ALPHABETICAL INDEX TO THE COMMERCE CONTROL LIST

This index is not an exhaustive list of controlled items.

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

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Computers, analog & analog ruggedized 4A101
Computers for fingerprint equipment 4A980
Computers, digital ruggedized 4A101
Computers/assemblies/components, systolic array 4A004.a
Computers, analog 4A001

Description **ECCN Citation**

Computers, digital 4A003
Computers, digital 4A004
Computers, digital.....4A001
Computers, hybrid.....4A102
Computers, parts, components … for military application not on USML.....4A611/3A611
Computers and electronic assemblies (hybrid), and specially designed
components therefor.....4A994.k
Computers, with extended operating temperature range 4A001.a.1
Computers, radiation hardened 4A001.a.2
Concealment and deception equipment (military), i.e. special paints, decoys, smoke or obscuration
equipment and simulators…….. 0A617
Concealed object detection equipment .....2A984, 2D984 or 2E984
Condensers for use in nuclear reactors 2A290.a
Condensers or heat exchangers 2B350.d
Conductive polymers 1C001.c
Conductors, superconductive composite 1C005
Congo-Crimean haemorrhagic fever virus (a.k.a. Crimean-Congo haemorrhagic
fever virus) 1C351.a.9
Connector backshells, electric 3A611.y.9
Conotoxin 1C351.d.6
Construction equipment “specially designed” for military use 0A617.y.1
Contactors 3A611.y.27
Contagious bovine pleuropneumonia (Mycoplasma mycoides subspecies mycoides
SC (small colony)) 1C351.c.16
Containers, for packing defense articles or “600 series” items 0A617.y.3
Containers, chemical..... 2B350.c
Containment devices (not enumerated under ECCN 1B608 or in USML Category IV
or V) for the testing of high explosives or explosive devices 1B234
Containment facilities 2B352.a
Continuous mixers 1B118
Control units for metallurgical melting & casting furnaces.....2B227
Control systems, on-line development of gas turbine engines 9B002, 9B619.a
Controllable-pitch propellers 8A002.o.2.a
Controlled atmosphere melting & casting furnaces.....2B227
Controlled environment (vacuum or inert gas) induction furnaces 2B226
Controlled nucleation thermal decomposition (CNTD) equipment..... 2B005.a.1.b
Controllers, machine tool (CNC)..... 1B001.a
Controllers for high explosive handling robots 2B207
Controllers, robot 2B007
Converter integrated circuits.....3A001.a.5
Converters, frequency 3A225
Converters, frequency extender 3A001.b.7

Description **ECCN Citation**

Cooling fluids - electronic 1C006.d
Cooling fluids, fluorocarbon electronic 1C006.d
Cooling systems, freon and chilled water 1B999.d
Copper or phosphor bronze mesh packings 1A226
Copper metal vapor lasers 6A005.b
Coprocessor microcircuits ..... 3A001.a.3 Note
Correlation-velocity sonar log equipment 6A001.b
Counter-current solvent extractors 0B006.c
Counter Improvised Explosive Device equipment 5A001.h
Coxiella burnetii 1C351.c.13
Crime science laboratories, parts and accessories, nonmilitary mobile 9A980
Crimean-Congo haemorrhagic fever virus (a.k.a. Congo-Crimean haemorrhagic fever virus) 1C351.a.5
Critically safe tanks, nuclear fuel reprocessing 0B006.b
Cross-flow filtration equipment 2B352.d
Crossed-field amplifier tubes 3A001.b.1.b
Crucibles, liquid actinide resistant 2A225
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
Cryogenic and superconductive equipment, parts, components, accessories 9A620
Cryogenic and superconductive test equipment 9B620
Cryogenic and superconductive software 9D620
Cryogenic and superconductive technology 9E620
Cryptanalytic equipment 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

Description **ECCN Citation**

Cutting equipment for prepregs/preform production 1B101.d
CVD (Chemical vapor deposition) equipment 1B001.d.2
CVD (Chemical vapor deposition) equipment 2B005.a
CVD (Chemical vapor deposition) equipment 1B101.c.2
CVD (Chemical vapor deposition) furnaces, other than those controlled by 2B005.a, designed or modified for the densification of carbon-carbon composites 2B105
CW (Chemical warfare) precursors 1C350
Cyanogen chloride (506-77-4) 1C355.b.1.b, 1E355.b.2
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
Demolition blocks 0A604.a
Dengue fever virus 1C351.a.10
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

Description **ECCN Citation**

Detonator firing sets, for multiple detonators of 3A232 ..... 1A007 or 3A229
Detonators, electric or non-electric ..... 1C608.d or 1C992.e
Detonators, exploding bridge wire (EBW) 1A007
Detonators, exploding bridge (EB 1A007
Detonators, exploding foil initiators (EB) 1A007
Detonators for military explosives 0A604
Detonators, slapper (electric). 1A007
Deuterium fluoride-carbon dioxide (DF-CO2) lasers 6A005.d.5
Deuterium fluoride (DF) lasers 6A005.d.5
Di-isopropylamine 1C350.d.4
Diacetoxyscirpenol toxin 1C351.d.7
Dials, indicator 3A611.y.26
Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr, or i-Pr)-phosphoramidates .. 1C355.a.2.c
Diamond cutting tool inserts, single point 2B998.b
Diamond film substrate development/production technology 3E003.d
Diaphragms, made from fluoroelastomers 1A001.c
Diaphragm valves 2B350.g
Dibromotetrafluoroethane based damping or flotation fluids 1C006.c.1
Die bonder, stored program controlled 3B991.b.3.a
Diesel engines for submarines 8A620.d
Diesel engines, nonmagnetic 8A609.b
Diesel engines (air-cooled) and engine blocks for amored vehicles 0A606.c
Dies, bellows-forming 2B228.c
Diesel engines, n.e.s. 9A990
Diesel cycle engine, air independent 8A002.j
Diethyl ethylphosphonate 1C350.b.3
Diethyl 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

Description **ECCN Citation**

Digital computers, vector processors 4A003
Digital computer electronic assemblies, parallel processing 4A003.c
Digital computer systems 4A004
Digital computer systems 4A003.c
Digital computer systems 4A003.b
Digital computer systems 4A001
Digital coprocessors ..... 3A001.a.3 Note
Digital differential analyzer, ruggedized 4A101
Digital electronic control software for propulsion systems, aerospace test facilities or air breathing aero-engine test facilities 9D003, 9D619
Digital exchanges, telecommunication 5A991.c
Digital instrumentation data recorders 3A002.a.6
Digital signal processors 4A003
Digital time delay generators 3A999.e1
Digital-to-analog converter integrated circuits (DACs) 3A001.a.5
Digitally controlled radio receivers 5A001.b.5
Digitizers, waveform 3A002a.5
Dimensional inspection or measuring systems or equipment not controlled by 2B006 ..... 2B996
Dimensional inspection machines 2B206
Dimensional inspection equipment/systems 2B006.a
Dimensional inspection equipment/systems 2B006.c
Dimensional measuring equipment, instruments/systems 2B006.b
Dimethyl ethylphosphonate 1C350.b.10
Dimethyl methylphosphonate 1C350.b.11
Dimethyl phosphite 1C350.c.2
Dimethylamine 1C350.d.5
Dimethylamine hydrochloride 1C350.d.6
Dinitrogen tetroxide () 1C111.a.3.b
Dinitrogen trioxide 1C111.a.3.a
Dinitrogen pentoxide 1C111.a.3.c
2,2' Dinitropropanol 1C018
Diodes, laser 6A005.d.1
Diortho tolyl-urethane 1C018.g
Diphenyl urethane 1C018.f
Direct view imaging equipment 6A002.c
Direct-acting hydraulic pressing technology for metal working 2E003.b.2.c
Direct Digital Synthesizer (DDS) integrated circuits 3A001.a.13
Direction finding equipment & components, surveillance 5A001.e

Direction finding equipment, parts & components, navigation, not controlled under 7A003 or 7A103 ..... 7A994

Description **ECCN Citation**

Direction finding systems, equipment & components, navigation (inertial) 7A003
Direction finding systems, equipment & components, navigation, not controlled under 7A003 ..... 7A103
Directional solidification casting control software 9D004.c
Directional solidification casting equipment 9B001.a, 9B619.a
Discharge type arms 0A985
Discrete microwave transistors 3A611.d
Discrete microwave transistor technology 3E611.b.4
Disk drive (magnetic hard) development or production technology 4E993.c
Display, 3D (software for) 7D004.g
Disruptors 1A006.b
Dissolvers, for nuclear fuel 0B006.b
Distillation columns 2B350.e
Distillation columns, hydrogen-cryogenic 1B228
Distillation towers, packings 1A226
Dive computers 8A992.j
Diver deterrent acoustic systems 8A002.r
DNAN (2,4-dinitroanisole) (CAS 119-27-7) ..... Annex to Cat 1 “List of Explosives” 44
Dobrava-Belgrade virus 1C351.a.11
Doppler laser interferometers (DLIs) 6A225
Double seal valves 2B350.g
Drilling equipment 2B999.h
Drilling machines, deep-hole 2B001.f
Drone (military) production facilities 9B610.c
Dry etching equipment, anisotropic plasma 3B001.c
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.12
EB-PVD (Electron beam physical vapor deposition) equipment 2B005.c
Ebola virus 1C351.a.13
Eddy current test equipment for nuclear reactors 2A291.d
EDMs, non-wire feed types 2B001.d
EDMs, wire feed type 2B991d.1
Ejection seat mounted survival aids for military aircraft 9A610.y.6
Electric cattle prods 0A985
Electric detonators, explosive 3A232a
Electric fans 3A611.y.2

Description **ECCN Citation**

Electric propulsion engines....8A002o.2.b
Electrical contacts....3A611.y.19
Electrical discharge machines, non wire feed (CNC)....2B001.d
Electrical discharge machines (EDM) of the wire feed type....2B991.d.2
Electrical guide pins....3A611.y.20
Electrically driven explosive detonators....3A232.a
Electro-optic materials....6C004
Electro-optical device manufacturing equipment and systems....3B991.b Note
Electro-optical integrated circuits....3A001.a.6
Electrolysis cells, amalgam lithium isotope separation....1B233.b.3
Electrolytic cells for fluorine production....1B225
Electrolytic cells for fluorine production not controlled by 1B225....1B999.a
Electromagnetic interference (EMI) protection technology....7E102
Electromagnetic isotope separators....1B226
Electromagnetic pulse (EMP) protection, detectors....6A102
Electromagnetic pulse (EMP) protection technology, avionics....7E102
Electromagnetic radiation sensors, optical fiber....6A002.d.3.a
Electromagnetic signature reduction devices....1A101
Electromagnetic signature reduction materials....1C101
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

Description **ECCN Citation**

Electronic components 3A201
Electronic components 3A101
Electronic components (military) 3A611
Electronic components and materials inspection or testing equipment, components and accessories 3B992
Electronic components and materials manufacturing equipment 3B991
Electronic components and materials manufacturing equipment, not controlled by 3B001 ..... 3C001
Electronic computers 4A994.a
Electronic computers & related equipment ..... 4A001, 4A003, 4A004 or 4A994
Electronic computers & related equipment 4A101
Electronic computers & related equipment 4A102
Electronic cooling fluids 1C006.d
Electronic framing cameras 6A203.b.2
Electron sensing devices 6A002.a.2.a.2.b
Electronic streak cameras & streak tubes 6A003.a.3
Electronic streak cameras & streak tubes 6A203.b.1
Electrical connectors 3A611.y.1
Electronically steerable antennae, phased array 5A001.d
Electroplating equipment 2B999.i
EMP/EMI protection technology, avionic systems 7E102
Encoders, rotary input shaft type 3A001.f
Encryption equipment, assemblies & components 5A002
Encryption hardware components ..... Cat 5 pt 2 Note 3 (b)
Encryption software 5D002
End effectors, robot 2B207
End effectors, robot 2B007
Energetic ionic materials ..... Annex to Cat 1 List of Explosives 48
Energy storage capacitors 3A001.e.2
Engines, diesel n.e.s. 9A990
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.18
Erbium oxide (erbia) (Er_2O_3) made/coated crucibles 2A225.a.4

Description	ECCN Citation
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)	1C350.c.12
Evaporators for concentrated lithium hydroxide solution	1B233.b.4
Exchange columns, liquid-liquid for lithium amalgams	1B233.b.1
Exchanges, telecommunication	5A991.c
Excimer lasers	6A005.d.4
Execution of human beings, equipment for	0A981
Expert systems - integration systems technology	2E003.e
Exploding foil initiators (EFI)	1A007
Exploding bridge (EB) detonators	1A007
Exploding bridge wire (EBW) detonators	1A007
Explosive, high	1C239
Explosive/munitions environment handling robots	2B007.b
Explosive detection	1A004.d
Explosive detonator firing sets	1A007.a
Explosives or detonator detection equipment, software, or technology	2A983, 2D983 or 2E983
Explosive detonators, electric	1A007.b or 3A232
Explosive devices , charges, components - commercial	1A008 or 1C992.l
Explosives (military) production equipment	1B018.a
Explosives (military) in charges for civil applications	1A008 or 1C608
FADEC (Full authority digital electronic engine control) software	9D003, 9D619
FADEC (Full authority digital electronic engine control) technology	9E003.h, 9E619
Fan blade (hollow) technology	9E003, 9E619
Fans, electric	3A611.y.2
Fast Fourier Transform (FFT) processors	3A001.a.12
Fast switching function modules or assemblies	3A228.c
Fast fourier transform processors, acoustic signal processing	6A001.a.2.c
Fault tolerance FADEC software	9D003, 9E619
Fermenters (biological processing), and components designed for such fermenters	2B352.b
Fertilizers containing ammonium nitrate	1C997
Fiber, equipment for the production of	1B999

Description	ECCN Citation
Fiber and filamentary material	1C010
Fiber and filamentary material	1C210
Fiber converting equipment, polymeric to carbon or silicon carbon	1B001.d.1
Fiber laser components	6A005.e.3
Fiber optic cable	5A001.c
Fiber optic gyro coil winding machines	7B003
Fiber optic magnetometers	6A006.c
Fiber optic hull penetrators/connectors	8A002.c
Fiber optic wave division multiplex equipment	5A991.b.5
Fiber preforms, metal coated, for fiber prepregs in 9C110	9C110
Fiber prepregs, resin impregnated, for items in 9A110	9C110
Fiber, rare-earth metal doped double-clad	6C005.b
Fiber reinforcement, production equipment	1B001.d
Fiber straining equipment	1B001.d.1
Fiber surface treatment equipment	1B101.d
Fibrous or filamentary materials	1C210
Fibrous or filamentary materials	1C010
Fibrous or filamentary materials, carbon	1A002.b.1
Fibrous and filamentary materials for use in composite structures	1C990
Fibrous or filamentary material production equipment	1B001
Fibrous or filamentary material production equipment	1B101.c
Fibrous and filamentary materials development, production or use technology	1E994
Field programmable gate arrays (FPGA)	3A001.a.7, 3A991.d
Field programmable interconnects (FPIC)	3A001.a.7, 3A991.d
Field programmable logic arrays (FPLA)	3A001.a.7, 3A991.d
Field programmable logic devices (FPLD)	3A001.a.7, 3A991.d
Filament winding machines	1B001.a
Filament winding machines	1B101.a
Filament winding machines	1B201
Filling equipment, remotely controlled	2B350.f
Film type integrated circuits	3A001.a Note 2
Filter canisters	1A004 or 1A995
Filters, tunable band-pass	3A001.b.5
Filters for clean rooms	3B991.b.4
Filters (fuel or oil) for gas turbine engines	9A619.y.4
Filters (hydraulic, fuel, oil, air) for ground vehicles	0A606.y.8
Filters, optical	6A994.a
Filters for hydraulic/oil/fuel systems in military aircraft	9A610.y.8
Filters for pneumatic/hydraulic/oil/fuel systems in submersible vessels	8A620.y.2
Filters for pneumatic/hydraulic/oil/fuel systems in surface vessels of war	8A609.y.2
Finger barriers	3A611.y.31
Finger cuffs	0A983

Description **ECCN Citation**

Fingerprint analyzers, cameras and equipment....3A981
Fingerprint equipment, computers for....4A980
Fingerprinting powders, dyes, inks....1A985
Finishing machines, gear....2B003
Finishing machines, gear....2B003
Fins....8A992.i
Fire extinguishers for military aircraft....9A610.y.26
Fire detectors for military aircraft....9A610.y.27
Firearms, muzzle-loading (black powder)....0A018.c
Firing sets, for multiple detonators of 3A232....1A007 or 3A229.a
Fireworks displays....1C608.j or 1C992.k
Fissile materials, special or other....0C002
Flanges, vacuum....2B999.k
Flares, non-irritant smoke....1A984
Flash discharge X-ray generators....3A201.c
Flash X-ray machines....3A999.c
Flexible rotor centrifugal balancing machines....2B229.a
Flexible sensors for hydrophones....6A001.a.2.a.1
Flexible nozzles, thrust vector control sub-system....9A106.c
Flexible waveguide....3A991.h
Flight management system integration technology....7E104
Flight control servo valves....9A106.e
Flight control systems for missiles....7A116
Flight control systems for military UAVs or drones....9A610.w
Flight control systems - software....7D003.e and 7D004
Flight instrument systems, integrated....7A103.b
Flight instrument trainer, military....9A610.t
Flight control system development technology....7E004
Flight control actuator technology....7E004.a.5
Flip-guards....3A611.y.32
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

Description **ECCN Citation**

Fluorine 1C999.f
Fluorine production (electrolytic cells) 1B225
Fluorocarbon electronic cooling fluids 1C006.d
Fluorophosphate glass 6C004.e
Flurocarbon electronic cooling fluids 1C006.d
Fluxgate magnetometer technology 6E003.f
Fly cutting machines ..... 2B001.b.4 or 2B992.b
Fly-by-light flight control system software 7D003.e, 7D004.c
Fly-by-light or fly-by-wire technology 7E004.b
Fly-by-wire flight control system software 7D003.e, 7D004.c
Fly-by-wire systems for military UAVs or drones 9A610.w
Fly-by-wire systems for missiles 7A116
Fly-by-wire control system technology 7E004.b
Foam, syntactic for underwater use (in any stage of manufacture) ..... 8C001 or 8A002.a.4
Foam mirror structures, lightweight 6A004.a.3
Focal plane arrays, direct view ..... 6A002.c.2 or c.3
Focal plane arrays, linear & 2D 6A002.a.3
Focal plane arrays, non-space qualified 6A002.a.3.g
Focal plane arrays, space qualified. 6A002.a.1.d
Focal-plane array performance determining equipment 3B992.b.4.c
Fogging or spraying systems, specially designed for fitting to aircraft, "lighter than air vehicles," or "UAVs" 2B352.h.1
Foot & mouth disease virus 1C351.a.14
Fording (water) kits for ground vehicles 0A606.e
FPGA's (Field programmable gate arrays) 3A001.a.7
FPLA's (Field programmable logic arrays) 3A001.a.8
Fracking fluid 0A998.b.2
Framing cameras, electronic type 6A203.b.2
Framing cameras, mechanical 6A203.a.1
Framing tubes & solid state imaging devices 6A203.b.3
Framing cameras, electronic type 6A003.a.4
Francisella tularensis 1C351.c.14
Free electron laser magnet wiggler manufacturing or inspection equipment 6B995.a.1
Free electron laser photo injector manufacturing or inspection equipment 6B995.a.2
Freeze drying equipment, steam 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

Description **ECCN Citation**

Frequency changers (converters or inverters) 3A225
Frequency changers (a.k.a. converters or inverters) and generators, “software” “specially designed” for the “use” of 3D201
Frequency changers (a.k.a. converters or inverters) and generators, “software” “specially designed” to enhance or release the performance characteristics of equipment to meet or exceed the performance characteristics in ECCN 3A225 .....3D202
Frequency extenders, mixers/converters.....3A001.b.7
Frequency network analyzers 3A002.e
Frequency standards, atomic.....3A002.g
Frequency synthesized signal generators.....3A002.d
Frequency synthesizer, electronic assemblies.....3A001.b.11
Fuel oils.....1C980
Fuel elements, (irradiated) reprocessing plant & equipment.....0B006
Fuel element chopping or shredding machines.....0B006.a
Fuel cell air independent power systems 8A002.j
Fuel lines and hoses for gas turbine engines.....9A619.y.3
Fuel filters for gas turbine engines.....9A619.y.4
Full Authority Digital Electronic Engine Control software.....9D003, 9D619
Functional (truth table) testing equipment, for integrated circuits 3B002.b
Fungi, human and zoonotic pathogens and “toxins” 1C351.e
Fungi, plant pathogens.....1C354.b
Furnaces 2B226
Furnaces, Chemical Vapor Deposition (CVD), other than those controlled by 2B005.a, designed or modified for the densification of carbon-carbon composites 2B105
Furnaces 2B227
Fused silica glass.....6C004.e
GaAs photocathodes 6A002.a.2.c.3
GaInAs photocathodes 6A002.a.2.c.3
Galleys (military aircraft) 9A610.y.9
Galleys (submersible vessels).....8A620.y.3
Galleys (surface vessels of war) 8A609.y.3
Gallium organo-metallic compounds.....3C003
Gallium III/V compound substrates, hetero-epitaxial grown-multi-layer 3C001.c
Gallium nitride (GaN) “substrates”, ingots, boules, or other preforms of those materials.....3C005
Gallium selenide 6C004.b.5
Gallows 0A981
Gas centrifuge rotor assembly equipment.....2B228.a
Gas krytron tubes 3A228.a
Gas or full face masks..... 1A004 or 1A995
Gas centrifuge rotor balancing equipment.....2B229
Gas, manufactured, synthetic or natural liquid produced or derived

Description **ECCN Citation**

from Naval Petroleum Reserves 1C984
Gas discharge & ion lasers 6A005.a
Gas and oil exploration equipment, software, and data 0A998
Gas lasers 6A005.a
Gas monitoring systems, toxic 2B351
Gas turbine aeroengines, civil non-certified/supersonic 9A001
Gas turbine blade, manufacturing or measuring equipment 9B001, 9B619
Gas turbine blade technology 9E003.a, 9E619
Gas turbine blades, vanes or tip shroud casting equipment, tooling or fixtures 9B991, 9B619
Gas turbine brush seal production/test equipment 9B003, 9B619
Gas turbine components, solid state joining equipment 9B004, 9B619
Gas turbine engine development systems/instrumentation 9B002, 9B619
Gas turbine engine development control systems or instrumentation 9B002, 9B619
Gas turbine engine propulsion systems assemblies/components 9A003, 9A619
Gas turbine engine technology 9E003, 9E619
Gas turbine engine development and use software 9D004, 9D619
Gas turbine engine monitoring system software 9D619.b.11
Gas turbine engines, parts and components, not controlled by 9A001 or 9A101 ..... 9A991, 9A619
Gas turbine engines & assemblies/components, marine 9A002
Gas turbine test/flow modeling software 9D004.a, 9D619
Gas turbine (aero engine) test software 9D004.b, 9D619
Gaskets, made from fluoroelastomers 1A001.c
Gaskets, aircraft/aerospace use 1A001.a, 9A610.x
Gaskets, ground vehicles 0A606.y.9
Gaskets, vacuum 2B999.k
Gate silicon intensifier target (SIT) videcon tubes 6A203.b.3.b
Gateways & bridges 5A991.b.4.b
Gauges, hydraulic, pneumatic, fuel and lubrication 3A611.y.35
Gauges and indicators (analog cockpit) 9A610.y.2
Gauges and indicators (submersible vessels) 8A620.y.10
Gauges and indicators (surface vessels of war) 8A609.y.10
GDMS (Glow discharge mass spectrometers) 3A233.b
Gear honing, shaving, grinding, cutting, and finishing machines 2B003
Gearmaking and/or finishing machinery not controlled by 2B003 ..... 2B993
Gel propellant control systems 9A106.d
Generator systems, neutron 3A231
Generators and other equipment for nuclear plants 2A290
Generators, digital time delay 3A999.e1
Generators, for ground vehicles 0A606.y.2
Generators, field – “specially designed for military use 0A617.y.4
Generators, high-current pulse for detonators 3A229
Generators, high-speed pulse 3A230

Description **ECCN Citation**

Generators, marx 3A999.c
Generators, portable electric 2A994
Genetically-modified microorganisms 1C353
Germanium, hetero-epitaxial grown multi-layer substrates 3C001.b
Gimbals, optical control 6A004.d.3
Glass fiber or filamentary materials 1C210.b
Glass fiber, for optical communications 5A001.c
Glass matrix reinforced composite materials 1C007.f
Glass preforms, for optical fiber production 5C991
Glass Windows, nuclear radiation shielding 1A227
Glass, high homogeneity 6C004.e.3
Global Navigation Satellite Systems (GNSS) ranging signals decryption software 7D005
Global positioning system (GPS) equipment & components ..... 7A005, 7A105 or 7A994
Glove boxes 0B999
Gloves, protective ..... 1A004 or 1A995
Glow discharge mass spectrometers (GDMS) 3A233.b
GNSS (Global Navigation Satellite Systems) ranging signals decryption software 7D005
Goat pox virus 1C351.a.15
Gold (Au) metal vapor lasers 6A005.b
GPS equipment, other than those of 7A005 ..... 7A105
GPS (Global positioning system) equipment/components 7A005
Gradiometers & components, gravity 6A007.c
Gradiometers & components, gravity 6A107
Gradiometers & components, magnetic 6A006
Graphite, fine grain recrystallized bulk 1C107.a
Graphite, bulk 1C107.a
Graphite, pyrolytic or fibrous reinforced 1C107.b
Graphite, nuclear-grade, not intended for use in a nuclear reactor 1C298
Gravimeters (Gravity meters) & components, gravity 6A007.a
Gravimeters (Gravity meters) & components, gravity 6A007.b
Gravimeters (Gravity meters) & components, gravity 6A107
Gravity meter (gravimeters) products & calibration equipment 6B007
Gravity meters 6A997
Gravity gradiometers & components 6A007.c
Gravity meters (gravimeters) & components 6A007.b
Gravity meters (gravimeters) & components 6A007.a
Gravity meters (gravimeters) software 6D003.g
Gravity gradiometers & components 6A107
Gravity meters (gravimeters) & components 6A107
Gravity gradiometer software 6D003.g
Greases 1C980
Grenades, non-irritant smoke 1A984

Description **ECCN Citation**

Grinding machines (CNC) 2B991.d.1
Grinding machines, gear 2B003
Grinding machines 2B201.b
Grinding machines 2B001.c
Ground fault circuit interrupters 3A611.y.18
Ground vehicles & related commodities 0A606
Grounding straps 3A611.y.25
Guanarito virus 1C351.a.16
Guanidine nitrate ..... 1C011.c or 1C608.m
GUDN (Guanylurea dinitramide) FOX-12
(CAS 217464-38-5) ..... Annex to Cat 1 List of Explosives 46
Guidance sets usable in missiles 7A117
Guillotines 0A981
Gun barrel rifling and broaching machines and tools therefor ..... 2B018.e or f
Gun barrel trepanning machines 2B018.g
Gun boring and turning machines 2B018.h
Gun honing machines 2B018.i
Gun, immobilization 0A985
Gun jump screw lathes 2B018.j
Gun rifling machines 2B018.k
Gun, shotgun 0A984
Gun straightening presses 2B018.l
Gun, stun 0A985
Gyro dynamic balance stations ..... 7B003 or 7B101
Gyro tuning test stations ..... 7B003 or 7B101
Gyro run-in/motor test stations ..... 7B003 or 7B101
Gyro evacuation/fill stations ..... 7B003 or 7B101
Gyro-astro compasses & devices 7A104
Gyros & gyro components 7A102
Gyros 7A002
Gyroscope production/manufacturing/test equipment 7B003
Hafnium oxide (hafnia) (HfO_2) made/coated crucibles 2A225.a.5
Hafnium metal, alloys & compounds 1C231
Hafnium fluoride (HfF_4) glass 6C004.e
Hair type absorbers ..... 1C001.a Note 1.a
Handcuffs 0A982
Handling equipment for propellants and their constituents 1B115
Handling systems, semiconductor wafers 3B001.e
Hantaan virus 1C351a.17
Harbor entrance detection devices for submersible vessels 8A620.c
Hard surface coated substrates 3B991.b.2.b.1
Harnesses, complete 9A992, 9A610.h

Description **ECCN Citation**

Heading sensors, towed hydrophones 6A001.a.2.b.4
Heading sensors 6A001.a.2.d
Heat exchangers for use in nuclear reactors 2A290.a
Heat exchangers & condensers 2B350.d
Heat pipe cooled mirrors 6A005.e.1
Heat sinks 3A611.y.3
Helicopter system development technology 7E004.c
Helicopter power transfer system technology 9E003.d, 9E610
Helium, enriched 1C232
Helium refrigeration units 1B231.b.1
Helium 1C980
Helium-3 ..... 1C232
Helix Tubes 3A001.b.1.a.4
Helix traveling wave tubes (TWTs) technology 3E611.b.1
Helmet, military ..... 1A613.c and .y.1
Helminthosporium oryzae (Cochliobolus miyabeanus) 1C354.b.2
Hemishell dimensional inspection equipment/systems 2B006.c
Hendra virus (Equine morbillivirus) 1C351.a.18
Herpes virus (Aujeszky's disease) 1C351.a.19
Hetero-epitaxial grown multi-layer substrates 3C001
Hetero-structure semiconductor technology 3E003.b
High energy storage capacitors 3A001.e.2
High explosive containment vessels, chambers, containers, and similar containment devices not enumerated under ECCN 1B608 or in USML Category IV or V 1B234
High power pulse shaping networks 3A999.c
High voltage capacitors 3A999.c
High voltage triggers 3A999.c
High-speed pulse generators 3A230
High-speed cameras 6A003
High-speed cameras and imaging devices and "components" therefore not controlled by ECCN 6A003 ..... 6A203
High-speed cameras and imaging devices and "components" therefore, "software" "specially designed" to enhance or release the performance characteristics of devices to meet or exceed the performance characteristics described in ECCN 6A203 ..... 6D201
High-vacuum service equipment 2B999.k
High-velocity gun systems 2B232
Hinges for ground vehicles 0A606.y.11
HIPS (Hot Isostatic Presses) 2B204
HIPS (Hot Isostatic Presses) 2B004
HIPS (Hot Isostatic Presses) 2B104
Hog cholera virus (swine fever virus) 1C351.a.20
Holding or storage vessels, critically safe & resistant to nitric acid 0B006.e

Description **ECCN Citation**

Hollow cylinder centrifugal balancing machines 2B229.b
Holographic sights 0A987
Honing machines, gear 2B003
Honing machines, gear 2B003
Hopping code generation capability, equipment with 5A002.a.5
Horses by sea 0A980
Hoses (brake) for ground vehicles 0A606.y.1
Hoses (cooling systems) for ground vehicles 0A606.v.7
Hoses (fuel) for gas turbine engines 9A619.y.3
Hoses (fuel and hydraulic) for military aircraft 9A610.y.10
Hoses (hydraulic system) for ground vehicles 0A606.y.10
Hoses for pneumatic/hydraulic/oil/fuel systems in surface vessels of war 8A609.y.2
Hoses (pneumatic) for ground vehicles 0A606.y.13
Hot isostatic presses (HIPS) 2B204
Hot isostatic densification technology/data, Al/Ti/Superalloys 2E003.b.2.d
Hot isostatic presses (HIPS) 2B004
Hot cap sealers (semi-automatic or automatic) for ceramic microcircuit 3B991.b.3.c
Hot cell manipulators 2B225
Hot cells 0B999
Hot isostatic presses (HIPS) 2B104
HT-2 toxin 1C351.d.8
HTPB (Hydroxy-terminated polybutadiene) propellant additive 1C111.b.2
Hull penetrators/connectors, fiber optic 8A002.c
Human pathogens and “toxins” 1C351
Hybrid integrated circuits ..... 3A001.a Note 2
Hybrid rocket propulsion systems 9A009
Hybrid computers & components 4A001
Hybrid computers and electronic assemblies 4A994.k
Hybrid computers 4A102
Hybrid computer electronic systems/electronic assemblies 4A001.a
Hybrid rocket motors and components 9A109
Hydraulic fluids 1C006.a
Hydraulic fluids 1C980
Hydraulic fluids 1C996
Hydraulic forming equipment 2B999.b
Hydraulic fracturing items 0A998.b
Hydraulic fracturing ‘proppant,’ ‘fracking fluid,’ and chemical additives therefor 0A998.b.2
Hydraulic pressing, direct-acting technology 2E003.b.1.c
Hydraulic stretch-forming machines and dies technology 2E003.c
Hydrazine 1C111.d
Hydrides of Antimony, arsenic & phosphorus 3C004
Hydrocarbon oils, synthetic 1C996

Description **ECCN Citation**

Hydroclave temperature, pressure or atmosphere regulation technology 1E103
Hydrodynamic calculations/modeling, software for 0D999.c
Hydrofoil vessel technology 8E002.c.3
Hydrogen 1C980
Hydrogen cyanide (74-90-8) 1C355.b.1.c, 1E355.b.3
Hydrogen fluoride 1C350.d.7
Hydrogen fluoride (HF) lasers 6A005.d.5.a
Hydrogen isotope storage & purification systems 1B231.b.2
Hydrogen refrigeration units 1B231.b.1
Hydrogen sulphide-water exchange tray columns 1B229
Hydrogen-cryogenic distillation columns 1B228
Hydrophone arrays, towed acoustic 6A001.a.2.b
Hydrophone arrays (towed) acoustic data processing source code 6D003.a.2
Hydrophones 6A001.a.2.a
3-Hydroxy-1-methylpiperidine 1C350.d.8
Hydroxy-terminated polybutadiene (HTPB) 1C111.b.2
ICP/MS (Inductively coupled plasma mass spectrometers) 3A233.a
III/V and II/VI semiconductor materials purifying or processing equipment 3B991.b.1.b
III/V compound substrates, gallium or indium 3C001.c
Identification plates and nameplates 3A611.y.33
Identification plates for gas turbine engines 9A619.y.7
Igniters 1C608.e or1C992.f
Image enhancement, digital equipment 4A003
Image enhancement equipment 4A994.f
Imaging devices 6A002
Imaging device manufacturing equipment and systems ..... 3B991.b Note
Image intensifier tubes & components 6A002.a.2
Image intensifier tubes, direct view ..... 6A002.c.1 or c.3
Image transfer equipment 3B991.b.2
Imaging cameras 6A003.b
Imaging cameras with focal plane arrays of 6A002.a.3 ..... 6A003.b.4
Imaging cameras with image intensifiers of 6A002a.2.a 6A003.b.3
Imaging cameras incorporating solid-state detectors specified by 6A002.a.1 ..... 6A003.b.5
Imaging devices 6A203.b.3
Imaging equipment, visible & infrared 6A002.c
Imaging sensors, multispectral and monospectral 6A002.b
Immobilization guns and projectiles 0A985
Immunotoxins and vaccines 1C991
Impregnated cathodes for electronic tubes 3A001.b.1.c
Imprint lithography equipment 3B001.f.2
Improvised explosive devices (specially designed or modified disposal equipment , components, and accessories) 1A006

Description **ECCN Citation**

Improvised Explosive Devices (IED) activation devices 5A001.h
IMU platform balance fixture ..... 7B003 or 7B101
IMU platform tester ..... 7B003 or 7B101
IMU stable element handling fixture ..... 7B003 or 7B101
Incinerators designed to destroy the chemicals controlled by 1C350 ..... 2B350.j
Independent (air) power systems underwater 8A002.j
Indicator dials 3A611.y.26
Indicator heads designed/modified for use with balancing machines in 2B119.a 2B119.b
Indium organo-metallic compounds 3C003
Indium III/V compounds substrates 3C001.c
Induction coil magnetometers 6A006.c
Induction furnace, controlled environment inert gas 2B226
Induction furnace, vacuum 2B226
Inductively coupled plasma mass spectrometers (ICP/MS) 3A233.a
Industrial process control hardware/systems designed for power industries 1B999.c
Industrial process control hardware/systems designed for power industries controlled by 1B999, software for 1D999.a
Inert gas environment induction furnaces 2B226
Inertial Measurement Equipment 7A003.c
Inertial measurement equipment 7A003
Inertial measurement unit tester (IMU module) ..... 7A003, 7B003 or 7B101
Inertial navigation, systems/equipment/components 7A103.a
Inertial navigation, systems/equipment/components 7A003
Inertial navigation systems not controlled by 7A003 or 7A103 ..... 7A994
Inertial navigation system software, source code 7D002
Inertial reference Systems (IRS) 7A003.c
Inertial sensors, optical fiber 6A002.d.3.a
Inflatable boats and components 8A992.f
Inflation cartridges 8A992.i
Influenza virus 1C351.b.1
Information security equipment software 5D992
Information security technology support software 5D002.b
Information security equipment and components, n.e.s. 5A992
Information security software 5D002
Information security systems/equipment/devices/components 5A002
Information security technology 5E992
Information security - test, inspection, and production equipment 5B002
Infrared detectors, industrial space qualified 6A002.a.1
Infrared sensors, industrial 6A002.c
Infrared viewers (police model) 9A980
Inhibited red fuming nitric acid (IRFNA) 1C111.a.3.e
Initiation systems, single or multipoint (electric) 3A232.b

Description **ECCN Citation**

Injector (free electron laser photo) manufacturing or inspection equipment 6B995.a.2
Inorganic overlay coating application technology 2E003.f
Inorganic chemicals listed in Supp. No. 1 to part 754 produced or derived
from the Naval Petroleum Reserves 1C980
Inorganic fibers & filamentary materials 1C010.c
Inspection equipment (linear-angular for hemishells) 2B006.c
Inspection equipment for composite materials 1B001.f
Inspection machines (dimensional), devices or systems, other than those in 2B006 ..... 2B206
Instruction generators for machine tools - technology 2E003.d
Instrumentation for gas turbine development 9B002, 9B619
Instrumentation for wind tunnels 9B005
Instrumentation systems, inertial navigation 7A003
Instrumentation cameras 6A003.a
Integrated circuit assembly equipment 3B991.b.3
Integrated circuit, Direct Digital Synthesizer (DDS) 3A001.a.13
Integrated circuit test equipment, microwave 3B002.c
Integrated circuit test equipment, for (truth table) testing 3B002.b
Integrated circuit, masks 3B001.g
Integrated circuits, compound semiconductor 3A001.a.11
Integrated circuits, custom 3A001.a.10
Integrated circuits, general purpose 3A001.a
Integrated circuits, microwave 3A001.b.2
Integrated circuits, radiation hardened 3A001.a.1
Integrated circuits and assemblies manufacturing equipment and systems 3B991.b
Integrated circuit and assembly testing equipment 3B992.b.4.b
Integrated circuit computer-aided-design (CAD) software 3D003
Integrated circuits and assemblies inspection or testing equipment and systems 3B992.b
Integrated flight instrument systems/components 7A103.b
Integrated Navigation Systems, designed or modified for use in missiles 7A103.c
Integrated Services Digital Network technology 5E991
Integrated system source code, avionic/mission systems 7D003.c
Integration software for expert systems 2E003.e
Integration technology for flight management systems 7E104
Intercepting systems and equipment, communications 5A001.f
Intercepting devices, communications 5A980
Interconnect equipment (Computer) 4A003.g
Interconnection equipment 3B991.b.1.l
Interferometers, velocity (VISARs) 6A225
Interlacing machines 1B001.c
Intermediate amplifier equipment ..... 5A991.b Note a.3
International Space Station parts components accessories attachements 9A004.w-y
Interrupters, ground fault circuit 3A611.y.18

Description **ECCN Citation**

Interstages for missiles....9A117
Intrinsic magnetic gradiometers....6A006.c.3
Inverse synthetic aperture radar (ISAR)....6A008.d
Inverters (Frequency changers or converters).... 3A225
Ion beam equipment for mask making/semiconductor devices....3B001.f.2
Ion beam equipment for projection image transfer....3B991.b.2.g
Ion beam sensitive resist materials....3C002.b
Ion beam system, manufacturing, repairing, physical layout analysis and testing of masks or semiconductor devices....3B992.b.6
Ion implantation equipment....3B001.b
Ion implantation equipment....3B991.b.1.g
Ion implantation production equipment....2B005.b
Ion lasers....6A005.a
Ion or laser beam lithography mask or reticle fabrication equipment....3B991.b.2.d.2
Ion plating production equipment....2B005.g
Ion-enhanced diffusion equipment....3B991.b.1.g
Ion-exchange processing equipment....0B006.c
ISDN development/production technology....5E991
Isolated live cultures.... see Cultures
Isolators capable of use with biological agents....2B352.f.2
Isostatic presses, hot....2B104
Isostatic presses, hot....2B204
Isostatic presses, hot....2B004
Isostatic presses, n.e.s.....2B999.a
Isotope separators, electromagnetic....1B226
Jamming equipment....5A001.f.3
Japanese encephalitis virus....1C351.a.21
Jet engine lubricating oil....1C980
Jet vane, thrust vector control sub-systems....9A106.c
Jet engines/components, pulse....9A111
Jigs and fixtures for use in the manufacture of firearms, ordnance, and other stores and appliances for land, sea, or aerial warfare....2B018.n
Joule-Thomson self-regulating minicoolers....6A002.d.2.b.6
Joy sticks....3A611.y.4
Jumpers, electrical....3A611.y.24
Junin virus....1C351.a.22
Kerr or Pocket cells, electro-optical shuttering....6A203.b.3.c
Kick motors....9A004
Knobs....3A611.y.34
Krytron tubes, gas....3A228.a
Kyasanur Forest virus....1C351.a.23
Laboratories (mobile), crime science....9A980

Description **ECCN Citation**

Laguna Negra virus 1C351.a.24
Laminate or composite development software 1D002
Laminates & composite structures, organic metal or carbon 1A002
Laminates, rockets/propulsion systems/space vehicles 9A110
Land inertial navigation equipment 7A003
Land-based gravity meters production equipment 6B007
Laser acoustic detection equipment 6A005.a
Laser based linear position feedback units 2B008.a
Laser based measuring instruments 2B006.b.1.c
Laser beam cutting machines (CNC) 2B001.e.1.c
Laser beam equipment for mask making/semiconductor devices 3B001.f.2
Laser beam lithography mask or reticle fabrication equipment 3B991.b.2.d.2
Laser beam systems, for probing semiconductor devices 3B992.b.5
Laser communication technique technology 5E001.b.2
Laser diagnostic equipment 6A005.f.2
Laser diodes 6A005.d.1
Laser diodes designed for telecommunication ..... 5A991.b Note b.4
Laser, fiber (components) 6A005.e.3
Laser gyro mirror characterization equipment 7B102
Laser microphone 6A005.g
Laser pointing devices for use on firearms 0A987
Laser radar altimeters 7A106
Laser radar or Light Detection & Ranging (LIDAR) equipment 6A008.j
Laser radar systems 6A108
Laser ring gyro test equipment 7B002
Laser, technology 6E003.e
Laser welding machines 2B999.c
Lasers 6A005
Lasers 6A205
Lasers 6A995
Lasers for direct write on wafers 3B991.b.2.h
Lassa fever virus 1C351.a.25
Lathes (CNC) 2B001.a
Latches for ground vehicles 0A606.y.11
Launch support equipment 9A115, 9A610.f
Launch vehicle components/structures 9A010, 9A610.x
Lavatories for military aircraft 9A610.y.11
Lavatories for submersible vessels 8A620.y.4
Lavatories for surface vessels of war 8A609.y.4
LAX-112 (3,6-diamino-1,2,4,5-tetrazine-1,4-dioxide) ..... Annex to Cat 1 List of Explosives 47.b
Leg irons 0A982
Lenses for radiation hardened TV cameras 6A203.c

Description **ECCN Citation**

Lidar equipment (Laser radar) 6A008.j
Life jackets 8A992.i
Life rafts for military aircraft 9A610.y.12
Light gas guns(Multistage) systems 2B232
Light systems, fuses, and components, for ground vehicles 0A606.y.12
Light systems, Stroboscopic 8A992.c
Light systems, underwater 8A002.g
Light systems, underwater 8A002.d.2
Lights, underwater 8A992.j
Lights, search ..... 0A617.y.1 and .y.2
Lightweight composite or foam mirror structures 6A004.a.3
Lightweight monolithic mirrors 6A004.a.2
Lightweight turbofan/turbojet engines 9A101, 9A619.a
Line terminating equipment ..... 5A991.b Note a.2
Linear voltage displacement transformer (LVDT) based instruments 2B006.b.1.b.1
Linear position feedback units or sensors 2B008.a
Linear measuring equipment/instruments 2B006.b.1
Linear focal plane arrays 6A002.a.3
Linear-angular inspection equipment for hemishells 2B006.c
Liquid oxidizers, various nitrous oxides 1C111.a.3
Liquid or water jet cutting machines (CNC) 2B001.e.1.a
Liquid lasers 6A005.c
Liquid propellant tanks 9A103
Liquid rocket propulsion systems & components 9A106
Liquid rocket propulsion systems & components 9A006
Liquid rocket propulsion systems 9A005
Liquid, slurry and gel propellant control systems 9A106.d
Liquid propellant rocket engines 9A105
Liquid-liquid exchange columns, for lithium amalgams 1B233.b.1
Lithium metal, alloys, compounds, mixtures, products or devices 1C233
Lithium isotope separation facilities, plant and equipment 1B233
Lithium amalgam electrolysis cells 1B233.b.3
Lithium amalgam pumps 1B233.b.2
Lithograph templates 3B001.i
Lithography equipment, imprint 3B001.f.2
Lithography equipment, mask making for semiconductor wafer-processing 3B001.f
Lithography mask or reticle fabrication equipment 3B991.b.2.d.2
Lithography software 3D003
Location & object detection systems or transmitting and receiving arrays, acoustic 6A001.a.1.b
Logic arrays, field programmable (FPLA) 3A001.a.8
Logic processors and assemblies 4A003

Description **ECCN Citation**

Louping ill virus 1C351.a.26
Low Light Level (LLL) camera software 6D003
Lubricating materials 1C006.b
Lubricating oil 1C980
Lujo virus 1C351.a.27
Lumpy skin disease virus 1C351.a.28
LVDT (Linear voltage displacement transformer) based instruments 2B006.b.1.b.1
Lymphocytic choriomeningitis virus 1C351.a.29
Lyssavirus (including rabies virus and all other members of the Lyssavirus genus) 1C351.a.41
Machine tools, E-beam 2B001.e.1.b
Machine tools, laser 2B001.e.1.c
Machine tools, numerically controlled 2B001
Machine tools, numerically controlled 2B201
Machine tools, numerically controlled and using a Magnetorheological finishing (MRF) process. 2B002
Machine tools, numerically controlled, optical finishing 2B002
Machine tools, water/other liquid jet 2B001.e.1.a
Machine tool assemblies, units or inserts 2B998
Machine tool components and assemblies for 2B006 & 2B007 equipment 2B008
Machine tool cutting tools 2B008
Machine tools for generating optical quality surfaces 2B992
Machine tools for grinding (CNC) 2B001.c
Machine tools for grinding (CNC) 2B201.b
Machines for milling (CNC) 2B001.b
Machines for milling (CNC) 2B201.a
Machine tools for turning, grinding, and milling 2B991.d.1
Machines for turning (CNC) 2B001.a
Machine tool instruction generators - development technology 2E003.d
Machine tool rotary position feedback units 2B008.b
Machine tool spindles 2B008.c
Machining centers (CNC) 2B201
Machining centers (CNC) 2B001
Machupo virus 1C351.a.30
Magnaporthe oryzae (Pyricularia oryzae) 1C354.b.6
Magnesium (high purity) 1C228
Magnesium alloy, powder or particulate form 1C002.b.1.e
Magnesium alloys 1C002.a.2.e
Magnesium, metal and alloys of 1C011.a
Magnesium oxide (MgO) made or coated crucibles 2A225.a.6
Magnesium metal particulate 1C111.a.2.a.4
Magnetic alloy strips 1C003.c

Description **ECCN Citation**

Magnetic anomaly detection software 6D003.f.2
Magnetic bearings (suspension) 2A001.c
Magnetic compensation systems for magnetic and underwater electric field sensors 6A006.d
Magnetic compensation systems software 6D003.f.1
Magnetic confinement plasma dry etching equipment 3B001.c.1.a
Magnetic disk storage 3A002.a.6
Magnetic and Electric Field Sensors “software” 6D003.f
Magnetic gradiometers 6A006.c
Magnetic gradiometers, intrinsic 6A006.c.2
Magnetic 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
Manifolds (air, fuel, oil) for gas turbine engines 9A619.y.8
Manipulators, remote 2B225
Manipulators, for submersibles 8A002.i
Manned, tethered submersible vehicles 8A001.a
Manned, untethered submersible vehicles 8A001.b
Manufactured gas and synthetic natural gas produced or derived from Naval Petroleum Reserves 1C984
Map cases for military aircraft 9A610.y.28
Maraging steel 1C116
Maraging steel 1C216
Marburg virus 1C351.a.31
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

Description **ECCN Citation**

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
Masks, mask substrates, mask-making equipment 3B991.b.2
Mass spectrometers & ion sources (UF6 enrichment plant) 3A233
Mass spectrometers, n.e.s. 3A999.b
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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
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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
Mechanical caps 3A611.y.29
Mechanical plugs 3A611.y.30
Media access units ..... 5A991.b Note a.12
Medical facilities for submersible vessels 8A620.y.6
Medical facilities for surface vessels of war 8A609.y.6
Melting furnaces 2B227.b
Mercury amalgam pumps 1B233.b.2
Mercury cadmium telluride crystals & epitaxial wafers 6C002.b
Metal alloy powders or particulate form 1C002.b
Metal alloy particulate 1C111.a.2.a.4
Metal alloys 1C002.a
Metal alloys, aluminum or titanium 1C202
Metal alloys, beryllium 1C230
Metal alloys, boron 1C011.b
Metal alloys, hafnium 1C231
Metal alloys, lithium 1C233
Metal alloys, powder and material production systems and components 1B002
Metal alloys, tungsten 1C226
Metal alloys, tungsten or molybdenum 1C117
Metal alloys, zirconium 1C234
Metal coated fiber preforms 9A110

Description **ECCN Citation**

Metal coated fiber preforms for fiber prepregs in 9C110 ..... 9C110
Metal or carbon matrix 1A002.b
Metal embrittlement agents 0A617
Metal-organic compounds, aluminum/gallium/indium 3C003
Metal particulate 1C011
Metal powder production equipment 1B102
Metal vapor lasers 6A005.b
Metal working process tools, die & fixture technology 2E003.b.1
Metal working manufacturing processes technology 2E003.b
Metallo-organic or polymeric materials 1C007.e
Metallurgical melting & casting furnaces 2B227
Metals or carbon coated fibers 1C010.e
Metals with high initial relative (magnetic) permeability 1C003.a
Methyl centralites 1C018.a
Methyldiethanolamine (105-59-9) 1C355.b.2.b
Methyl phosphinyl dichloride 1C350.b.1
Methyl benzilate 1C350.d.9
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
Microelectronic circuits (e.g., integrated circuits and micro-circuits) rated, certified, or otherwise specified or described as meeting or exceeding all the characteristics in 9A515.d and that are “specially designed” for defense articles, “600 series” items, or items controlled by 9A515 ..... 9A515.d
Microelectronic circuits (e.g., integrated circuits and micro-circuits) that are rated, certified, or otherwise specified or described as meeting or exceeding all the characteristics in 9A515.e and that are “specially designed” for defense articles controlled by USML Category XV or items controlled by 9A515 ..... 9A515.e
Microfluorination ion sources 3A233.f
Micromachined Angular Rate Sensors 7A994
Microorganisms, genetically modified 1C353
Microphones 3A611.y.6
Microprocessor microcircuits 3A001.a.3

Microprocessor microcircuits above 530 MTOPS development/production technology 3E002.g
Microwave amplifiers, solid state 3A001.b.4
Microwave frequency extenders, mixers/converters 3A001.b.7

Description **ECCN Citation**

Microwave integrated circuit test equipment....3B002.c
Microwave integrated circuits....3A001.b.2
Microwave modules....3A001.b.2
Microwave or millimeter wave components 3A001.b
Microwave or millimeter wave components software....3D001
Microwave or millimeter wave components technology....3E001
Microwave "monolithic integrated circuits" (MMIC) power amplifiers....3A611.c
Microwave Monolithic Integrated Circuit (MMIC) power amplifier technology....5E001.d or .e, 3E611.b.3
Microwave power modules (MPM)....3A001.b.9
Microwave transistors (discrete)....3A001.b.3
Microwave test receivers 3A002.f
Microwave wave components....3A001.b
MIG welders 2B999.d
Military commodities....0A919
Military components 3A611
Military construction equipment....0A617.y
Military electronics (equipment, end items, systems) 3A611
Military explosive production equipment....1B018.a
Military ferries, bridges and pontoons....0A617
Military harbor entrance detection devices (magnetic, pressure, and acoustic) 8A620
Military helmet....0A018
Military training equipment 0A614
Military vehicles 0A606
Military vehicle fording kits 0A606
Military vehicle self-launching bridge components 0A606
Millimeter wave components....3A001.b
Milling machines, (CNC) with two or more coordinated axes....2B001.b
Milling machines, (CNC) with two or more coordinated axes....2B201.a
Milling machines (CNC)....2B991.d.1
Mills, fluid energy....1B119
Mining equipment....2B999.h
Mirror assemblies/segments, space assembly....6A004.c.3
Mirror characterization equipment, reflectometers....7B102.b
Mirror structures, lightweight foam or composite type 6A004.a.3
Mirrors, actively cooled or heat pipe cooled 6A005.e.1
Mirrors, beam steering....6A004.a.4
Mirrors, cockpit for military aircraft....9A610.y.15
Mirrors, optical 6A005.e.2
Mirrors, optical 6A004.a
Missile engine combustion regulation devices 9A118

Description **ECCN Citation**

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
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.32
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
Multichip modules 3A611.h, y.16
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
Multichip modules 3A611.h, y.16
Multilevel security capability, equipment.....5A002.a.6
Multimode optical fiber & cables, high tensile strength.....5A001.c

Description **ECCN Citation**

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.33
Mycoplasma capricolum subspecies capripneumoniae (“strain F38")....1C351.c.15
Mycoplasma mycoides subspecies mycoides SC (small colony)
(a.k.a. contagious bovine pleuropneumonia)....1C351.c.16
N,N-diisopropyl-beta-aminoethane thiol....1C350.b.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
Name plates and identification plates....3A611.y.33
Nanocrystalline alloy strips....1C003.c
Natural gas liquids and derivatives produced or derived from
Naval Petroleum Reserves....1C983
Navigation, airborne comm. & other avionics equip. technology....7E004, 7E994
Navigation, airborne communication and other avionics software....7D004, 7D994
Navigation/avionics equipment, systems, parts, components … for military....7A611, 3A611
Navigation direction finding equipment....7A004-7A008, 7A103-7A105, 7A994
Navigation systems, equipment & components, inertial....7A103
Navigation systems, equipment & components, inertial....7A003
Navigation systems, equipment, parts … for military not on USML....7A611/3A611
Navigation systems, underwater sonar....7A008
NDT (non-destructive test) inspection equipment (3D)....1B001.f
NDT (non-destructive test) inspection equipment....9B007
Neodymium lasers....6A005.d.6
Neodymium lasers....6A205.f
Nets (submarine or torpedo)....8A620.e
Network analyzers....3A002.e
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

Description **ECCN Citation**

Neutron generator systems & tubes 3A231
Neutronic calculations/modeling, software for 0D999.a
Newcastle disease virus 1C351.a.34
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.35
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
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

Description **ECCN Citation**

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
O-ring for ground vehicles 0A606.y.9
Object detection and location systems or transmitting and receiving arrays (acoustic) 6A001.a.1.b
Ocean salvage systems 8A001.e
Off highway wheel tractors 9A990
Oil and gas exploration equipment, software, and data 0A998
Oil well cartridges ..... 1C608.f or 1C992.g
Oil lines and tubes for military gas turbine engines 9A619.y.2
Oil tank and reservoirs for military gas turbine engines 9A619.y.1
Oil, lubricating, cutting, or quenching 1C980
Oils, distillate fuel 1C980
Omsk haemorrhagic fever virus 1C351.a.36
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

Description **ECCN Citation**

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

Description **ECCN Citation**

Optics software 6D003.d
Optimization of rocket systems trajectory technology 7E104
Organic fibers & filamentary materials 1C010.a
Organic matrix 1A002.a
Organo-metallic compounds 3C003
Oropouche virus 1C351.a.37
Oscillators or oscillator assemblies 3A001.b.10
Oscilloscopes (high-speed) 3A002.a.7
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
Passenger seats for military aircraft 9A610.y.16
Particle measuring systems employing lasers 3B992.b.7
Parts for “600 series” or defense articles 3A611.y
Passive coherent location systems or equipment 5A001.g
Passive sensors, direction finding systems 7A115
Passive acoustic systems 6A001.a.1.d
Pathogens, genetically modified microorganisms 1C353.a
Pathogens, animal 1C351
Pathogens, human 1C351
Pathogens, plant 1C354
Pathogens, zoonotic 1C351
PBAA (Polybutadiene-acrylic acid) 1C111.b.3
PBAN (Polybutadiene-acrylic acid-acrylonitrile) 1C111.b.4
PEEK (Polyether ether ketone) 1C998
PEK (Polyether ketone) 1C998
PEKEKK (Polyether ketone ether ketone ketone) 1C998
PEKK (Polyether ketone ketone) 1C998
1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8) (PFIB) .. 1C355.a.1.a, 1E355.a.1
Perfluoroaliphatic-ethers, monomeric or polymeric 1C006.d.1.a
Perfluoroalkanes 1C006.d.1.d
Perfluorocycloalkanes 1C006.d.1.c
Perfluoropolyalkylether-triazines, monomeric or polymeric 1C006.d.1.a
Performance improvement software, navigation systems 7D003.a

Description **ECCN Citation**

Performance improvement source code, navigation systems ..... 7D003.b and 7D004
Peronosclerospora philippinensis (a.k.a. Peronosclerospora sacchari)..... 1C354.b.7
Peste des petits ruminants virus 1C351.a.38
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 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, 1E355.b.1
Phosphate glass 6C004.e
Phosphor bronze or copper mesh packings..... 1A226
Phosphor image plates, storage..... 1A999.b
Phosphorus hydrides 3C004
Phosphorus oxychloride..... 1C350.c.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
“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

Description **ECCN Citation**

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
Plugs, mechanical 3A611.y.30
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
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 9 (swine vesicular disease virus) 1C351.a.39
Porcine herpes virus (Aujeszky's disease) 1C351.a.19
Porous nickel metal 1C240

Description **ECCN Citation**

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
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Pumpjet propulsion systems 8A002.p
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Pyrolitic deposition systems, for rocket nozzles and reentry vehicle nose tips 2B117
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Pyrolized carbon-carbon components 1A102
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Pyrolysis equipment, for rocket nozzles and reentry vehicle nose tips (“isostatic presses”, other than those controlled by 2B004) 2B104
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Radio equipment ..... 5A991.b.6 or 7
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Reciprocating diesel engine & component technology 9E003.e.1
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Description **ECCN Citation**

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Description	ECCN Citation
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Robots, specially designed to operate at high altitudes	2B007.d
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Robots, radiation hardened	2B007.c
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Rocket motors, hybrid	9A109
Rocket nozzles	9A106.b
Rocket stages, other than those of 9A005/7/9, 9A105/107/109	9A119
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Description **ECCN Citation**

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Scanning cameras & systems 6A003.b.2
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Scatterometers, to characterize mirrors for laser gyro equipment 7B102.a
Sclerophthora rayssiae var. zeae 1C354.b.8
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Scuba gear 8A992.h
SDH (Synchronous Digital Hierarchy) technology 5E001.b.4
SDH (Synchronous Digital Hierachy) technology 5E991.a.2
Sealers (semi-automatic or automatic hot cap) for ceramic microcircuit packages 3B991.b.3.c
Seal-less pumps 2B350.i
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Search lights 0A617.y.5
Seats, seat assemblies, seat supports, and harnesses – for ground vehicles 0A606.y.14
Security equipment, information 5A002
Security equipment, information, software 5D002
Security imaging equipment ..... 2A984, 2D984 or 2E984
Security scanning equipment ..... 2A984, 2D984 or 2E984
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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
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Semiconductor materials purifying or processing equipment 3B991.b.1.b
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Description **ECCN Citation**

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Sensors, optical 6A992
Sensors, optical 6A002
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Shiga toxin producing Escherichia coli (STEC) of serogroups O26, O45, O103, O104,
O111,O121, O145, O157, and other shiga toxin producing serogroups 1C351.c.19
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Shotgun trigger mechanisms, barrels, magazines, magazine extension
tubes, receivers 0A984
Shrink fit machines for rotor fabrication/assembly 2B228.a
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Description **ECCN Citation**

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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
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Simple programmable logic devices (SPLD) 3A001.7.a, 3A991.d
Simulators for nuclear reactors 2A291.b
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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
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Skin friction transducers, wall 9B008
Slapper detonators (Electric) ..... 1A007 or 3A232.a.3
Slurry propellant control systems 9A106.d
Smoke bombs 1A984
Smoke detector for military aircraft 9A610.y.27
Sodium azide 1C992.l
Sodium bifluoride 1C350.d.16

Description **ECCN Citation**

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Sodium fluoride....1C350.d.18
Sodium (Na) metal vapor lasers....6A005.b
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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
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"Software" "specially designed" for ground vehicles and related commodities controlled by 0A606, 0B606, or 0C606....0D606
"Software" "specially designed" for commodities controlled by 0A617, "equipment" controlled by 0B617, or materials controlled by 0C617....0D617
"Software" specially designed for the "development" of the equipment controlled by 3A003....3D004
"Software" "specially designed" for the "development," "production," operation, failure analysis or anomaly resolution of commodities controlled by 9A515.d....9D515.d
"Software" "specially designed" for the "development," "production," operation, failure analysis or anomaly resolution of commodities controlled by 9A515.e....9E515.e
Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels, and solar arrays (space qualified)....3A001.e.4 or 3A991
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Solid state joining equipment, tools/dies/fixtures....9B004
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Description **ECCN Citation**

Solid-state imaging devices 6A002
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Solid state microwave amplifiers 3A001.b.4
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Sonar processing equipment 6A001.a.2.b
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Sonar, Synthetic Aperture Sonar (SAS) designed for seabed imaging 6A001.a.1.a.3
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SONET (Synchronous Optical Network) technology 5E991.a.2
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Source code, development of avionic goods as specified 7D004
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Spacecraft payloads 9A515
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Spectrometry analytical instruments 3A999.f
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Spiked batons 0A983
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Spin forming machines 2B209
Spin forming machines 2B999l
Spin forming machines capable of flow-forming functions 2B209

Description **ECCN Citation**

Spin forming machines combining spin-forming and flow-forming function.....2B009
Spindle assemblies.....2B998.a
Spindle assemblies, machine tools.....2B008.c
Spray booms or arrays of aerosol generating units, specially designed
for fitting to aircraft, lighter than air vehicles," or "UAVs".....2B352.i.2
Spray cooling thermal management systems.....3A003
Spray-drying equipment capable of drying toxins or pathogenic microorganisms.....2B352.f
Spraying or fogging systems, specially designed for fitting to aircraft,
"lighter than air vehicles," or "UAVs".....2B352.i.1
Spraying production equipment, plasma with controlled atmosphere.....2B005.d
Spread spectrum development technology techniques.....5E001.b.4
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
St. Louis encephalitis virus.....1C351.a.49
Staging mechanisms for missiles.....9A117
Stainless steel plate.....1C999.b
Staphylococcus aureus enterotoxins, hemolysin alpha toxin, and toxic shock
syndrome toxin (formerly known as Staphylococcus enterotoxin F).....1C351.d.14
'Star trackers' and components therefor.....7A004
Statistical multiplex equipment.....5A991.b Note a.7
Steam sterilizable freeze drying equipment.....2B352.e
Steel, maraging.....1C216
Steel, maraging.....1C116
Steel, Titanium-stabilized duplex stainless (Ti-DSS).....1C118
Steel plate, stainless.....1C999.b
Stealth materials, coatings and treatments for signature suppression.....0C617.a
Step & repeat equipment, semiconductor wafer processing.....3B001.f.1
Stirling cycle engine, air independent.....8A002.j.4
Storage & 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

Description **ECCN Citation**

Stored program controlled (SPC) switching equipment, technology
for the development of equipment employing 5E001.c
Stored program controlled equipment controlled by 3B, software
for use of 3D002
Stored program controlled crystal pullers..... 3B991.b.1.c.2
Straight jackets.....0A982
Strap down/gimbal inertial navigation systems or equipment.....7A003
Streak cameras, mechanical type 6A203.a.2
Streak cameras, mechanical or electronic.....6A003.a.3
Streak tubes, electronic streak cameras 6A203.b.1
Streak cameras, electronic type.....6A203.b.1
Striplines to provide low inductance path to detonators.....3A234
Stroboscopic light systems.....8A992.c
Structural composites production equipment 1B101
Structures and composite structures, laminate, and manufacturers for missiles.....9A110
Stun guns.....0A985
Stun cuffs 0A982
Submarine diesel engines.....8A620.d
Submarine engines, n.e.s.....8A992.g
Submarine nets.....8A620.e
Submarine vessel positioning systems, acoustic.....6A001.a.1.d
Submersible systems.....8A992.e
Submersible vessels, cargo and transport 8A620
Submersible vessels, military.....8A620
Submersible vessels, oceanographic and associated commodities.....8A620
Submersible vehicles operation software (unmanned) 8D999
Submersible vehicles/vehicle systems, equipment, or components (non-military).....8A002.a
Submersible vehicles/vehicle systems or equipment (non-military) 8A001
Substrate development/production technology, diamond film 3E003.d
Substrates, for X-ray masks 3B991.b.2.b.2
Substrates, hard surface coated.....3B991.b.2.b.1
Substrates, multi-layer hetero-epitaxial materials.....3C001
Substrates, semiconductor with resist coating 3C002
Substrates with at least one epitaxial layer of silicon carbide, gallium
nitride, aluminum nitride or aluminum gallium nitride 3C006
Suits, protective..... 1A004, 1A995 or 2B352.f.1
Sulphur dichloride..... 1C350.c.7
Sulphur monochloride..... 1C350.c.6
Supercomputers, see Computers
Superconducting quantum interference devices (SQUIDs).....6A006.a.1
Superconductive composite conductor 1C005

Description **ECCN Citation**

Superconductive gates, current switching....3A001.d.1
Superconductive electrical equipment....9A620.b
Superconductive electromagnetic sensors.... 6A996.b
Superconductive electromagnets or solenoids.... 3A201.b
Superconductive electromagnets or solenoids....3A001.e.3
Superconductive devices or circuits....3A001.d
Superconductive quantum interference devices (SQUIDs)....6A006.a.1
Superconductive propulsion engines....8A002.o.2.c
Superconductive electromagnetic sensors....6A996
Superconductive electronic device technology.... 3E003.c
Superplastic forming technology, metal working.... 2E003.b.1.a
Superplastic forming tools, dies, molds or fixtures....1B003
Superplastic forming technology/data, Al/Ti/Super alloys.... 2E003.b.2.a
Surface acoustic wave devices....3A001.c.1
Surface coating & processing equipment....2B005
Surface effect vehicles technology....8E002.c.1, c.2
Surface finishing equipment....3B991.b.1.k
Surface irregularity measuring equipment/instruments....2B006.c
Surface skimming (shallow bulk) acoustic wave devices....3A001.c.1
Surface vessel positioning systems, acoustic....6A001.a.1.d
Surface vessels & components....8A609
Surface vessels of war and related commodities....8A609
Surface wave radar, high frequency....3A611.e
Surreptitious interception devices....5A980
Surreptitious interception systems and equipment.... 5A001.f
Surreptitious interception systems and equipment, software for.... 5D001 or 5D980
Surreptitious interception systems and equipment, technology for.... 5E001 or 5E980
Survey equipment, surface vessel....6A001.a.1.a.1
Survey equipment, underwater....6A001.a.1.a.2
Survey systems or transmitting and receiving arrays, bathymetric....6A001.a.1.b
Swine fever virus (African)....1C351.a.2
Swine fever virus (Hog cholera virus)....1C351.a.20
Swine vesicular disease virus (Porcine enterovirus type 9).... 1C351.a.39
Switch fabric development/production technology....5A991.c.10
Switches, filtered and unfiltered mechanical....3A611.y.21
Switching devices, modules or assemblies....3A228
Switching equipment, stored program controlled....5A991.c
Synchronous Digital Hierarchy (SDH) technology....5E001.b.4
Synchronous Digital Hierarchy (SDH) technology.... 5E991.a.2
Synchronous Optical Network technology (SONET).... 5E001.b.4
Synchronous Optical Network technology (SONET).... 5E991.a.2

Description **ECCN Citation**

Synchytrium endobioticum 1C354.b.9
Synthetic Aperture Sonar (SAS) designed for seabed imaging 6A001.a.1.a.3
Syntactic foam, underwater use 8C001
Synthetic crystalline laser host material 6C005
Synthetic diamond material 6C004.f
Synthetic aperture radar (SAR) 6A008.d
Systolic array computers/assemblies/components 4A004.a
T-2 toxin 1C351.d.15
Tanks, austenitic stainless steel 2B999.n
Tanks, chemical storage (capacity greater than 100 L) 2B350.c
Tanks, monel 2B999.f
Tanks, stainless steel 2B999.g
Tank turret rings and sprockets induction hardening machines 2B018.m
Tank turret bearing grinding machines 2B018.s
Tantalum crucibles coated with tantalum carbide/nitride/boride 2A225.c
Tantalum made or lined crucibles 2A225.b
Tape designed for testing recording equipment of entry 3A002a 3A002.a
Tape bonders, stored program controlled equipment 3B991.b.3.b
Tape recording equipment 3A002.a
Tape-laying machines 1B101.b
Tape-laying machines 1B001.b
Tar sands 1C981
Tear gas 1A984
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, “development,” “production,” or “use” of “software” controlled by ECCN 3D201 or 3D202 ..... 3E202
Technology, diamond substrate film 3E003.d
Technology, for commodities controlled by 8A609, 8B609, or 8C609, or “software” controlled by 8D609 ..... 8E609
Technology, for ground vehicles and related commodities in 0A606, 0B606, 0C606 or software in 0D606 ..... 0E606
Technology, for items controlled by 0A617, 0B617, 0C617, 0D617 ..... 0E617
Technology, for items controlled by 8A620, 8B620 or 8D620 ..... 8E620
Technology, gas turbine engine components 9E003.c, 9E619
Technology, gas turbine engine components 9E003.a, 9E619
Technology, helicopter power transfer systems 9E003.d, 9E619
Technology, hetero-structure semiconductor development 3E003.b
Technology, high output type diesel engines 9E003.e

Description **ECCN Citation**

Technology, integration software for expert systems 2E003.e
Technology, machine tool instruction generators 2E003.d
Technology, “production” or “use” of “software” controlled by ECCN 6D201 ..... 6E202
“Technology” specially designed or modified for the “development”, “production” or “use” of equipment controlled by 2A983, or the “development” of software controlled by 2D983 ..... 2E983
Technology “required” for the “development” or “production” of commodities controlled by ECCN 6A990 ..... 6E990
“Technology” “required” for the “development,” “production,” operation, failure analysis or anomaly resolution of commodities controlled by 9A515.d 9E515.d
“Technology” “required” for the “development,” “production,” failure analysis or anomaly resolution of commodities controlled by 9A515.e 9E515.e
Technology, superconductive electronic device 3E003.c
Technology, tilt rotor/wing power transfer systems development 9E003.d, 9E610.a
Technology, vacuum microelectronic device 3E003.a
TEGDN (Triethylene glycol dinitrate) propellant additive 1C111.c.2
Telecommunications equipment 5A001
Telecommunications equipment, parts, components for a military application 5A611, 3A611
Telecommunications equipment, high and low temperature tolerant 5A991.a
Telecommunication equipment not controlled by 5A001 ..... 5A991
Telecommunications equipment/system software 5D001.c.1
Telecommunications interception equipment 5A001.f
Telecommunication monitoring equipment 5A001.f
Telecommunication test, inspection and production equipment 5B001
Telecommunications test equipment 5B991
Telecommunications transmission equipment, equipment for the development of equipment employing 5B001.b
Telecommunications transmission equipment, software for the development of equipment employing 5D001.d
Telecommunications transmission equipment, technology for the development of equipment employing 5E001.c
Telemetering & telecontrol equipment for missiles 5A101
Television cameras (radiation hardened), or lenses therefor 6A203.d
Television cameras, underwater 8A002.d.1.b
Television cameras, underwater 8A002.d.1
Television cameras, underwater 8A002.d.1.a
Television cameras, underwater 8A992.a.2
Television systems (camera, lights, monitoring and signal transmission equipment), remote operation with submersible vehicle 8A992.a.1
Tellurium (Te) 6C002.a
Tempest type equipment 5A002.a.4

Description **ECCN Citation**

Tension stretchers for prepregs/preform production 1B101.d
Terminal interface equipment 4A994.i
Terrestrial, marine acoustic equipment 6A991
Terrestrial equipment, specially designed for spacecraft 9A515
Teschen disease virus 1C351.a.50
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, inspection, and production commodities for military electronics 3B611
Test models for defense articles 0A617
Test receivers, microwave 3A002.f
Test tape designed for recording equipment of entry 3A002a 3A002.a
Testing equipment, for electronic components 3B992.b.4
Test, inspection, development and production equipment for Category 5 items 5B
Tetrazines ..... Annex to Cat 1 List of Explosives 47
Tetrodotoxin 1C351.d.16
TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4, 10- diazaisowurtzitane) ..... Annex to Cat 1 List of Explosives 45
Thallium arsenic selenide (Tl_3AsSe_3 or TAS) 6C004.b.3
Thecaphora solani 1C354.b.11
Thermal batteries 9A604
Thermal ionization mass spectrometers (TIMS) 3A233.c
Thermal sensors, optical fiber 6A002.d.3
Thermoplastic liquid crystal copolymers 1C008.b
Thermoset resin impregnated materials 1C210.c
Thio-ethers, as lubricating fluids 1C006.b.1
Thiodiglycol 1C350.b.20
Thionyl chloride 1C350.c.8
Thrust tabs, thrust vector control subsystems 9A106.c
Thrust vector control sub-system 9A106.c
Thulium-YAG (Tm:YAG) lasers ..... 6A005.c.1, c.2 or c.3
Thulium-YSGG (Tm:YSGG) lasers ..... 6A005.c.1, c.2 or c.3
Thumbcuffs 0A983
Thumbscrews 0A983
Thumbwheels 3A611.y.22
Thyristor devices and modules, solid-state pulsed power switching 3A001.g
Tick-borne encephalitis virus (Far Eastern subtype, formerly known as Russian Spring-Summer encephalitis virus) 1C351.a.51

Description **ECCN Citation**

Tick-borne encephalitis virus (Siberian subtype, formerly known as West Siberian virus) 1C351.b.3
Tilletia indica 1C354.b.10
Tilt rotor/tilt wing power transfer system technology 9E003.d, 9E610.a
Tilting spindles for machine tools 2B009.c
Time delay general, electronic equipment for 3A999.e
Time interval measurement, electronic equipment for 3A999.e
Time or frequency domain processing & correlation equipment 6A001.a.2.c
TIMS (Thermal ionization mass spectrometers) 3A233.c
Tires (aircraft) 9A610.y.1
Tires (ground vehicles), except run flat 0A606.15
Titanium alloys 1C002.b.3
Titanium alloys, as tubes/solid forms/forgings 1C202.b
Titanium alloy/powder or particulate form 1C002.c.1.c
Titanium aluminides 1C002.a.2
Titanium-based alloys 1C002.b.3
Titanium doped sapphire laser host material 6C005.a
Titanium-sapphire (Ti: Al_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
Torquemeter assembly software 9D619.b.9
Torture, specially designed implements of 0A983
Touchpads 3A611.y.28
Tow-placement machines 1B001.g
Towed acoustic hydrophone arrays 6A001.a.2.b
Toxic gas monitoring systems 2B351
Toxins ..... 1C350, 1C351, 1C355 or 1C395
Trackballs 3A611.y.12
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
Transformers, electric 3A611.y.13
Transient recorders (Waveform digitizers) ..... 3A002.a.5 or 3A292.d

Description **ECCN Citation**

Transistor test equipment, S-parameter measurement 3B002.a
Transistors, microwave 3A001.b.3, 3A611.d
Translation encoders (transcoders) ..... 5A991.b Note a.6
Transmission fluids, automatic 1C980
Transmission equipment 5A991.b
Transmission equipment for Improvised Explosive Devices (IED) 5A001.h
Transmissions for tracked combat vehicles 0A606.d
Transmit/receive or transmit module technology 3E611.b.2
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
Tungsten & molybdenum metal & alloys 1C117
Tungsten, parts 1C226
Turbines for use in nuclear reactors 2A290.a
Turbines, aero gas engines, test software 9D004.b, 9D619
Turbines, gas aero engines 9A001, 9A619.a
Turbo prop engines 9A619.a
Turbocompound engines 9A101
Turboexpanders and turboexpander-compressors 1B232
Turbofan & turbojet engines, lightweight 9A101, 9A619
Turboprop engine systems specially designed for items controlled by 9A012 ..... 9A102.a

Description **ECCN Citation**

Turning machines for optical quality surfaces 2B992.a
Turning machines (CNC) 2B991.d.1
Turning machines 2B201.c
Turning machines (CNC) 2B001.a
TV cameras (radiation-hardened), or lenses therefor 6A203.d
TV cameras, radiation-hardened, not specified in 6A203 ..... 6A999.b
Two dimensional focal plane arrays 6A002.a.3
TWTs (Traveling Wave Tubes) 3A001.b.1.a
UAVs (non-military) 9A012.a
UAV (military) production facilities 9B610.c
Ultrasonic test equipment for nuclear reactors 2A291.d
Underwater breathing apparatus, self-contained 8A992.h
Underwater cameras, photographic ..... 8A002.d, e or f
Underwater camera equipment, n.e.s. 8A992.d
Underwater communications systems 5A001.b.1
Underwater ElectroMagnetic Receivers (UEMR) 6A006.e
Underwater ElectroMagnetic Receivers (UEMR) software ..... 6D003.f.3 or f.4
Underwater electric field sensors 6A006.b
Underwater lights 8A992.j
Underwater noise reduction technology 8E002
Underwater (propeller) noise reduction software 8D002
Underwater propulsion equipment 8A992.j
Underwater rebreathing apparatus 8A620.f
Underwater robots, computer controlled 8A002.h
Underwater sonar navigation systems 7A008
Underwater systems or equipment and parts, not controlled by 8A002 ..... 8A992
Underwater television cameras 8A992.a.2
Underwater vehicles, industrial 8A001
Underwater velocity measurement equipment 6A001.b
Underwater vessel positioning systems, acoustic 6A001.a.1.d
Underwater vision systems 8A002.d
Underwater vision systems 8A992.a
Unmanned aerial vehicles, not specified in 9A102 ..... 9A120, 9A610
Unmanned aerial vehicles and associated systems, production equipment 9B010, 9A610
Unmanned aerial vehicles, associated equipment, systems, and components 9A012.b, 9A610
Unmanned air vehicle systems (UAVs) Non-military 9A012.a
Unmanned submersible vehicle operation software 8D999
Unmanned tethered submersible vehicles 8A001.c
Unmanned untethered submersible vehicles 8A001.d
Uranium, depleted 1A290
Uranium titanium alloys 1C004

Description **ECCN Citation**

Urine collection bags/pads/cups/pumps for military aircraft....9A610.y.21
Vaccines and immunotoxins....1C991
Vacuum furnaces....2B226
Vacuum furnaces....2B227
Vacuum induction furnaces....2B226
Vacuum induction furnace, power supplies....2B226
Vacuum melting, remelt & casting furnaces....2B227
Vacuum microelectronic device development/production technology....3E003.a
Vacuum pumps....2B231
Vacuum pumps....2B350.i
Vacuum pumps, bellows-sealed scroll-type....2B233
Vacuum tubes, electronic microwave....3A001.b.1
Vacuum 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 (check) for hydraulic and pneumatic systems in military aircraft....9A610.y.4
Valves, double-seal....2B350.g
Valves, of or lined with stainless steel, copper-nickel alloy or other alloy steel....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.52
Vector processing unit technology....3E002
Vector processors/assemblies....4A003
Vehicle position determination software....6D103
Vehicles, “specially designed” for a military use....0A606.a
Vehicles, unarmed, off-road, and armored....0A606.b.1
Velocity interferometers (VISARs)....6A225
Velocity measurement equipment, underwater....6A001.b
Venezuelan equine encephalitis virus....1C351.a.53
Ventilated full or half (protective clothing) suits....2B352.f.1
Verocytotoxin producing E. coli (VTEC)....1C351.c.17
Verotoxin....1C351.d.17
Vesicular stomatitis virus....1C351.a.54
Vessels, austenitic stainless steel....2B999.n

Description **ECCN Citation**

Vessel positioning systems, acoustic 6A001.a.1.d
Vessel noise reduction equipment 8A002.o.3
Vessels, marine 8A001, 8A609, 8A620
Vessels, marine systems or equipment 8A992
Vessels, monel 2B999.f
Vessels, stainless steel 2B999.e
Vests, bulletproof & bullet resistant 1A005
Vibration test equipment, acoustic 9B006
Vibration test equipment, parts and components 9B990
Vibration test equipment using digital control techniques 2B116
Vibrio cholerae 1C351.c.21
Video cameras incorporating solid state sensors 6A003.b.1
Vinylidene fluoride copolymers 1C009.a
Vinylidene fluoride copolymers, components of 1A001
virulans, fungi (Colletotrichum kahawae) 1C354.b.1
Virus protection software 5D992
Viruses ..... 1C351 or 1C353
Viruses, animal pathogens 1C351.a
Viruses, human pathogens ..... 1C351.a or .b
Viruses, plant pathogens 1C354.c
Viscous software, 2D or 3D engine flow modeling 9D004.a
Viscum Album Lectin 1 (Viscumin) 1C351.d.18
Vision systems, underwater 8A992.a
Vision systems, underwater 8A002.d
Voice print identification and analysis equipment and parts 3A980
Volkensin toxin 1C351.d.19
Wafer handling systems, semiconductor 3B001.e
Wafer processing, semiconductor manufacture 3B001.e
Wafer probing equipment 3B992.b.3
Wafer production align and expose equipment 3B991.b.2.f
Wafers, semiconductor with function determined 3A001.a
Wafers, comprising multiple epitaxially grown layers 3C001
Wall skin friction transducers 9B008
War implement machinery, equipment, gear, and specially designed
parts and accessories therefor 2B018
Water (deep) fording kits for ground vehicles 0A606.e
Water jet cutting machines (CNC) 2B001.e.1.a
Water jet (pumpjet) propulsion systems 8A002.p
Waterplane area vessels (small) 8E002.c.4
Water tanks (potable) and accessories for military aircraft 9A610.y.17
Water tanks (potable) and accessories for submersible vessels 8A620.y.7

Description **ECCN Citation**

Water tanks (potable) and accessories for surface vessels of war 8A609.y.7
Water tunnels, propulsion model acoustic field measurement 8B001
Water-hydrogen sulphide exchange tray columns 1B229
Wave division multiplex equipment 5A991.b.5
Waveform digitizers (Transient recorders) 3A002.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.55
Western red cedar, logs and timber 1C988
Wet-spinning equipment for refractory ceramics 1B101.c.3
Wet-spinning equipment for refractory ceramics 1B001.d.3
Wetsuits 8A992.i
Wide-swath bathymetric survey systems 6A001.a.1
Wigglers (free electron laser magnet) manufacturing or inspection equipment 6B995.a.1
Wind tunnel aero-model technology 9E003.b.1
Wind tunnel, control systems 9B005
Wind tunnels, usable for missiles 9B105
Winding machines, fiber optic gyro coil 7B003
Windows, glass for nuclear radiation shielding 1A227
Windows (ground vehicle), except those for amored vehicles 0A606.y.16
Windshield water and wiper systems for military aircraft 9A610.y.22
Wing folding system software ..... 0D521 No. 3
Wing folding system technology 9E003.j
Work stations, as computers having a CTP above 260 Mtops 4A003.b
X-ray converters 1A999.b
X-ray equipment for projection image transfer 3B991.b.2.g
X-ray generators, radiographic 3A201.c
X-ray machines, flash 3A999.c
X-ray (non planar) inspection equipment, rocket motors 9B007
Xanthomonas albilineans 1C354.a.1
Xanthomonas axonopodis pv. citri (Xanthomonas campestris pv, citri A)
(Xanthomonas campestris pv. citri) 1C354.a.2
Xanthomonas oryzae 1C354.a.3
Xanthomonas oryzae pv. oryzae (syn. Pseudomonas campestris pv. oryzae) 1C354.a.3
Yellow fever virus 1C351.a.56
Yersinia pestis 1C351.c.22
Yttrium oxide (yttria) (Y_2O_3), crucibles made or coated 2A225.a.8

Description **ECCN Citation**

Zinc germanium biphosphide 6C004.b.4
Zinc germanium diphosphide 6C004.b.4
Zinc germanium phosphide 6C004.b.4
Zinc selenide (ZnSe), substrate blanks 6C004.a
Zinc sulphide (ZnS), substrate blanks 6C004.a
Zirconium fluoride (ZrF_4) glass 6C004.e
Zirconium metal particulate 1C111.a.2.a.1
Zirconium metal, alloy, compounds, or manufacturers 1C234
Zirconium oxide (zirconia) (ZrO_2) made/coated crucibles 2A225.a.9
Zoonotic pathogens and “toxins” 1C351

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