **ECCN Citation**

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Inductively coupled plasma mass spectrometers (ICP/MS)....3A233.a
Industrial process control hardware/systems designed for power industries....1B999.c
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Inert gas environment induction furnaces....2B226
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Inertial measurement equipment....7A003
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Description **ECCN Citation**

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Information security systems/equipment/devices/components.....5A002
Information security technology 5E992
Information security - test, inspection, and production equipment 5B002
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Infrared viewers (police model).....9A980
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Initiation systems, single or multipoint (electric) 3A232.b
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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
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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
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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
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Integrated Services Digital Network technology 5E991
Integrated system source code, avionic/mission systems 7D003.c
Integration software for expert systems 2E003.e

Description **ECCN Citation**

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Interconnection equipment 3B991.b.1.l
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Inverters (Frequency changers or converters) 3A225
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Ion beam equipment for projection image transfer 3B991.b.2.g
Ion beam sensitive resist materials 3C002.b
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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
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Isolators capable of use with biological agents 2B352.f.2
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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

Description	ECCN Citation
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
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
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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
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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
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Description **ECCN Citation**

Life jackets....8A992.i
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Light gas guns(Multistage) systems....2B232
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
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Lightweight turbofan/turbojet engines....9A101, 9A619.a
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Linear position feedback units or sensors....2B008.a
Linear measuring equipment/instruments....2B006.b.1
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Linear-angular inspection equipment for hemishells....2B006.c
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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
Lithography mask or reticle fabrication equipment....3B991.b.2.d.2
Lithography software....3D003
Location & object detection systems or transmitting and receiving arrays, acoustic....6A001.a.1.b
Logic arrays, field programmable (FPLA)....3A001.a.8
Logic processors and assemblies....4A003
Louping ill virus....1C351.a.18

Description **ECCN Citation**

Low Light Level (LLL) camera software 6D003
Lubricating materials 1C006.b
Lubricating oil 1C980
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Lumpy skin disease virus 1C352.a.16
LVDT (Linear voltage displacement transformer) based instruments 2B006.b.1.b.1
Lymphocytic choriomeningitis virus 1C351.a.20
Lyssa virus 1C352.a.8
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
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Machines for turning (CNC) 2B001.a
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Machine tool rotary position feedback units 2B008.b
Machine tool spindles 2B008.c
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Machining centers (CNC) 2B001
Machupo virus 1C351.a.21
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
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Magnesium oxide (MgO) made or coated crucibles 2A225.a.6
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Magnetic anomaly detection software 6D003.f.2

Description **ECCN Citation**

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 confinement plasma dry etching equipment 3B001.c.1.a
Magnetic and Electric Field Sensors "software" 6D003.f
Magnetic gradiometers 6A006.c
Magnetic gradiometers, intrinsic 6A006.c.2
Magnetic hard disk drive development or production technology 4E993.c
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
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
Maraging steel 1C116
Maraging steel 1C216
Marburg virus 1C351.a.22
Marine acoustic systems 6A001.a
Marine boiler 8A992.l
Marine engines and parts (both inboard and outboard, n.e.s.) 8A992.g
Marine gas turbine engines 9A002
Marine, terrestrial acoustic equipment 6A991
Marx generators 3A999.c
Mask, gas or full face ..... 1A004 or 1A995
Mask or reticle altering holders or equipment 3B991.b.2.d.3
Mask or reticle fabrication equipment 3B991.b.2.d
Mask or reticles or pellicles, stored program controlled inspection equipment 3B991.b.2.e
Mask software 3D003
Masks 8A992.i
Masks, integrated circuits of 3A001 ..... 3B001.g

Description **ECCN Citation**

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
Mechanical cameras, framing ..... 6A003.a.1, 2 or 3
Media access units ..... 5A991.b Note a.12
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
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Metal alloys, hafnium 1C231
Metal alloys, lithium 1C233
Metal alloys, powder and material production systems and components 1B002
Metal alloys, tungsten 1C226
Metal alloys, tungsten or molybdenum 1C117
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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

Description **ECCN Citation**

Metal working manufacturing processes technology 2E003.b
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Metallurgical melting & casting furnaces..... 2B227
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Metals with high initial relative (magnetic) permeability..... 1C003.a
Methyl centralites..... 1C018.a
Methyldiethanolamine (105-59-9) 1C355.b.2.b
Methyl phosphinyl dichloride 1C350.b.15
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Methyl phosphonous dichloride..... 1C350.b.15
Methyl phosphonous difluoride 1C350.b.16
Methyl phosphonyl dichloride 1C350.b.17
Methyl phosphonyl difluoride (DF)..... 1C350.a.3
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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 (Cyanginosin)..... 1C351d.9
Microfluorination ion sources..... 3A233.f
Micromachined Angular Rate Sensors 7A994
Microorganisms, genetically modified 1C353
Microprocessor microcircuits 3A001.a.3
Microprocessor microcircuits above 530 MTOPS development/production technology..... 3E002.g
Microwave amplifiers, solid state 3A001.b.4
Microwave frequency extenders, mixers/converters 3A001.b.7
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Microwave integrated circuits..... 3A001.b.2
Microwave modules..... 3A001.b.2
Microwave or millimeter wave components 3A982
Microwave or millimeter wave components software..... 3D982
Microwave or millimeter wave components technology..... 3E982
Microwave Monolithic Integrated Circuit (MMIC) power amplifier technology ..... 5E001.d or .e
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

Description **ECCN Citation**

Military construction equipment ……0A617.y
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 vehicles 0A606
Military vehicle fording kits 0A606
Military vehicle self-launching bridge components 0A606
Military commodities.....0A919
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 control equipment, phased array/segment.....6A004.d.4
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, 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 toxin 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

Description **ECCN Citation**

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
Monkey pox virus 1C351.a.23
Monolithic integrated circuits ..... 3A001.a Note 2
Monolithic integrated circuit repair or trimming laser equipment 3B991.b.1.m
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
Multi-data-stream processing equipment, development or production technology for 4E993.b
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
Multichip integrated circuits ..... 3A001.a Note 2
Multilevel security capability, equipment 5A002.a.6
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.24
Mycoplasma capricolum subspecies capripneumoniae (“strain F38") 1C352.b.1.b
Mycoplasma mycoides subspecies mycoides SC (small colony) (a.k.a. contagious bovine pleuropneumonia) 1C352.b.1.a
N,N-diisopropyl-beta-aminoethane thiol 1C350.b.6
N,N-diisopropyl-(beta)-amino ethanol 1C350.b.8
N,N-diisopropyl-beta-aminoethyl chloride 1C350.b.9
N,N-diisopropyl-(beta)-aminoethyl chloride hydrochloride 1C350.b.7
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

Description **ECCN Citation**

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, 0E521 No. 6
Navigation, airborne communication and other avionics software .... 7D004, 7D994, 0D521 No. 2
Navigation direction finding equipment 7A004-7A008, 7A103-7A105, 7A994
Navigation systems, equipment & components, inertial 7A103
Navigation systems, equipment & components, inertial 7A003
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
Network analyzers 3A002.e
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 1C352.a.9
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.25
3-Nitraza-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

Description **ECCN Citation**

P-Nitromethylaniline.....1C018.i
N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-clorides 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
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
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 reactors fuel element (irradiated) reprocessing plant/equipment.....0B006
Nuclear technology for the development, production or use of nuclear materials, facilities, and equipment.....0E001
Numerical control for machine tools - software.....2D002 and 2D003
Numerical control for machine tools - technology.....2E003.d
Numerical control units for machine tools and numerically controlled machine tools, n.e.s.....2B991
Numerically controlled machine tools.....2B290
Numerically controlled machine tools that can be equipped with electronic devices for simultaneous contouring control.....2B991.c
Object detection and location systems or transmitting and receiving

Description **ECCN Citation**

arrays (acoustic) 6A001.a.1.b
Ocean salvage systems 8A001.e
Off highway wheel tractors 9A990
Oil well cartridges ..... 1C018.f or 1C992.g
Oil, lubricating, cutting, or quenching 1C980
Oils, distillate fuel 1C980
Omsk haemorrhagic fever virus 1C351.a.26
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
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

Description **ECCN Citation**

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 surface coating/treatment technology 6E003.d.1
Optical switching equipment 5A991.c.10.c
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
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.27
Oscillators or oscillator assemblies 3A001.b.10
Oscilloscopes (analog and digital) 3A292
Oxide matrix reinforced materials 1C007.f
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
Particle measuring systems employing lasers 3B992.b.7
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 1C352
Pathogens, human 1C351
Pathogens, plant 1C354
Pathogens, zoonotic 1C351
PBAA (Polybutadiene-acrylic acid) 1C111.b.3

Description **ECCN Citation**

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
1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8) (PFIB) 1C355.a.1.a
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 1C352.a.10
Petroleum products produced or derived from Naval Petroleum Reserves 1C982
Petroleum, crude or reconstituted 1C981
PFIB (1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8) 1C355.a.1.a
Phased array antennae (in radar) 6A008.e
Phased array/segment mirror control equipment 6A004.d.4
Phased array antennae (in radar) 5A001.d
Phased array antennae 5A991.f
Phenylene, as lubricating fluids 1C006.b.1
Phoma glycinicola (formerly Pyrenochaeta glycines) 1C354.b.12
Phosgene: Carbonyl dichloride (75-44-5) 1C355.b.1.a
Phosphate glass 6C004.e
Phosphor bronze or copper mesh packings 1A226
Phosphor image plates, storage 1A999.b
Phosphorus hydrides 3C004
Phosphorus oxychloride 1C350.c.3
Phosphorus pentachloride 1C350.c.4
Phosphorus pentasulphide 1C350.d.10
Phosphorus trichloride 1C350.c.5
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

Description **ECCN Citation**

"development" of lithographic, etching or deposition processes 3D003
Piezoelectric polymer & copolymer, made from vinylidene fluoride materials.....1A001.b
Piezoelectric sensing elements, hydrophones.....6A001.a.2.a.2.b
Pinacolone.....1C350.d.11
Pinacolyl alcohol.....1C350.b.18
Piping, austenitic stainless steel.....2B999.n
Piping, fittings and valves of or lined with stainless steel,
copper-nickel alloy or other alloy steel 2A292
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 atomization & melting furnaces 2B227.b
Plasma dry etching equipment.....3B001.c
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
Platforms, complete 9A992, 9A610.h
Platinized catalysts.....1A225
Plutonium metal production systems.....0B006.g
Plutonium nitrate conversion systems 0B006.f
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 alimina fibers ..... 1C010.c Note 1
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

Description **ECCN Citation**

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
Polymeric substances, non-fluorinated.....1C998
Polysilazanes, precursor for silicon nitride..... 1C007.e.2
Polythiophene 1C001.c.3
Porcine enterovirus type 91C352.a.11
Porcine herpes virus (Aujeszky' disease) 1C352.a.6
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 cyanide.....1C350.d.12
Potassium bifluoride 1C350.d.14
Potassium fluoride 1C350.d.13
Potassium hydrogen fluoride see potassium bifluoride 1C350.d.14
Potassium titanyl arsenate (KTA).....6C004.b.1
Potato Andean latent tymovirus (Andean potato latent virus)..... 1C354.c.1
Powassan virus..... 1C351.a.28
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
Power transmission shaft systems, marine.....8A002.o.1
Power transmission shaft systems, marine.....8A002.o.1.e
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

Description **ECCN Citation**

Preform production equipment 1B101.d
Preforms, metal coated, for fiber prepregs 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
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
Private automatic branch exchanges (PABXs) 5A991.c
Probing (test) systems, semiconductor devices 3B002.d
Process control instrumentation, for reprocessing plant 0B006.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

Description **ECCN Citation**

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
Programmable & logic arrays (FPGA's & FPLA's), field 3A001.a.8
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
Prolifometers, to characterize mirrors for laser gyro equipment 7B102.c
Propellant additives and agents 1C111.c
Propellants and constituent materials 1C111
Propellant control systems 9A106.d
Propellant (liquid) production equipment and components 1B115
Propellant (liquid) test and handling equipment and components 1B115
Propellant (solid) production equipment and components 1B117
Propeller blades or propfans composite technology 9E003.b.2, 9E610.y
Propeller noise reduction technology 8E002.a
Propeller noise reduction software 8D002
Propellers, contrarotating 8A002.o.1.b
Propellers, water screw 8A002.o.1
Propulsion equipment, nuclear 0A002
Propulsion systems/components, production equipment 9B115, 9B619
Propulsion systems, rocket 9A005
Propulsion equipment, underwater 8A992.j
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
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

Description **ECCN Citation**

Proximity focused image intensifier tubes....6A203.b.3.a
Pseudomonas mallei (Burkholderia mallei)....1C351.c.5
Pseudomonas pseudomallei (Burkholderia pseudomallei)....1C351.c.6
Psychological stress analysis equipment....3A981
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, 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....2A293
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

Description **ECCN Citation**

Pyrolysis equipment, for rocket nozzles and reentry vehicle nose tips (other than those controlled by 2B004, 2B005.a, 2B104, or 2B105).....2B117
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.....1C018.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.a.9
Quartz pressure sensors/transducers 6A226.b
3-Quinuclidinol.....1C350.b.19
3-Quinuclidone 1C350.d.15
Radar cross section measurement systems, missile.....6B108
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

Description **ECCN Citation**

Radiation hardened sensors....6A002
Radiation hardened TV cameras....6A203.c
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
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
Reactor vessels, chemical....2B350.a
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
Receivers, microwave test....3A002.f
Receivers, radio....5A001.b.2, 3 or 4
Reciprocating diesel engine & component technology....9E003.e.1
Reconstructed replication competent forms of the 1918 pandemic influenza virus containing any portion of the coding regions of all eight gene segments....1C351.b.1
Recording equipment, analog & digital tape recorders....3A002.a
Recovery of source code - software....5D001.c.2

Description **ECCN Citation**

Red dot sights....0A987
Reduced observables analysis software....1D103
Reduction gearing, light-weight marine transmissions....8A002.o.1.d
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
Refrigeration units, hydrogen or helium....1B231.b.1
Reinforced composite materials....1C007.f
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
Reprocessing plant, nuclear fuel....0B006
Resaturated pyrolized components....1A102
Resaturated pyrolized 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
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
Ricin....1C351.d.11
Rickettsia prowazekii....1C351.c.15
Rift Valley fever virus....1C351.a.29
Rinderpest virus....1C352.a.12

Description **ECCN Citation**

Ring laser gyro mirror characterizing equipment 7B002
Ring Magnets 0A999
Robot end-effectors 2B207
Robot end-effectors 2B007
Robot controllers for high explosive handling 2B207
Robot controllers 2B007
Robots with real time 3D image processing or scene analysis 2B007.a
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.30
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 2B008.b
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 1C351.a.35
S-parameter test/measurement equipment 3B002.a
S20 and S25 photocathodes 6A002
Sabia 1C351.a.31
Safety cabinets, capable of biological use 2B352.f.2
Salmonella typhi 1C351.c.16
Salvage systems, ocean 8A001.e

Description **ECCN Citation**

Saps 0A978
SARS-associated coronavirus (SARS-CoV) 1C351.b.2
Satellite communication equipment technology 5E001.b.1
Satellite receivers 7A005
Satellite receivers, other than those of 7A005 ..... 7A105
Satellites, commercial communications 9A004
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. zeae 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
Sea-induced motion control systems, automatic 8A002.n
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
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
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

Description **ECCN Citation**

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
Sensors, radiation hardened 6A102
Sensors, superconductive electromagnetic 6A996
Seoul virus 1C351.a.32
Separation mechanisms for missiles 9A117
Separators, centrifugal (biological) 2B352.c
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
Shock batons 0A985
Shock belts 0A982
Shock shields 0A985
Shock sleeves 0A982
Shock tubes ..... 1C018 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

Description **ECCN Citation**

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 designed for seabed imaging 6A001.a.1.a.3
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
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
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.33
Skin friction transducers, wall 9B008
Skirts, for surface effect vessels..... 8A002.k

Description **ECCN Citation**

Slapper detonators (Electric).....1A007 or 3A232.a.3
Slurry propellant control systems 9A106.d
Small waterplane area vessels.....8A001.i
Smoke bombs.....1A984
Sodium azide.....1C992.l
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
Software, see product group D for controls in each category
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
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
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

Description **ECCN Citation**

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 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....9A004
Spacecraft components 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 2B999l
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

Description **ECCN Citation**

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.a.5
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
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
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

Description **ECCN Citation**

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
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/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

Description	ECCN Citation
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 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

Description **ECCN Citation**

Synthetic aperture radar (SAR).....6A008.d
Systolic array computers/assemblies/components.....4A004.a
T-2 toxin.....1C351.d.15
Tanks, austenitic stainless steel.....2B999.n
Tanks, chemical storage (capacity greater than 100 L).....2B350.c
Tanks, monel.....2B999.f
Tanks, stainless steel.....2B999.g
Tank turret rings and sprockets induction hardening machines.....2B018.m
Tank turret bearing grinding machines.....2B018.s
Tantalum crucibles coated with tantalum carbide/nitride/boride.....2A225.c
Tantalum made or lined crucibles.....2A225.b
Tape designed for testing recording equipment of entry 3A002a.....3A002.a
Tape bonders, stored program controlled equipment.....3B991.b.3.b
Tape recording equipment.....3A002.a
Tape-laying machines.....1B101.b
Tape-laying machines.....1B001.b
Tar sands.....1C981
Tear gas.....1A984
Technology, see product group E for controls for each category.
Technology, airborne equipment.....7E004.a
Technology, development of frequency hopping techniques.....5E001.b.4
Technology, development of spread spectrum techniques.....5E001.b.4
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” 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, superconductive electronic device.....3E003.c
Technology, tilt rotor/wing power transfer systems development.....9E003.d, 9E610.a

Description **ECCN Citation**

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
Telemetering & telecontrol equipment for missiles 5A101
Television cameras, underwater 8A002.d.1.b
Television systems (camera, lights, monitoring and signal transmission
equipment), remote operation with submersible vehicle 8A992.a.1
Television cameras, underwater 8A002.d.1
Television cameras, underwater 8A002.d.1.a
Television cameras, underwater 8A992.a.2
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
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
Tetrodotoxin 1C351.d.16

Description **ECCN Citation**

Thallium arsenic selenide (Tl_3AsSe_3 or TAS) 6C004.b.3
Thecaphora solani 1C354.b.11
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
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_2O_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
Torture, specially designed implements of 0A983
Tow-placement machines 1B001.g
Towed acoustic hydrophone arrays 6A001.a.2.b

Description **ECCN Citation**

Toxic gas monitoring systems 2B351
Toxins ..... 1C350, 1C351, 1C355 or 1C395
Tracking radar 6A008.l.1
Tracking systems, precision 6A108.b.1
Tracking systems 6A008.l
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
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
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

Description **ECCN Citation**

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
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 6A203.c
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
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

Description **ECCN Citation**

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 tethered submersible vehicles.....8A001.c
Unmanned untethered submersible vehicles.....8A001.d
Uranium, depleted.....1A290

Uranium titanium alloys 1C004
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 tubes, electronic microwave 3A001.b.1
Vacuum sprytron 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, 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.b
Velocity interferometers (VISARs) 6A225
Velocity measurement equipment, underwater.....6A001.b
Venezuelan equine encephalitis virus..... 1C351.a.37

Description **ECCN Citation**

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
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

Description **ECCN Citation**

Water jet cutting machines (CNC) 2B001.e.1.a
Water jet (pumpjet) propulsion systems 8A002.p
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
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
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_2O_3), crucibles made or coated 2A225.a.8
Zinc germanium biphosphide 6C004.b.4
Zinc germanium diphosphide 6C004.b.4

Description **ECCN Citation**

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.