

**CATEGORY 9 - PROPULSION SYSTEMS,
SPACE VEHICLES AND RELATED
EQUIPMENT**

**A. SYSTEMS, EQUIPMENT AND
COMPONENTS**

N.B.: For propulsion systems designed or rated against neutron or transient ionizing, see the U.S. Munitions List, 22 CFR part 121.

9A001 Aero gas turbine engines incorporating any of the "technologies" controlled by 9E003.a, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|---|----------------------|
| NS applies to entire entry | NS Column 1 |
| MT applies to only to those engines that meet the characteristics listed in 9A101 | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

LVS: N/A
GBS: N/A
CIV: N/A

List of Items Controlled

Unit: Equipment in number; parts and accessories in \$ value
Related Controls: See also 9A101 and 9A991
Related Definitions: N/A
Items:

a. Not certified for the specific "civil aircraft" for which they are intended;

Note: For the purpose of the "civil aircraft" certification process, a number of up to 16 civil certified engines, assemblies, or components including spares is considered appropriate.

b. Not certified for civil use by the aviation authorities in Country Group A:1;

c. Designed to cruise at speeds exceeding Mach 1.2 for more than thirty minutes.

9A002 Marine gas turbine engines with an ISO standard continuous power rating of 24,245 kW or more and a specific fuel consumption not exceeding 0.219 kg/kWh in the power range from 35 to 100%, and specially designed assemblies and components therefor.

License Requirements

Reason for Control: NS, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| NS applies to entire entry | NS Column 2 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

LVS: \$5000
GBS: N/A
CIV: N/A

List of Items Controlled:

Unit: Number
Related Controls: N/A
Related Definition: The term "marine gas turbine engines" includes those industrial, or aero-derivative, gas turbine engines adapted for a ship's electric power generation or

issued after March 15, 1999, remain subject to SI controls throughout the validity of the license. Effective March 15, 1999, Department of State jurisdiction shall apply to any instance where a replacement license would normally be required from the Department of Commerce. Transferring registration or operational control to any foreign person of any item controlled by this entry must be authorized on a license issued by the Department of State, Office of Defense Trade Controls. This requirement applies whether the item is physically located in the United States or abroad.

4.) All other “spacecraft” not controlled under 9A004 and their payloads, and specifically designed or modified components, parts, accessories, attachments, and associated equipment, including ground support equipment, are subject to the export licensing authority of the Department of State unless otherwise transferred to the Department of Commerce via a commodity jurisdiction determination by the Department of State.

5.) Exporters requesting a license from the Department of Commerce for “spacecraft” and their associated parts and components, other than the international space station, must provide a statement from the Department of State, Office of Defense Trade Controls, verifying that the item intended for export is under the licensing jurisdiction of the Department of Commerce. All specially designed or modified components, parts, accessories, attachments, and associated equipment for “spacecraft” that have been determined by the Department of State through the commodity jurisdiction process to be under the licensing jurisdiction of the Department of Commerce and that are not controlled by any other ECCN on the Commerce Control List will be assigned a classification under this ECCN 9A004.

6.) Technical data required for the detailed design, development, manufacturing, or

production of the international space station (to include specifically designed parts and components) remains under the jurisdiction of the Department of State. This control by the ITAR of detailed design, development, manufacturing or production technology for NASA’s international space station does not include that level of technical data necessary and reasonable for assurance that a U.S.-built item intended to operate on NASA’s international space station has been designed, manufactured, and tested in conformance with specified requirements (e.g., operational performance, reliability, lifetime, product quality, or delivery expectations). All technical data and all defense services, including all technical assistance, for launch of the international space station, including launch vehicle compatibility, integration, or processing data, are controlled and subject to the jurisdiction of the Department of State, in accordance with 22 CFR parts 120 through 130.

Items:

a. The international space station being developed, launched and operated under the supervision of the U.S. National Aeronautics and Space Administration. Hardware specific to the international space station transferred to the Department of Commerce by commodity jurisdiction action is also included.

b. Specific items as may be determined to be not subject to the ITAR through the commodity jurisdiction procedure administered by the Department of State after March 15, 1999.

9A005 Liquid rocket propulsion systems containing any of the systems or components controlled by 9A006. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A006 Systems and components specially designed for liquid rocket propulsion systems. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A007 Solid rocket propulsion systems. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A008 Components specially designed for solid rocket propulsion systems. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A009 Hybrid rocket propulsion systems. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A010 Specially designed components, systems and structures for launch vehicles, launch vehicle propulsion systems or "spacecraft". (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A011 Ramjet, scramjet or combined cycle engines and specially designed components therefor. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A018 Equipment on the International Munitions List.

License Requirements

Reason for Control: NS, RS, AT, UN

| <i>Control(s)</i> | <i>Country Chart</i> |
|-----------------------------|--|
| NS applies to entire entry | NS Column 1 |
| RS applies to 9A018.a and b | RS Column 2 |
| AT applies to entire entry | AT Column 1 |
| UN applies to entire entry | Rwanda; Federal Republic of Yugoslavia (Serbia and Montenegro) |

License Exceptions

LVS: \$1500, except N/A for Rwanda and for the Federal Republic of Yugoslavia (Serbia and Montenegro)
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: Equipment in number; parts and accessories in \$ value
Related Controls: (a) Parachute systems designed for use in dropping military equipment, braking military aircraft, slowing spacecraft descent, or retarding weapons delivery; AND (b) Instrument flight trainers for combat simulation are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. (See 22 CFR part 121, Category VIII.)
Related Definition: This entry controls parachute systems designed for use in

dropping personnel only.

Items:

a. Military trainer aircraft bearing "T" designations:

a.1. Using reciprocating engines; or

a.2. Turbo prop engines with less than 600 horse power (h.p.);

a.3. T-37 model jet trainer aircraft; and

a.4. Specially designed component parts.

b. Vehicles specially designed or modified for military purposes. (See §770, Interpretation 8)

c. Pressure refuelers, pressure refueling equipment, and equipment specially designed to facilitate operations in confined areas; and ground equipment, n.e.s., developed specially for military aircraft and helicopters, and specially designed parts and accessories, n.e.s.;

d. Pressurized breathing equipment specially designed for use in military aircraft and helicopters;

e. Military parachutes and complete canopies, harnesses, and platforms and electronic release mechanisms therefor, except such types as are in normal sporting use;

f. Military instrument flight trainers, except for combat simulation; and components, parts, attachments and accessories specially designed for such equipment.

9A101 Lightweight turbojet and turbofan engines (including turbocompound engines) usable in "missiles", other than those controlled by 9A001, as follows (see List of Items Controlled).

License Requirements

Reason for Control: MT, AT

| | |
|-------------------|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
|-------------------|----------------------|

| | |
|----------------------------|-------------|
| MT applies to entire entry | MT Column 1 |
|----------------------------|-------------|

| | |
|----------------------------|-------------|
| AT applies to entire entry | AT Column 1 |
|----------------------------|-------------|

License Exceptions

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Unit: Equipment in number; parts and accessories in \$ value

Related Controls: 1.) Items controlled in 9A101.b are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls (see 22 CFR part 121). 2.) Engines designed or modified for missiles (except engines for non-military unmanned air vehicles [UAVs] or remotely piloted vehicles [RPVs]), regardless of thrust or specific fuel consumption, are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. (See 22 CFR part 121.)

Related Definitions: N/A

Items:

a. Engines having both of the following characteristics:

a.1. Maximum thrust value greater than 1000 N (achieved un-installed) excluding civil certified engines with a maximum thrust value greater than 8,890 N (achieved un-installed), and

a.2. Specific fuel consumption of 0.13 kg/N/hr or less (at sea level static and standard conditions); *or*

b. Engines designed or modified for use in "missiles".

licensing authority of the U.S. Department of State, Office of Defense Trade Controls (See 22 CFR part 121).

Related Definitions: N/A

Items:

9A104 Sounding rockets, capable of a range of at least 300 km. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

a. Ablative liners for thrust or combustion chambers;

b. Rocket nozzles;

c. Thrust vector control sub-systems;

9A105 Liquid propellant rocket engines. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

Technical Note: Examples of methods of achieving thrust vector control controlled by 9A106.c includes:

1. Flexible nozzle;

2. Fluid or secondary gas injection;

3. Movable engine or nozzle;

4. Deflection of exhaust gas steam (jet vanes or probes); *or*

5. Thrust tabs.

9A106 Liquid rocket propulsion systems or components, other than those controlled by 9A006, usable in rockets with a range capability of 30 Km or greater, as follows (see List of Items Controlled).

d. Liquid and slurry propellant (including oxidizers) control systems, and specially designed components therefor, designed or modified to operate in vibration environments of more than 10 g rms between 20 Hz and 2000 Hz.

License Requirements

Reason for Control: MT, AT

Control(s) Country Chart

MT applies to entire entry MT Column 1

AT applies to entire entry AT Column 1

License Exceptions

LVS: N/A

GBS: N/A

CIV: N/A

Note: The only servo valves and pumps controlled by 9A106.d, are the following:

a. Servo valves designed for flow rates of 24 liters per minute or greater, at an absolute pressure of 7 Mpa or greater, that have an actuator response time of less than 100 ms;

b. Pumps, for liquid propellants, with shaft speeds equal to or greater than 8,000 rpm or with discharge pressures equal to or greater than 7 Mpa.

List of Items Controlled

Unit: Equipment and components in number; parts and accessories in \$ value

Related Controls: Items described in 9A106.a, .b, and .c are subject to the export

9A107 Solid propellant rocket engines, usable in rockets with a range capability of 300 Km or greater, other than those controlled by 9A007, having total impulse capacity of 0.841 Mns or greater. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A108 Solid rocket propulsion components, other than those controlled by 9A008, usable in rockets with a range capability of 300 Km or greater. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A109 Hybrid rocket motors, usable in rockets with a range capability of 300 Km or greater, other than those controlled by 9A009, and specially designed components therefor. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A110 Composite structures, laminates and manufactures thereof, other than those controlled by entry 9A010, specially designed for use in "missiles" or the subsystems controlled by entries 9A005, 9A007, 9A105.a, 9A106 to 9A108, 9A116 or 9A119, and resin impregnated fiber prepregs and metal coated fiber preforms therefor, made either with organic matrix or metal matrix utilizing fibrous or filamentary reinforcements having a specific tensile strength greater than 7.62×10^4 m and a specific modulus greater than 3.18×10^6 m.

License Requirements

Reason for Control: MT, AT

Control(s) Country Chart

MT applies to entire entry MT Column 1

AT applies to entire entry AT Column 1

License Exceptions

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Unit: Kilograms

Related Controls: 1.) See also 1A002, 1C010, and 1C210. 2.) The only resin impregnated fiber prepregs controlled by entry 9A110 are those using resins with a glass transition temperature (T_g), after cure, exceeding 418 K (145 °C) as determined by ASTM D4065 or equivalents. 3.) "Composite structures, laminates, and manufactures thereof, specially designed for use in missile systems are under the licensing authority of the Office of Defense Trade Controls, U.S. Department of State, except those specially designed for non-military unmanned air vehicles controlled in 9A120.

Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading.

9A111 Pulse jet engines, usable in "missiles", and specially designed components therefor. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A115 Launch support equipment, designed or modified for "missiles". (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A116 Reentry vehicles, usable in "missiles", and equipment designed or modified therefor. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A117 Staging mechanisms, separation mechanisms, and interstages, usable in "missiles". (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A118 Devices to regulate combustion usable in engines which are usable in rockets with a range capability greater than 300 Km or greater, controlled by 9A011 or 9A111. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A119 Individual rocket stages, usable in rockets with a range capability greater than 300 Km or greater, other than those controlled by 9A005, 9A007, 9A009, 9A105, 9A107 and 9A109. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9A120 Non-military unmanned air vehicle systems (UAVs) and remotely piloted vehicles (RPVs) that are capable of a maximum range of at least 300 kilometers (km), regardless of payload.

License Requirements

Reason for Control: MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

LVS: N/A
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: Equipment in number; parts and accessories in \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9A980 Nonmilitary mobile crime science laboratories; and parts and accessories, n.e.s.

License Requirements

Reason for Control: CC

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| CC applies to entire entry | CC Column 1 |

License Exceptions

LVS: N/A
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9A990 Diesel engines, n.e.s., and tractors and specially designed parts therefor, n.e.s.

License Requirements

Reason for Control: AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|---|----------------------|
| AT applies to entire entry except 9A990.a | AT Column 1 |
| AT applies to 9A990.a only | AT Column 2 |

License Exceptions

LVS: N/A
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

a. Diesel engines, n.e.s., for trucks, tractors, and automotive applications of continuous brake

horsepower of 400 BHP (298 kW) or greater (performance based on SAE J1349 standard conditions of 100 Kpa and 25°)

b. Off highway wheel tractors of carriage capacity 9 mt (20,000 lbs) or more; and parts and accessories, n.e.s.

c. On-Highway tractors, with single or tandem rear axles rated for 9 mt per axel (20,000 lbs.) or greater and specially designed parts.

9A991 "Aircraft", n.e.s., and gas turbine engines not controlled by 9A001 or 9A101 and parts and components, n.e.s.

License Requirements

Reason for Control: AT, UN

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|--|
| AT applies to entire entry | AT Column 1 |
| UN applies to 9A991.a | Rwanda; Federal Republic of Yugoslavia (Serbia and Montenegro) |

License Exceptions

LVS: N/A
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: Number
Related Controls: N/A
Related Definitions: N/A
Items:

a. Military aircraft, demilitarized (not specifically equipped or modified for military operation), as

follows:

Control(s)

Country Chart

a.1. Cargo, "C-45 through C-118" inclusive, and "C-121,"

AT applies to entire entry

AT Column 1

a.2. Trainers, bearing a "T" designation and using piston engines,

License Exceptions

LVS: N/A

GBS: N/A

CIV: N/A

a.3. Utility, bearing a "U" designation and using piston engines,

a.4. Liaison, bearing an "L" designation, and

List of Items Controlled

Unit: Number

Related Controls: N/A

Related Definitions: N/A

Items:

a.5. Observation, bearing an "O" designation and using piston engines;

b. Civil aircraft; *and*

The list of items controlled is contained in the ECCN heading.

Note: Specify make and model of aircraft and type of avionic equipment on aircraft.

c. Aero gas turbine engines, and specially designed parts therefor.

B. TEST, INSPECTION AND PRODUCTION EQUIPMENT

Note: 9A991.c does not control aero gas turbine engines that are destined for use in civil "aircraft" and that have been in use in bona fide civil "aircraft" for more than eight years.

9B001 Specially designed equipment, tooling and fixtures, as follows (see List of Items Controlled), for manufacturing or measuring gas turbine blades, vanes or tip shroud castings.

d. Aircraft parts and components, n.e.s.

License Requirements

Reason for Control: NS, MT, AT

e. Pressurized aircraft breathing equipment, n.e.s.; *and* specially designed parts therefor, n.e.s.

Control(s)

Country Chart

9A992 Complete canopies, harnesses, and platforms and electronic release mechanisms therefor, except such types as are in normal sporting use.

NS applies to entire entry

NS Column 1

License Requirements

Reason for Control: AT

MT applies only to equipment for engines that meet the characteristics described in 9A001

MT Column 1

AT applies to entire entry AT Column 1

License Requirement Notes: See §743.1 of the EAR for reporting requirements for exports under License Exceptions.

License Exceptions

LVS: \$5000, except N/A for MT
 GBS: Yes, except N/A for MT
 CIV: Yes, except N/A for MT

List of Items Controlled

Unit: \$ value
Related Controls: For specially designed production equipment of systems, sub-systems and components controlled by 9A005 to 9A009, 9A011, 9A101, 9A105 to 9A109, 9A111, and 9A116 to 9A119 usable in "missiles" see 9B115. See also 9B991.
Related Definitions: N/A
Items:

- a. Directional solidification or single crystal casting equipment;
- b. Ceramic cores or shells.

9B002 On-line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, specially designed for the "development" of gas turbine engines, assemblies or components incorporating "technologies" controlled by 9E003.a.

License Requirements

Reason for Control: NS, MT, AT

Control(s) Country Chart

NS applies to entire entry NS Column 1

MT applies only to equipment MT Column 1
 for engines that meet the characteristics described in 9A001

AT applies to entire entry AT Column 1

License Exceptions

LVS: \$3000, except N/A for MT
 GBS: Yes, except N/A for MT
 CIV: Yes, except N/A for MT

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9B003 Equipment specially designed for the "production" or test of gas turbine brush seals designed to operate at tip speeds exceeding 335 m/s, and temperatures in excess of 773 K (500° C), and specially designed components or accessories therefor.

License Requirements

Reason for Control: NS, MT, AT

Control(s) Country Chart

NS applies to entire entry NS Column 1
 MT applies only to equipment MT Column 1
 for engines that meet the characteristics described in 9A001

AT applies to entire entry AT Column 1

License Exceptions

LVS: \$5000, except N/A for MT
 GBS: Yes, except N/A for MT
 CIV: Yes, except N/A for MT

List of Items Controlled

Unit: \$ value
Related Controls: See also 9B115
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9B004 Tools, dies or fixtures for the solid state joining of "superalloy", titanium or intermetallic airfoil-to-disk combinations described in 9E003.a.3 or 9E003.a.6 for gas turbines.

License Requirements

Reason for Control: NS, MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|---|----------------------|
| NS applies to entire entry | NS Column 1 |
| MT applies only to equipment for engines that meet the characteristics described in 9A001 | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

LVS: \$3000, except N/A for MT
 GBS: Yes, except N/A for MT
 CIV: Yes, except N/A for MT

List of Items Controlled

Unit: Number
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9B005 On-line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, specially designed for use with any of the following wind tunnels or devices (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| NS applies to entire entry | NS Column 1 |
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

LVS: N/A
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: \$ value
Related Controls: See also 9B105
Related Definitions: N/A
Items:

a. Wind tunnels designed for speeds of Mach 1.2 or more, except those specially designed for educational purposes and having a test section size (measured laterally) of less than 250 mm;

9B008 Transducers specially designed for the direct measurement of the wall skin friction of the test flow with a stagnation temperature exceeding 833 K (560° C).

AT applies to entire entry

AT Column 1

License Requirements

Reason for Control: NS, AT

Control(s) Country Chart

NS applies to entire entry NS Column 2

AT applies to entire entry AT Column 1

License Exceptions

LVS: \$5000
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: Number
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9B009 Tooling specially designed for producing turbine engine powder metallurgy rotor components capable of operating at stress levels of 60% of ultimate tensile strength (UTS) or more and metal temperatures of 873 K (600° C) or more.

License Requirements

Reason for Control: NS, AT

Control(s) Country Chart

NS applies to entire entry NS Column 2

License Exceptions

LVS: \$5000
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: Equipment in number; parts and accessories in \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9B105 Wind tunnels for speeds of Mach 0.9 or more, usable for "missiles" and their subsystems.

License Requirements

Reason for Control: MT, AT

Control(s) Country Chart

MT applies to entire entry MT Column 1

AT applies to entire entry AT Column 1

License Exceptions

LVS: N/A
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: \$ value
Related Controls: See also 9B005
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9B106 Environmental chambers and anechoic chambers, as follows (see List of Items Controlled).

License Requirements

Reason for Control: MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

LVS: N/A
 GBS: N/A
 CIV: N/A

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

a. Environmental chambers capable of simulating the following flight conditions:

- a.1. Altitudes of 15,000 m or greater; *or*
- a.2. Temperature of at least 223 K (-50°C) to 398 K (+ 125°C) and vibration environments of 10 g rms or greater between 20 Hz and 2,000 Hz and imparting forces of 5 Kn or greater.

b. Anechoic chambers capable of simulating the following flight conditions:

- b.1. Altitudes of 15,000 m or greater; *or*

b.2. Temperature of at least 223 K (-50°C) to 398 K (+ 125°C) and acoustic environments at an overall sound pressure level of 140 Db or greater (referenced to 20 microPa) or with a rated power output of 4 kW or greater.

9B115 Specially designed "production equipment" for the systems, sub-systems and components controlled by 9A005 to 9A009, 9A011, 9A101, 9A105 to 9A109, 9A111, 9A116 to 9A119. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9B116 Specially designed "production facilities" for the systems, sub-systems, and components controlled by 9A004 to 9A009, 9A011, 9A101, 9A104 to 9A109, 9A111, 9A116 to 9A119. (These items are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9B117 Test benches and test stands for solid or liquid propellant rockets or rocket motors, having either of the following characteristics (see List of Items Controlled).

License Requirements

Reason for Control: MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

LVS: N/A
 GBS: N/A

CIV: N/A

List of Items Controlled

Unit: \$ value

Related Controls: See also 9B990

Related Definitions: N/A

Items:

- a. The capacity to handle more than 90 Kn of thrust; *or*
- b. Capable of simultaneously measuring the three axial thrust components.

9B990 Vibration test equipment and specially designed parts and components, n.e.s.

License Requirements

Reason for Control: AT

Control(s) Country Chart

AT applies to entire entry AT Column 1

License Exceptions

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Unit: \$ value

Related Controls: N/A

Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading.

9B991 Specially designed equipment, tooling or fixtures, not controlled by 9B001, as described in the List of Items Controlled, for manufacturing or measuring gas turbine blades, vanes or tip shroud castings.

License Requirements

Reason for Control: AT

Control(s) Country Chart

AT applies to entire entry AT Column 1

License Exceptions

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Unit: \$ value

Related Controls: N/A

Related Definitions: N/A

Items:

- a. Automated equipment using non-mechanical methods for measuring airfoil wall thickness;
- b. Tooling, fixtures or measuring equipment for the "laser", water jet or ECM/EDM hole drilling processes controlled by 9E003.c;
- c. Ceramic core leaching equipment;
- d. Ceramic core manufacturing equipment or tools;
- e. Ceramic shell wax pattern preparation equipment;
- f. Ceramic shell burn out or firing equipment.

C. MATERIALS
[RESERVED]

D. SOFTWARE

9D001 "Software" required for the "development" of equipment or "technology" controlled by 9A (except 9A018, 9A990 or 9A991), 9B (except 9B990 or 9B991) or 9E003.

License Requirements

Reason for Control: NS, MT, AT

| | |
|-------------------|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
|-------------------|----------------------|

| | |
|--|-------------|
| NS applies to "software" for items controlled by 9A001 to 9A003, 9B001 to 9B009, 9E003 | NS Column 1 |
|--|-------------|

| | |
|---|-------------|
| MT applies to "software" for equipment controlled by 9A001, 9A101, 9A106, 9A110, 9A120, 9B001, 9B002, 9B003, 9B004, 9B005, 9B007, 9B105, 9B106, 9B116, and 9B117 for MT reasons | MT Column 1 |
|---|-------------|

| | |
|----------------------------|-------------|
| AT applies to entire entry | AT Column 1 |
|----------------------------|-------------|

License Requirement Notes: See §743.1 of the EAR for reporting requirements for exports under License Exceptions.

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: \$ value
Related Controls: 1.) See also 9D101. 2.)

"Software" "required" for the "development" of items controlled by 9A004 is subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. (See 22 CFR part 121.) 3.) "Software" "required" for the "development" of equipment or "technology" subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls is also subject to the same licensing jurisdiction. (See 22 CFR part 121.)

Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading.

9D002 "Software" required for the "production" of equipment controlled by 9A (except 9A018, 9A990 or 9A991) or 9B (except 9B990 or 9B991).

License Requirements

Reason for Control: NS, MT, AT

| | |
|-------------------|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
|-------------------|----------------------|

| | |
|---|-------------|
| NS applies to "software" for equipment controlled by 9A001 to 9A003 or 9B001 to 9B009 | NS Column 1 |
|---|-------------|

| | |
|---|-------------|
| MT applies to "software" for equipment controlled by 9A001, 9A101, 9A106, 9A110, 9A120, 9B001, 9B002, 9B003, 9B004, 9B005, 9B007, 9B105, 9B106, 9B116, and 9B117 for MT reasons | MT Column 1 |
|---|-------------|

| | |
|----------------------------|-------------|
| AT applies to entire entry | AT Column 1 |
|----------------------------|-------------|

License Requirement Notes: See §743.1 of the EAR for reporting requirements for exports under License Exceptions.

License Exceptions

CIV: N/A
 TSR: N/A

MT applies to "software" required for the "use" of FADEC for gas turbine engines controlled by 9A101, 9A106, or 9A110 MT Column 1

List of Items Controlled

Unit: \$ value
Related Controls: 1.) "Software" "required" for the "production" of items controlled by 9A004 is subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. (See 22 CFR part 121.) 2.) "Software" "required" for the "production" of equipment or "technology" subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls is also subject to the same licensing jurisdiction. (See 22 CFR part 121.)
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9D003 "Software" required for the "use" of full authority digital electronic engine controls (FADEC) for propulsion systems controlled by 9A (except 9A018, 9A990 or 9A991) or equipment controlled by 9B (except 9B990 or 9B991), as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, AT

| | |
|--|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
| NS applies to "software" for "use" of FADEC for equipment controlled by 9A001 to 9A003 | NS Column 1 |

AT applies to entire entry AT Column 1

License Exceptions

CIV: Yes, except N/A for MT
 TSR: Yes, except N/A for MT

List of Items Controlled

Unit: \$ value
Related Controls: 1.) See also 9D103. 2.) "Software" "required" for the "use" of items controlled by 9A004 is subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. (See 22 CFR part 121.) 3.) "Software" "required" for the "use" of equipment or "technology" subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls is also subject to the same licensing jurisdiction. (See 22 CFR part 121.)
Related Definitions: N/A
Items:

- a. "Software" in digital electronic controls for propulsion systems, aerospace test facilities or air breathing aero-engine test facilities;
- b. Fault-tolerant "software" used in "FADEC" systems for propulsion systems and associated test facilities.

9D004 Other "software", as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, AT

| | |
|----------------------------|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
| NS applies to entire entry | NS Column 1 |
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

- a. 2D or 3D viscous "software" validated with wind tunnel or flight test data required for detailed engine flow modelling;
- b. "Software" for testing aero gas turbine engines, assemblies or components, specially designed to collect, reduce and analyze data in real time, and capable of feedback control, including the dynamic adjustment of test articles or test conditions, as the test is in progress;
- c. "Software" specially designed to control directional solidification or single crystal casting;
- d. "Software" in "source code", "object code" or machine code required for the "use" of active compensating systems for rotor blade tip clearance control.

Note: 9D004.d does not control "software" embedded in uncontrolled equipment or required for maintenance activities associated with the calibration or repair or updates to the active compensating clearance control system.

9D018 "Software" for the "use" of equipment controlled by 9A018.

License Requirements

Reason for Control: NS, RS, AT, UN

| | |
|------------------------------|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
| NS applies to entire entry | NS Column 1 |
| RS applies to 9A018.a and .b | RS Column 2 |
| AT applies to entire entry | AT Column 1 |

UN applies to entire entry Rwanda; Federal Republic of Yugoslavia (Serbia and Montenegro)

License Exceptions

CIV: N/A
 TSR: Yes for Australia, Japan, New Zealand, and NATO only

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9D101 "Software" specially designed for the "use" of goods controlled by 9B105, 9B106, 9B116 or 9B117.

License Requirements

Reason for Control: MT, AT

| | | |
|----------------------------|----------------------|--|
| <i>Control(s)</i> | <i>Country Chart</i> | licensing authority of the U.S. Department of State, Office of Defense Trade Controls (see 22 CFR part 121). |
| MT applies to entire entry | MT Column 1 | <i>Related Definitions:</i> N/A |
| AT applies to entire entry | AT Column 1 | <i>Items:</i> |

License Exceptions

The list of items controlled is contained in the ECCN heading.

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9D103 "Software" specially designed for modelling, simulation or design integration of "missiles", or the subsystems controlled by 9A005, 9A007, 9A105.a, 9A106, 9A108, 9A116 or 9A119. (This entry is subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. See 22 CFR part 121.)

9D102 "Software" specially designed for the "use" of items controlled by 9A101, 9A106, 9A110, and 9A120.

9D990 "Software", n.e.s., for the "development" or "production" of equipment controlled by 9A990 or 9B990.

License Requirements

Reason for Control: MT, AT

License Requirements

Reason for Control: AT

| | |
|----------------------------|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

| | |
|---|----------------------|
| <i>Control(s)</i> | <i>Country Chart</i> |
| AT applies to "software" for equipment under 9A990 except 9A990.a | AT Column 1 |

License Exceptions

CIV: N/A
 TSR: N/A

AT applies to "software" for equipment under 9A990.a only

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: \$ value
Related Controls: "Software" for items controlled by 9A115 are subject to the export

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9D991 "Software", for the "development" or "production" of equipment controlled by 9A991 or 9B991.

License Requirements

Reason for Control: AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| AT applies to entire entry | AT Column 1 |

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

E. TECHNOLOGY

Note: "Development" or "production" "technology" controlled by 9E001 to 9E003 for gas turbine engines remains controlled when used as "use" "technology" for repair, rebuild and

overhaul. Excluded from control are: technical data, drawings or documentation for maintenance activities directly associated with calibration, removal or replacement of damaged or unserviceable line replaceable units, including replacement of whole engines or engine modules.

9E001 "Technology" according to the General Technology Note for the "development" of equipment or "software" controlled by 9A001.c, 9A004 to 9A011, 9B (except 9B990 or 9B991), or 9D (except 9D990 or 9D991).

License Requirements

Reason for Control: NS, MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|--|----------------------|
| NS applies to "technology" for items controlled by 9A001.c, 9B001 to 9B009, 9D001 to 9D004 | NS Column 1 |

MT applies to "technology" for items controlled by 9B001, 9B002, 9B003, 9B004, 9B005, 9B007, 9B105, 9B106, 9B116, 9B117, 9D001, 9D002, 9D003, and 9D004 for MT reasons

AT applies to entire entry AT Column 1

License Requirement Notes: See §743.1 of the EAR for reporting requirements for exports under License Exceptions.

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: N/A

Related Controls: 1.) See also 9E101 and 1E002.f (for controls on "technology" for the repair of controlled structures, laminates or materials). 2.) The "technology" required for the "development" of equipment controlled by 9A004 is subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. (See 22 CFR part 121.) 3.) "Technology", required for the "development" of equipment or "software" subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls, is also subject to the same licensing jurisdiction. (See 22 CFR part 121).

Related Definitions: "Development" or "production" "technology" controlled by 9E for gas turbine engines remains controlled when used as "use" "technology" for repair, rebuild and overhaul. Excluded from control are: technology, drawings or documentation for maintenance activities directly associated with calibration, removal or replacement of damaged or unserviceable line replaceable units, including replacement of whole engines or engine modules.

Items:

The list of items controlled is contained in the ECCN heading.

9E002 "Technology" according to the General Technology Note for the "production" of equipment controlled by 9A001.c, 9A004 to 9A011 or 9B (except 9B990 or 9B991).

License Requirements

Reason for Control: NS, MT, AT

Control(s)

Country Chart

NS applies to entire entry

NS Column 1

MT applies to "technology" for equipment controlled by 9B001, 9B002, 9B003, 9B004, 9B005, 9B007, 9B105, 9B106, 9B116, and 9B117 for MT reasons

MT Column 1

AT applies to entire entry

AT Column 1

License Requirement Notes: See §743.1 of the EAR for reporting requirements for exports under License Exceptions.

License Exceptions

CIV: N/A

TSR: N/A

List of Items Controlled

Unit: N/A

Related Controls: 1.) See also 9E102. 2.) See also 1E002.f for "technology" for the repair of controlled structures, laminates or materials. 3.) The "technology" required for the "development" of equipment controlled by 9A004 is subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls. (See 22 CFR part 121.) 4.) "Technology", required for the "development" of equipment or "software" subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls, is also subject to the same licensing jurisdiction. (See 22 CFR part 121).

Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading.

9E003 Other "technology", as follows (see List of Items Controlled).*Related Definitions:* N/A*Items:***License Requirements***Reason for Control:* NS, SI, AT*Control(s)* *Country Chart*

NS applies to entire entry NS Column 1

SI applies to 9E003.a.1 through a.12 and f. See §742.14 of the EAR for additional information.

AT applies to entire entry AT Column 1

License Requirement Notes: See §743.1 of the EAR for reporting requirements for exports under License Exceptions.**License Exceptions**

CIV: N/A

TSR: N/A

List of Items Controlled*Unit:* N/A

Related Controls: 1.) Hot section "technology" specifically designed, modified, or equipped for military uses or purposes, or developed principally with U.S. Department of Defense funding, is subject to the licensing authority of the U.S. Department of State. 2.) "Technology" is subject to the EAR when actually applied to a commercial aircraft engine program. Exporters may seek to establish commercial application either on a case-by-case basis through submission of documentation demonstrating application to a commercial program in requesting an export license from the Department Commerce in respect to a specific export, or in the case of use for broad categories of aircraft, engines, or components, a commodity jurisdiction determination from the Department of State.

a. "Technology" "required" for the "development", "production", or overhaul of the following commercial aircraft engines, components or systems:

a.1. Gas turbine blades, vanes or tip shrouds made from directionally solidified (DS) or single crystal (SC) alloys having (in the 001 Miller Index Direction) a stress-rupture life exceeding 400 hours at 1,273 K (1,000°C) at a stress of 200 MPa, based on the average property values;

a.2. Multiple domed combustors operating at average burner outlet temperatures exceeding 1,813 K (1,540° C) or combustors incorporating thermally decoupled combustion liners, non-metallic liners or non-metallic shells;

a.3. Components manufactured from any of the following:

a.3.a. Organic "composite" materials designed to operate above 588 K (315°C);

a.3.b. Metal "matrix" "composite", ceramic "matrix", intermetallic or intermetallic reinforced materials controlled by 1C007; or

a.3.c. "Composite" material controlled by 1C010 and manufactured with resins controlled by 1C008.

a.4. Uncooled turbine blades, vanes, tip-shrouds or other components designed to operate at gas path temperatures of 1,323 K (1,050°C) or more;

a.5. Cooled turbine blades, vanes or tip-shrouds, other than those described in 9E003.a.1, exposed to gas path temperatures of 1,643 K (1,370°C) or more;

a.6. Airfoil-to-disk blade combinations using

solid state joining;

a.7. Gas turbine engine components using "diffusion bonding" "technology" controlled by 2E003.b;

a.8. Damage tolerant gas turbine engine rotating components using powder metallurgy materials controlled by 1C002.b;

a.9. Full authority digital electronic engine control (FADEC) for gas turbine and combined cycle engines and their related diagnostic components, sensors and specially designed components;

a.10. Adjustable flow path geometry and associated control systems for:

a.10.a. Gas generator turbines;

a.10.b. Fan or power turbines;

a.10.c. Propelling nozzles;

Note 1: . Adjustable flow path geometry and associated control systems do not include inlet guide vanes, variable pitch fans, variable stators or bleed valves for compressors.

Note 2: 9E003.a.10 does not control "development" or "production" "technology" for adjustable flow path geometry for reverse thrust.

a.11. Wide chord hollow fan blades without part-span support;

b. "Technology" "required" for the "development" or "production" of any of the following:

b.1. Wind tunnel aero-models equipped with non-intrusive sensors capable of transmitting data from the sensors to the data acquisition system; *or*

b.2. "Composite" propeller blades or propfans capable of absorbing more than 2,000 kW at flight

speeds exceeding Mach 0.55;

c. "Technology" "required" for the "development" or "production" of gas turbine engine components using "laser", water jet, ECM or EDM hole drilling processes to produce holes having any of the following sets of characteristics:

c.1. All of the following:

c.1.a. Depths more than four times their diameter;

c.1.b. Diameters less than 0.76 mm; *and*

c.1.c. Incidence angles equal to or less than 25°; *or*

c.2. All of the following:

c.2.a. Depths more than five times their diameter;

c.2.b. Diameters less than 0.4 mm; *and*

c.2.c. Incidence angles of more than 25°;

Technical Note: For the purposes of 9E003.c, incidence angle is measured from a plane tangential to the airfoil surface at the point where the hole axis enters the airfoil surface.

d. "Technology" "required" for any of the following:

d.1. The "development" of helicopter power transfer systems or tilt rotor or tilt wing "aircraft" power transfer systems; *or*

d.2. The "production" of helicopter power transfer systems or tilt rotor or tilt wing "aircraft" power transfer systems;

e.1. "Technology" for the "development" or "production" of reciprocating diesel engine ground vehicle propulsion systems having all of

the following:

e.1.a. A box volume of 1.2 m³ or less;

e.1.b. An overall power output of more than 750 kW based on 80/1269/EEC, ISO 2534 or national equivalents; *and*

e.1.c. A power density of more than 700 kW/m³ of box volume;

Technical Note: Box volume: the product of three perpendicular dimensions measured in the following way:

Length: The length of the crankshaft from front flange to flywheel face;

Width: The widest of the following:

a. The outside dimension from valve cover to valve cover;

b. The dimensions of the outside edges of the cylinder heads; *or*

c. The diameter of the flywheel housing;

Height: The largest of the following:

a. The dimension of the crankshaft center-line to the top plane of the valve cover (or cylinder head) plus twice the stroke; *or*

b. The diameter of the flywheel housing.

e.2. "Technology" "required" for the "production" of specially designed components, as follows, for high output diesel engines:

e.2.a. "Technology" "required" for the "production" of engine systems having all of the following components employing ceramics materials controlled by 1C007:

e.2.a.1. Cylinder liners;

e.2.a.2. Pistons;

e.2.a.3. Cylinder heads; *and*

e.2.a.4. One or more other components (including exhaust ports, turbochargers, valve guides, valve assemblies or insulated fuel injectors);

e.2.b. "Technology" "required" for the "production" of turbocharger systems, with single-stage compressors having all of the following:

e.2.b.1. Operating at pressure ratios of 4:1 or higher;

e.2.b.2. A mass flow in the range from 30 to 130 kg per minute; *and*

e.2.b.3. Variable flow area capability within the compressor or turbine sections;

e.2.c. "Technology" "required" for the "production" of fuel injection systems with a specially designed multifuel (e.g., diesel or jet fuel) capability covering a viscosity range from diesel fuel (2.5 cSt at 310.8 K (37.8°C)) down to gasoline fuel (0.5 cSt at 310.8 K (37.8°C)), having both of the following:

e.2.c.1. Injection amount in excess of 230 mm³ per injection per cylinder; *and*

e.2.c.2. Specially designed electronic control features for switching governor characteristics automatically depending on fuel property to provide the same torque characteristics by using the appropriate sensors;

e.3. "Technology" "required" for the development" or "production" of high output diesel engines for solid, gas phase or liquid film (or combinations thereof) cylinder wall

lubrication, permitting operation to temperatures exceeding 723 K (450°C), measured on the cylinder wall at the top limit of travel of the top ring of the piston.

f. "Technology" not otherwise controlled in 9E003.a.1 through a.10 and currently used in the "development", "production", or overhaul of hot section parts and components of civil derivatives of military engines controlled on the U.S. Munitions List.

9E018 "Technology" for the "development", "production", or "use" of equipment controlled by 9A018.

License Requirements

Reason for Control: NS, RS, AT, UN

| <i>Control(s)</i> | <i>Country Chart</i> |
|------------------------------|--|
| NS applies to entire entry | NS Column 1 |
| RS applies to 9A018.a and .b | RS Column 2 |
| AT applies to entire entry | AT Column 1 |
| UN applies to entire entry | Rwanda; Federal Republic of Yugoslavia (Serbia and Montenegro) |

License Exceptions

CIV: N/A
 TSR: Yes for Australia, Japan, New Zealand, and NATO only

List of Items Controlled

Unit: N/A
Related Controls: N/A
Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading.

9E101 "Technology" according to the General Technology Note for the "development" or "production" of goods controlled by 9A101, 9A104 to 9A111 or 9A115 to 9A120.

License Requirements

Reason for Control: MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: N/A
Related Controls: "Technology" controlled by 9E101 for items in 9A101.b, 9A104, 9A105, to 9A109, 9A110 that are specially designed for use in missile systems and subsystems, 9A111, 9A115, and 9A116 to 9A120 are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls (see 22 CFR part 121).
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9E102 "Technology" according to the General Technology Note for the "use" of goods controlled by 9A004 to 9A011, 9A101, 9A104 to 9A111, 9A115 to 9A120, 9B105, 9B106, 9B115, 9B116, 9B117, 9D101 or 9D103.

License Requirements

Reason for Control: MT, AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| MT applies to entire entry | MT Column 1 |
| AT applies to entire entry | AT Column 1 |

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: N/A
Related Controls: 1.) For the purpose of this entry, "use" "technology" is limited to items controlled for MT reasons. 2.) "Technology" controlled by 9E102 for items subject to the export licensing jurisdiction of the Department of State in 9A004 to 9A011, 9A101.b, 9A104 to 9A109, 9A110 that are specially designed for use in missile systems and subsystems, 9A111, 9A115, 9A116 to 9A120, and 9D103 are subject to the export licensing authority of the U.S. Department of State, Office of Defense Trade Controls (see 22 CFR part 121).
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9E990 "Technology", n.e.s., for the "development" or "production" or "use" of equipment controlled by 9A990 or 9B990.

License Requirements

Reason for Control: AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|---|----------------------|
| AT applies to "technology" for equipment under 9A990 and 9B990 except 9A990.a | AT Column 1 |
| AT applies to "technology" for equipment under 9A990.a only | AT Column 2 |

License Exceptions

CIV: N/A
 TSR: N/A

List of Items Controlled

Unit: \$ value
Related Controls: N/A
Related Definitions: N/A
Items:

The list of items controlled is contained in the ECCN heading.

9E991 "Technology", for the "development", "production" or "use" of equipment controlled by 9A991 or 9B991.

License Requirements

Reason for Control: AT

| <i>Control(s)</i> | <i>Country Chart</i> |
|----------------------------|----------------------|
| AT applies to entire entry | AT Column 1 |

License Exceptions

CIV: N/A

TSR: N/A

EAR99 Items subject to the EAR that are *not* elsewhere specified in this CCL Category *or* in any other category in the CCL are designated by the number *EAR99*.

List of Items Controlled*Unit:* \$ value*Related Controls:* N/A*Related Definitions:* N/A*Items:*

The list of items controlled is contained in the ECCN heading.

9E993 Other "technology", not described by **9E003**, as follows (see List of Items Controlled).

License Requirements*Reason for Control:* AT*Control(s)**Country Chart*

AT applies to entire entry

AT Column 1

License Exceptions

CIV: N/A

TSR: N/A

List of Items Controlled*Unit:* \$ value*Related Controls:* N/A*Related Definitions:* N/A*Items:*

a. Rotor blade tip clearance control systems employing active compensating casing "technology" limited to a design and development data base; *or*

b. Gas bearing for turbine engine rotor assemblies.