

Ordinance of the Ministry Specifying Goods and Technologies Pursuant to Provisions of the Appended Table 1 of the Export Control Order and the Appended Table of the Foreign Exchange Order (Amendments up to Ordinance of the Ministry of Economy, Trade and Industry No. 55 of 2008 are reflected in Article 8, item (ix), Article 14-2, and Article 28)

(Ordinance of the Ministry of International Trade and Industry No. 49 of October 14, 1991)

This Ordinance of the Ministry specifying goods and technologies pursuant to provisions of the Appended Table 1 of the Export Control Order and the Appended Table of the Foreign Exchange Control Order is enacted as set forth hereinafter, pursuant to provisions of the Export Control Order (Cabinet Order No. 378 of 1949) and the Appended Table of the Foreign Exchange Control Order (Cabinet Order No. 260 of 1980).

(Re: Appended Table 1 of the Export Control Order)

Article 1 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 2 of the appended table 1 of the Export Control Order (referred to hereinafter as the "Export Order") shall fall under any of the following.

- (i) Nuclear fuel materials or nuclear source materials falling under any of the following
 - (a) Uranium or uranium compounds
 - (b) Thorium or thorium compounds
 - (c) Plutonium or plutonium compounds
 - (d) Nuclear fuel materials or nuclear source materials including 1 or 2 or more of the goods in (a) through (c)
- (ii) Nuclear reactors, components or auxiliaries thereof, or power-generating or propulsion equipment specially designed for use in vehicles, vessels, aircraft or space use, or for nuclear reactors for launching space crafts
- (iii) Deuterium or deuterium compounds with a hydrogen to deuterium atom number ratio exceeding 1/5,000
- (iv) Among artificial graphite with a boron content level less than 5/1,000,000 of the total weight and apparent specific gravity exceeding 1.50 at 20 degrees centigrade, those falling under any of the following

- (a) Artificial graphite for use in nuclear reactors
- (b) Artificial graphite usable in nuclear reactors (excluding those falling under (a))
- (v) Equipment specially designed for the separation or reprocessing of irradiated nuclear fuel materials or nuclear source materials, or components or controllers thereof
- (vi) Equipment for the separation of lithium isotopes, or equipment for the fabrication of nuclear fuel materials
- (vii) Equipment for the separation of uranium isotopes falling under any of the following, or auxiliaries thereof or components thereof
 - (a) Equipment utilizing gas diffusion methods
 - (b) Equipment utilizing centrifuge separation methods
 - (c) Equipment utilizing nozzle separation methods
 - (d) Equipment utilizing vortex methods
 - (e) Equipment utilizing chemical exchange methods
 - (f) Equipment utilizing laser separation methods
 - (g) Equipment utilizing plasma methods
 - (h) Equipment utilizing magnetic separation methods
- (viii) Frequency changers or components thereof falling under any of the following
 - (a) Frequency changers for gas centrifuges that fall under all of the following
 1. through 4. or components thereof
 1. Frequency changers with output of 3 or more phases and a frequency of 600 hertz or more and 2,000 hertz or less
 2. Frequency changers with output distortion ratio less than 2%
 3. Frequency changers with output frequency accuracy less than plus/minus 0.1%
 4. Frequency changers with ratio of input base wave power to output base wave power exceeding 80%
 - (b) Frequency changers falling under all of the following 1. through 4. (excluding those falling under (a))
 1. Frequency changers capable of yielding output of 40 watts or more
 2. Frequency changers with output of 3 or more phases and a frequency exceeding 600 hertz and less than 2,000 hertz
 3. Frequency changers with output distortion ratio less than 10%
 4. Frequency changers with output frequency accuracy less than plus/minus 0.1%
- (ix) Nickel powders with an average diameter less than 10 micrometers and a weight-based purity level of 99% or more, or porous metals produced thereof
- (x) Equipment used for the production of deuterium or deuterium compounds, or components or auxiliaries thereof that fall under any of the following

- (a) Equipment for the production of deuterium or deuterium compounds, (including concentration equipment), or components or auxiliaries thereof
- (b) Equipment used for the production of heavy water or components or auxiliaries thereof falling under any of the following (excluding those falling under (a))
 - 1. Shelf plate towers falling under all of the following i. through iii.
 - i. Towers utilizing fine-grain carbon steel
 - ii. Towers usable at pressure of 2 megapascals or more
 - iii. Towers having internal structural elements listed in 2.
 - 2. Internal structural elements of shelf plate towers and that fall under all of the following i. through iii.
 - i. Internal structural elements with a cross section area of 2.54 square meters or more and divided into 2 or more parts
 - ii. Internal structural elements designed to propel gases and fluids in contact counter to the current
 - iii. Internal structural elements utilizing materials corrosion-resistant against hydrogen sulfide
 - 3. Distillation columns used at low temperatures that fall under all of the following i. through iv.
 - i. Fine-grain stainless steel using steels without hydrogen embrittlement
 - ii. Distillation columns with a cross section area of 0.785 square meters or more and a length of 5 meters or more
 - iii. Distillation columns designed to be usable at -238 degrees centigrade or less
 - iv. Distillation columns designed to be usable within a pressure range from 0.5 megapascals or more to 5 megapascals or less
 - 4. Among filling materials designed to be usable in a vacuum distillation column, and phosphorus bronze subjected to a process that chemically improves wettability, those that are mesh-shaped
 - 5. Turboexpanders designed to be usable at -238 degrees centigrade or less with a hydrogen emission level of 1,000 kilograms per hour or more
 - 6. Ammonia synthesizers usable in equipment falling under (a)
 - 7. Pumps capable of circulating liquid ammonia containing potassium amide, that fall under all of the following i. through iii.
 - i. Pumps with a sealed structure
 - ii. Pumps usable within a pressure range from 1.5 megapascals or more to 60 megapascals or less
 - iii. Pumps with discharge exceeding 8.5 cubic meters per hour
- (x)-2 Equipment for the production of uranium trioxide, uranium hexafluoride, uranium dioxide, uranium tetrafluoride, metallic uranium or uranium tetrachloride, falling under any of the following, or auxiliaries or components

thereof

- (a) Equipment used for the production of uranium trioxide using uranium ore as raw materials
- (b) Equipment used for the production of uranium hexafluoride using uranium trioxide or uranium tetrafluoride as raw materials
- (c) Equipment used for the production of uranium dioxide using uranium trioxide or uranium hexafluoride as raw materials
- (d) Equipment used for the production of uranium tetrafluoride using uranium dioxide or uranium hexafluoride as raw materials
- (e) Equipment used for the production of metallic uranium using uranium tetrafluoride as raw materials
- (f) Equipment used for the production of uranium tetrachloride using uranium dioxide as raw materials
- (x)-3 Equipment used for the production of plutonium dioxide, plutonium oxalate, plutonium peroxide, plutonium trifluoride, plutonium tetrafluoride or metallic plutonium, or auxiliaries or components thereof
- (xi) Flow-forming machines or components thereof that fall under any of the following
 - (a) Among flow-forming machines capable of being controlled by numerically-controlled coordinate measurement equipment or computer, those with 3 or more rollers
 - (b) Mandrels designed to be capable of forming cylindrical rotors with an internal diameter exceeding 75 millimeters and less than 400 millimeters
- (xii) Deleted
- (xiii) Deleted
- (xiv) Among machine tools (limited to those capable of processing metals, ceramics and composite materials) to which an electronic controller with 2 or more axes capable of performing contour control can be attached, those falling under any of the following (a) through (d)
 - (a) Machine tools capable of lathe turning that fall under the following 1. and 2. (excluding those falling under 3.)
 - 1. Machine tools in which the precision of positioning of the rectilinear axes is 0.006 millimeters or less when measured by the measurement method specified by the International Standards Organization (ISO) (hereinafter referred to as "International Standard") ISO 230-2:1988
 - 2. Machine tools capable of processing items with a diameter exceeding 35 millimeters
 - 3. Bar work lathes materials are inserted from a spindle hole of which for process, and that fall under the following i. and ii.
 - i. Bar work lathes with the maximum diameter of material to be processed of 42 millimeters or less

- ii. Bar work lathes incapable of having a chuck attached
- (b) Machine tools capable of milling or boring that fall under any of the following 1. through 3. (excluding those falling under 4.)
 - 1. Machine tools in which the precision of positioning of the rectilinear axes is 0.006 millimeters or less when measured by the measurement method specified by International Standard ISO 230-2:1988
 - 2. Machine tools with 2 or more rotational axes capable of controlling contour
 - 3. Machine tools with 5 or more axes capable of controlling contour
 - 4. Milling machines falling under the following i. and ii.
 - i. Milling machines exhibiting a range of motion in the X-axis direction exceeding 2 meters specified by ISO 841 (numerically-controlled machine tools - axis and motion nomenclature)
 - ii. Milling machines in which the precision of positioning of the X-axis specified by ISO 841 exceeds 0.03 millimeters when measured by the measurement method specified by International Standard ISO 230-2:1988
- (c) Machine tools capable of grinding that fall under any of the following 1. through 3. (excluding those falling under 4. or 5.)
 - 1. Machine tools in which the precision of positioning of the rectilinear axes is 0.004 millimeters or less when measured by the measurement method specified by International Standard ISO 230-2:1988
 - 2. Machine tools with 2 or more rotational axes capable of controlling contour
 - 3. Machine tools with 5 or more axes capable of controlling contour
 - 4. A cylindrical exterior grinding machine, a cylindrical interior grinding machine, or a cylindrical interior-exterior grinding machine that falls under the following i. and ii.
 - i. A machine designed to grind objects with an external diameter or length of 150 millimeters or less
 - ii. A machine possessing only X-axis, Z-axis and C-axis as specified by ISO 841
 - 5. Jig grinding machines that do not fall under the following i. nor ii.
 - i. Among jig grinding machines possessing Z-axis specified by ISO 841, those the precision of positioning of the Z-axis of which is less than 0.004 millimeters when measured by the measurement method specified by International Standard ISO 230-2:1988
 - ii. Among jig grinding machines possessing W-axis specified by ISO 841, those the precision of positioning of the W-axis of which is less than 0.004 millimeters when measured by the measurement method specified by International Standard ISO 230-2:1988

- (d) Machine tools capable of performing electrical discharge machining (excluding wire electrical discharge machining), with 2 or more rotational axes capable of contour control
- (e) Machine tools designed only for the production of any of the following
 1. Gears
 2. Crank shafts or cam shafts
 3. Tools or blades
 4. Extruder worms
- (xv) Deleted
- (xvi) Deleted
- (xvii) Measurement equipment (including machine tools with a measurement function) that falls under any of the following
 - (a) Measurement equipment controlled by computers or numerically-controlled coordinate measurement equipment, that falls under the following 1. and 2.
 1. Measurement equipment with 2 or more measurement axes
 2. Measurement equipment possessing measurement axes for which the numerical value of the measurement uncertainty for the measurement axis, expressed in micrometers, is less than the numerical value of the length of said measurement axis, expressed in millimeters, multiplied by 0.001 and a value of 1.25 added, when measured using a method specified by a standard of the German Association of Engineers (VDI/VDE 2617) using a probe with a precision less than 0.2 micrometers.
 - (b) Measurement equipment measuring displacement along a straight line that falls under any of the following
 1. Non-contact type measurement systems with a resolution of 0.2 micrometers or less within a measurement range up to 0.2 millimeters
 2. Measurement systems using linear voltage differential transformers that fall under the following i. and ii.
 - i. Systems with a linearity of 0.1% or less within a measurement range up to 5 millimeters
 - ii. Systems exhibiting a drift of 0.1% per 24 hours or less when measured within a temperature range of 19 degrees centigrade or more and 21 degrees centigrade or less
 3. Measurement equipment falling under the following i. and ii.
 - i. Measurement equipment capable of measuring using a laser beam
 - ii. Measurement equipment capable of maintaining the properties in the following a. and b. for 12 hours within a temperature range of 19 degrees centigrade or more and 21 degrees centigrade or less and a pressure range of 80,000 pascals or more and 120,000 pascals or less

- a. Measurement equipment with a resolution of 0.1 micrometers or less within the largest measurement range over which measurement is capable of being performed
- b. Measurement equipment possessing a numerical value less than 0.2 added to the value obtained by multiplying the measurement uncertainty for the measurement axis, expressed in micrometers, by the length of that measurement axis, expressed in millimeters, by 0.0005, when measured using a method specified by a standard of the German Association of Engineers (VDI/VDE 2617).
- (c) Measurement equipment that measures angular displacement, and with a maximum angular location deviation of 0.00025 degrees or less, when measured using the method specified by a standard of the German Association of Engineers (VDI/VDE 2617) (excluding optical instruments that measure angular displacement using parallel light beams)
- (d) Measurement equipment capable of simultaneously measuring the length and angle of objects having curved shapes and that fall under the following
 - 1. and 2.
 - 1. Measurement equipment with a numerical value for the measurement uncertainty for measurement axes of 3.5 micrometers or less per 5 millimeters of measurement distance, when measured using methods specified by a standard of the German Association of Engineers (VDI/VDE 2617)
 - 2. Measurement equipment with a maximum angular position deviation of 0.02 degrees or less, when measured using methods specified by a standard of the German Association of Engineers (VDI/VDE 2617)
- (xviii) Induction furnaces, arc furnaces or plasma melting furnaces or electron-beam melting furnaces or auxiliaries thereof that fall under any of the following
 - (a) Vacuum induction furnaces or induction furnaces utilizing non-volatile gases (excluding those used for process of semiconductor wafers) and that fall under all of the following 1. through 3., or power units thereof with output of 5 kilowatts or more
 - 1. Furnaces capable of heating the interior thereof exceeding 850 degrees centigrade
 - 2. Furnaces having an induction coil with a diameter of 600 millimeters or less
 - 3. Furnaces with input from the power units of 5 kilowatts or more
 - (b) Among arc furnaces that melt and cast metals in a vacuum or under non-volatile gases, those possessing consumable electrodes with a capacity exceeding 1,000 cubic centimeters and less than 20,000 cubic centimeters, and capable of melting metals at in excess of 1,700 degrees centigrade or

- controllers or monitor equipment for the arc furnaces and that utilize computers
- (c) Among plasma melting furnaces or electron-beam melting furnaces with an output of 50 kilowatts or more that melt and cast metal in a vacuum or within non-volatile gases, those capable of melting metals at in excess of 1,200 degrees centigrade, and controllers or monitor equipment for the melting furnaces that utilize computers
 - (xix) Isostatic presses falling under the following (a) and (b) or controllers thereof or molds designed to be capable of use with isostatic presses
 - (a) Isostatic presses with a maximum pressure of 69 megapascals or more
 - (b) Isostatic presses with hollow cavities possessing an internal diameter which exceeds 152 millimeters
 - (xx) Robots (excluding operating robots and sequence robots) or end effectors that fall under any of the following, or controllers thereof
 - (a) Explosion-proof robots or end effectors as specified by Japan Industrial Standard C0930 (general provisions of explosion-proof structure of electrical apparatus) based on the Industrial Standardization Act (Act No. 185 of 1949) (hereinafter referred to as "Japan Industrial Standard") (excluding those used for painting)
 - (b) Robots or end effectors designed to be able to withstand irradiation with total absorption line volume exceeding 50,000 grays on a silicon conversion basis
 - (xxi) Vibration test equipment or components thereof that fall under any of the following
 - (a) Vibration test equipment digitally controlled and electrically powered that fall under the following 1. and 2.
 - 1. Equipment with an excitation force of 50 kilonewtons or more in a state with no test object present, and capable of generating vibrations with an acceleration effective value of 98 meters per second squared or more, in a frequency range from exceeding 20 hertz and less than 2,000 hertz.
 - 2. Equipment utilizing feedback control technology or closed-loop control technology
 - (b) Components of vibration test equipment and that fall under any of the following
 - 1. Components designed for use in control of vibration test equipment falling under (a), using programs for a vibration test, and performing digital control of vibration tests in real time in bandwidth exceeding 5 kilohertz
 - 2. Vibration generators usable for vibration test equipment falling under (a), with an excitation force of 50 kilonewtons or more in a state with no test object present

3. Parts of vibration tables or vibration generators capable of use for vibration test equipment falling under (a) and designed for use by connecting 2 or more vibration generators in order to generate vibrations with exciting force of 50 kilonewtons or more in a state with no test object present
- (xxii) Structural materials capable of use for gas centrifuge rotors that fall under any of the following
- (a) Among aluminum alloys (including forged alloy) with a tensile strength of 460 megapascals or more at 20 degrees centigrade, those with a shaft-like or cylindrical shape and an external diameter exceeding 75 millimeters
 - (b) Carbon fibers, aramid fibers or glass fibers, or prepreg made from carbon fibers or glass fibers, or molded products made with carbon fibers or aramid fibers, falling under any of the following
 1. Carbon fibers or aramid fibers that fall under any of the following
 - i. Fibers with a specific elastic modulus of 12,700,000 meters or more
 - ii. Fibers with a specific strength of 235,000 meters or more
 2. Glass fibers falling under the following i. and ii.
 - i. Glass fibers with a specific elastic modulus of 3,180,000 meters or more
 - ii. Glass fibers with a specific strength of 76,200 meters or more
 3. Prepreg consisting of carbon fibers or glass fibers falling under 1. or 2. and impregnated with thermosetting resin that fall under any of the following
 - i. Fibrous prepreg
 - ii. Tape-shaped prepreg with a width of 15 millimeters or less
 4. Cylindrical formed goods utilizing fibers falling under 1. or prepreg falling under 3. (limited to goods utilizing carbon fiber) with an internal diameter exceeding 75 millimeters and less than 400 millimeters
 - (c) Among maraging steels with a tensile strength of 2,050 megapascals or more at 20 degrees centigrade, those with the greatest value of dimensions exceeding 75 millimeters
 - (d) Among titanium alloys (including forged alloys) with a tensile strength of 900 megapascals or more at 20 degrees centigrade, those with a shaft-like or cylindrical shape and an external diameter exceeding 75 millimeters
- (xxiii) Metals, waste, or scrap of beryllium and beryllium alloys (limited to those with a beryllium content exceeding 50% of the total weight) or beryllium compounds, or primary or semi-finished products thereof
- (xxiv) Substances used as alpha sources for the detonation of nuclear weapons, or raw materials thereof that fall under any of the following
- (a) Bismuth with a weight-based purity level of 99.99% or more and a silver content less than 0.001% of the total weight

- (b) Radium 226, radium 226 alloys, radium 226 compounds or radium 226 mixtures, or primary or semi-finished products thereof (excluding those incorporated into and installed in medical devices, where the total radioactivity per device is less than 0.37 gigabecquerels)
- (c) Radionuclide emitting alpha rays, with an alpha decay half-life of 10 days or more and less than 200 years, or compounds or mixtures thereof (excluding those installed in equipment, for which the total radiation from alpha decay per device is less than 3.7 gigabecquerels), and with total radiation from alpha decay per kilogram of 37 gigabecquerels or more
- (xxv) Boron, boron compounds or boron mixtures, or primary or semi-finished products thereof, comprised of concentrated boron with a boron 10 to boron 10 and boron 11 ratio greater than the ratio in nature, or anything containing such boron
- (xxvi) Substances used as reducing or oxidizing agents for the production of nuclear fuel materials and that fall under any of the following
 - (a) Calcium falling under the following 1. and 2.
 - 1. Calcium with a content ratio of metals other than calcium or magnesium less than 0.1% of the total weight
 - 2. Calcium with a boron content ratio less than 0.001% of the total weight
 - (b) Chlorotrifluorine
 - (c) Magnesium falling under the following 1. and 2.
 - 1. Magnesium with a content ratio of metals other than magnesium or calcium less than 0.02% of the total weight
 - 2. Magnesium with a boron content ratio less than 0.001% of the total weight
- (xxvii) Crucibles made with materials corrosion-resistant against actinide that fall under any of the following
 - (a) Crucibles with a capacity exceeding 0.15 liters and less than 8 liters, made from or coated with any of the following (limited to those with a weight-based purity level of 98% or more)
 - 1. Calcium fluoride
 - 2. Calcium metazirconate
 - 3. Cerium sulfide
 - 4. Erbium oxide
 - 5. Hafnium oxide
 - 6. Magnesium oxide
 - 7. Nitride of alloys containing niobium, titanium and tungsten
 - 8. Yttrium oxide
 - 9. Zirconium oxide
 - (b) Crucibles with a capacity exceeding 0.05 liters and less than 2 liters, made from or lined with tantalum with a weight-based purity level of

- 99.9% or more
- (c) Among crucibles with a capacity exceeding 0.05 liters and less than 2 liters, made from or lined with tantalum with a weight-based purity level of 98% or more, those that are coated with tantalum carbide, tantalum nitride, tantalum boride, or a combination thereof
 - (xxviii) Metals, waste, or scrap of hafnium and hafnium alloys (limited to those with a hafnium content exceeding 60% of the total weight) or hafnium compounds (limited to those with hafnium content level exceeding 60% of the total weight), or primary or semi-finished products thereof
 - (xxix) Metals, waste or scraps of lithium or lithium alloys or lithium compounds or mixtures, or primary or semi-finished products thereof, comprising concentrated lithium with a lithium 6 to lithium 6 and lithium 7 ratio greater than the ratio in nature, or containing the lithium (excluding lithium compounds and lithium mixtures incorporated into thermo-luminescence dosimeters)
 - (xxx) Tungsten, tungsten carbide, or alloys with a tungsten content exceeding 90% of the total weight, weighing in excess of 20 kilograms, with a cylindrical shape and internal diameter exceeding 100 millimeters and less than 300 millimeters, or with a hollow hemispherical shape, and combinations of both shapes (excluding those designed for use in dead weight or gamma ray collimators)
 - (xxxi) Metals, waste, or scraps of zirconium or zirconium alloys (limited to alloys with a zirconium content exceeding 50% of the total weight), or zirconium compounds (limited to those with a hafnium content level less than 1/500 the zirconium content level), and primary or semi-finished products thereof (excluding leaf with a thickness 0.1 millimeters or less)
 - (xxxii) Electrolytic cells for fluorine production with a production capability exceeding 250 grams per hour
 - (xxxiii) Equipment for the production or assembly of gas centrifuge rotors, or components thereof, that fall under any of the following
 - (a) Equipment used for assembly gas centrifuge rotor tubes, baffle and end caps
 - (b) Equipment used to adjust the center axis of gas centrifuge separator rotor tubes
 - (c) Mandrels or molds used for manufacture of bellows (limited to those made from aluminum alloys, maraging steel, or fiber-reinforced composite materials) falling under the following all of 1. through 3.
 1. Mandrels or molds with an internal diameter exceeding 75 millimeters and less than 400 millimeters
 2. Mandrels or molds with a groove pitch of 12.7 millimeters or more
 3. Mandrels or molds with a groove depth exceeding 2 millimeters

- (xxxiv) Centrifugal balancing machines (excluding balancing machines that can measure unbalance on one plane) that fall under any of the following (excluding those falling under Article 3, item (xvii)-3, (b))
- (a) Centrifugal balancing machines designed to be capable of testing elastic rotors with a length of 600 millimeters or more that fall under all of the following 1. through 3.
 - 1. Centrifugal balancing machines capable of testing elastic rotors with an external diameter exceeding 75 millimeters, or with a journal diameter of 75 millimeters or more
 - 2. Centrifugal balancing machines capable of testing elastic rotors with a weight of 0.9 kilograms or more and 23 kilograms or less
 - 3. Centrifugal balancing machines capable of testing at 5,000 rounds per minute or more
 - (b) Centrifugal balancing machines designed to be capable of testing cylindrical rotors, and that fall under all of the following 1. through 4.
 - 1. Machines with a journal diameter exceeding 75 millimeters
 - 2. Machines capable of testing rotors of 0.9 kilograms or more and 23 kilograms or less
 - 3. Machines with a residual imbalance on the balancing plane of 0.01 kilograms millimeters or less per 1 kilogram
 - 4. Machines with a belt drive mechanism
- (xxxv) Filament winding machines falling under the following (a) and (b), or controllers thereof or mandrels
- (a) Among machines that perform positioning on filaments and carry out wrapping and winding operations, those with 2 or more axes capable of controlling both these operations in coordination
 - (b) Machines capable of manufacturing cylindrical rotors with a diameter exceeding 75 millimeters and less than 400 millimeters and a length of 600 millimeters or more
- (xxxvi) Gas laser oscillators, solid-state laser oscillators or dye laser oscillators that fall under any of the following
- (a) Metal vapor laser oscillators (limited to copper laser oscillators) designed for use within a wavelength range exceeding 500 nanometers and less than 600 nanometers, with an average output of 40 watts or more
 - (b) Argon ion laser oscillators designed for use within a wavelength range exceeding 400 nanometers and less than 515 nanometers, with an average output exceeding 40 watts
 - (c) Among carbon dioxide laser oscillators designed for use within a wavelength range exceeding 9,000 nanometers and less than 11,000 nanometers, designed to generate a pulse, those falling under all of the following 1. through 3.

1. Oscillators with a pulse repetition frequency exceeding 250 hertz
 2. Oscillators with an average output exceeding 500 watts
 3. Oscillators with a pulse width of 200 nanoseconds or less
- (d) Among excimer laser oscillators designed for use within a wavelength range exceeding 240 nanometers and less than 360 nanometers, and designed to generate a pulse, those falling under the following 1. and 2.
1. Oscillators with a pulse repetition frequency exceeding 250 hertz
 2. Oscillators with an average output exceeding 500 watts
- (e) Raman laser oscillators utilizing parahydrogen and designed for use at a wavelength of 16 micrometers, with a pulse repetition frequency exceeding 250 hertz
- (f) Alexandrite laser oscillators designed for use within a wavelength range exceeding 720 nanometers and less than 800 nanometers that fall under all of the following 1. through 3.
1. Oscillators with a pulse repetition frequency exceeding 125 hertz
 2. Oscillators with an average output exceeding 30 watts
 3. Oscillators with a laser beam spectral line width of 0.005 nanometers or less
- (g) Fixed laser oscillators with neodymium added, designed for use within a wavelength range exceeding 1,000 nanometers and less than 1,100 nanometers that fall under any of the following (excluding neodymium glass laser oscillators)
1. Among oscillators utilizing pulse excitation and a Q-switch and emitting a pulse with a pulse width of 1 nanosecond or more, those falling under any of the following
 - i. Oscillators emitting a single-transverse-mode pulse, and with an average output exceeding 40 watts
 - ii. Oscillators emitting a multi-transverse-mode pulse, and with an average output exceeding 50W
 2. Oscillators designed to generate a second harmonic within the frequency range exceeding 500 nanometers and less than 550 nanometers, and with an average output exceeding 40 watts
- (h) Dye laser oscillators designed for use within a wavelength range exceeding 300 nanometers and less than 800 nanometers that fall under any of the following
1. Variable wavelength laser oscillators emitting a single-mode pulse (excluding equipment that only performs laser beam amplification) that fall under all of the following i. through iii.
 - i. Oscillators with a pulse repetition frequency exceeding 1 kilohertz
 - ii. Oscillators with an average output exceeding 1 watt
 - iii. Oscillators with a pulse width less than 100 nanoseconds

2. Variable wavelength oscillator emitting a pulse that fall under all of the following i. through iii. (excluding those falling under 1.)
 - i. Oscillators with a pulse repetition frequency exceeding 1 kilohertz
 - ii. Oscillators with an average output exceeding 30 watts
 - iii. Oscillators with a pulse width less than 100 nanoseconds
- (xxxvii) Among mass spectrometers, capable of measuring ions with a mass of 230 or more expressed in atomic weight units, and capable of differentiating ions with an atomic weight difference less than 2, those falling under any of the following (a) through (f) (excluding those falling under (g)) or ion sources usable with the mass spectrometers
- (a) Mass spectrometers utilizing inductively-coupled plasma
 - (b) Mass spectrometers utilizing glow discharge
 - (c) Mass spectrometers utilizing thermal ionization
 - (d) Mass spectrometers possessing an ion source that ionizes by bombarding the materials under analysis with electrons, having an ionization chamber comprised of, lined or coated with materials corrosion-resistant against uranium hexafluoride
 - (e) Mass spectrometers possessing an ion source that ionizes utilizing a molecular beam of the materials under analysis that fall under any of the following
 1. Mass spectrometers possessing a cold trap capable of temperatures at - 80 degrees centigrade or less and an ionization chamber made of, lined or coated with stainless steel and molybdenum
 2. Mass spectrometers possessing an ionization chamber comprised of, lined or coated with materials corrosion-resistant against uranium hexafluoride
 - (f) Mass spectrometers possessing an ion source designed for ionization of actinides or fluorides thereof
 - (g) Mass spectrometers utilizing magnets or quadrupoles, that fall under all of the following 1. through 5.
 1. Mass spectrometers capable of measuring ions with a mass exceeding 320, expressed in atomic weight units
 2. Mass spectrometers possessing an ion source comprised of, or lined with nichrome or monel, or coated with nickel
 3. Mass spectrometers possessing an ion source that ionizes by bombarding the materials under analysis with electrons
 4. Mass spectrometers possessing a collector usable for isotope analysis
 5. Mass spectrometers capable of taking samples without stopping the flow of uranium hexafluoride gas
- (xxxviii) Pressure gauges or bellows valves that fall under any of the following
- (a) Absolute pressure gauges utilizing a sensor made from aluminum,

- aluminum alloys, nickel or nickel alloys with a nickel content exceeding 60% of the total weight that fall under any of the following
1. Absolute pressure gauges with a maximum measurable measurement range less than 13 kilopascals, with a precision less than 1% within the maximum measurable measurement range
 2. Absolute pressure gauges with a maximum measurable measurement range of 13 kilopascals or more and a precision less than 130 pascals
- (b) Bellows valves with a minimum diameter value of 5 millimeters or more, comprised of, lined with or coated with aluminum, aluminum alloys, nickel or nickel alloys (limited to those with a nickel content exceeding 60% of the total weight)
- (xxxix) Superconducting solenoid electromagnets that fall under all of the following (a) through (d) (excluding those designed for use of clinical magnetic resonance equipment)
- (a) Superconducting solenoid electromagnets with magnetic flux density exceeding 2 teslas
 - (b) Superconducting solenoid electromagnets, the coil length of which divided by an internal diameter exceeds 2
 - (c) Superconducting solenoid electromagnets with a coil internal diameter exceeding 300 millimeters
 - (d) A circle with the radius of 35% of the internal diameter, centered on the center of the coil axis, and with a magnetic field homogeneity less than 1% within the range of those perpendicular to the coil axis
- (xl) Among vacuum pumps with an intake internal diameter of 38 centimeters or more, those with an exhaust speed of 15,000 liters or more per second and an ultimate pressure less than 13.3 millipascals
- (xli) Direct current power units falling under any of the following
- (a) Among direct current power units with an output current of 500 amperes or more, those with a current or voltage fluctuation rate less than 0.1%, and capable of use for exceeding 8 consecutive hours under an output voltage of 100 volts or more
 - (b) Among direct current power units with an output voltage of 20,000 volts or more, those with a current or voltage fluctuation rate less than 0.1%, and capable of use for exceeding 8 consecutive hours with an output current of 1 ampere or more
- (xlii) Electron accelerators or flash X-ray generators falling under any of the following (excluding electron microscope components and medical equipment)
- (a) Electron accelerators or flash X-ray generators with a peak value for electron kinetic energy of 0.5 megaelectron volts or more and less than 25 megaelectron volts, and that fall under any of the following
 1. Electron accelerators or flash X-ray generators with a beam pulse

- duration of 1 microsecond or less, and with a value of 0.25 or more when 1,700 is multiplied by the result of multiplying the peak value of electron kinetic energy expressed in megaelectron volts raised to the 2.65 power by the total charge quantity of accelerated electrons, expressed in coulombs
2. Electron accelerators or flash X-ray generators with a beam pulse duration exceeding 1 microsecond, and having a value of 0.25 or more when 1,700 is multiplied by the result of multiplying the peak value of electron kinetic energy expressed in megaelectron volts raised to the 2.65 power is multiplied by the maximum charge quantity of electrons accelerated for 1 microsecond, expressed in coulombs
 - (b) Electron accelerators or flash X-ray generators with a peak electron kinetic energy of 25 megaelectron volts or more and a peak output exceeding 50 megawatts
- (xliii) Impact testing machines capable of supporting a maximum projectiles velocity of 2 kilometers per second or more
- (xliv) Mechanical or electronic streak cameras or framing cameras or components thereof that fall under any of the following
- (a) Mechanical streak cameras or framing cameras, utilizing a rotating reflector, that fall under any of the following, or components thereof
 1. Streak cameras with a photographing speed exceeding 0.5 millimeters per microsecond
 2. Framing cameras with a photographing speed exceeding 225,000 frames per second
 - (b) Electronic streak cameras or framing cameras (including those utilizing electrically triggered shutters) and components thereof and that fall under any of the following
 1. Streak cameras or streak tubes with a time resolution of 50 nanoseconds or less
 2. Framing cameras (including those utilizing electrically triggered shutters) and with a shutter speed of 50 nanoseconds or less
 3. Fixed imaging elements or electron tubes for framing cameras falling under 2. (excluding those falling under 4.) and with a shutter speed less than 50 nanoseconds
 4. Electron tubes and electrically triggered shutters usable in framing cameras falling under 2. and that fall under any of the following
 - i. Image intensifier tubes possessing a photocathode coated with electrical conductive materials
 - ii. SIT tubes having shutter capabilities
 - iii. Electrically triggered shutters utilizing Kerr cells or Pockel cells
- (xlv) Interferometers for measuring fluid velocities, manganin pressure gauges,

- or quartz pressure transducers that fall under any of the following
- (a) Interferometers for measuring fluid speeds falling under the following 1. and 2.
 - 1. Interferometers capable of measuring speeds exceeding 1 kilometers per second
 - 2. Interferometers capable of measuring speeds at intervals less than 10 microseconds
 - (b) Manganin pressure gauges capable of measuring fluid pressure, or quartz pressure transducers, capable of measuring pressures exceeding 10 gigapascals
 - (xlvi) Cold-cathode tubes having 3 or more electrodes and that fall under all of the following (a) through (c)
 - (a) Cold-cathode tubes with a peak anode voltage of 2,500 volts or more
 - (b) Cold-cathode tubes with a peak anode current of 100 amperes or more
 - (c) Cold-cathode tubes with a anode delay time of 10 microseconds or less
 - (xlvii) Among trigger spark gaps with a cathode delay time of 15 microseconds or less, those with a peak current of 500 amperes or more
 - (xlviii) Assemblies having switching capabilities that fall under all of the following (a) through (c)
 - (a) Assemblies with a peak anode voltage exceeding 2,000 volts
 - (b) Assemblies with a peak anode current of 500 amperes or more
 - (c) Assemblies with a turn-on time of 1 microsecond or less
 - (xlix) Pulse condensers falling under any of the following
 - (a) Pulse condensers possessing a rated voltage exceeding 1,400 volts that fall under all of the following 1. through 3.
 - 1. Pulse condensers with a total energy exceeding 10 joules
 - 2. Pulse condensers with a nominal capacitance exceeding 0.5 microfarads
 - 3. Pulse condensers with series inductance less than 50 nanohenries
 - (b) Pulse condensers with a rated voltage exceeding 750 volts, and that fall under the following 1. and 2.
 - 1. Pulse condensers with a nominal capacitance exceeding 0.25 microfarads
 - 2. Pulse condensers with series inductance less than 10 nanohenries
 - (l) Pulse generators or xenon flashlamp drivers that fall under any of the following
 - (a) Modular pulse generators or xenon flashlamp drivers that fall under all of the following 1. through 6.
 - 1. Modular pulse generators or xenon flashlamp drivers capable of supplying a pulse for less than 15 microseconds
 - 2. Modular pulse generators or xenon flashlamp drivers with an output exceeding 100 amperes
 - 3. Modular pulse generators or xenon flashlamp drivers that require pulse

- rise times less than 10 microseconds against a resistance load less than 40 ohms
4. Modular pulse generators or xenon flashlamp drivers with the largest dimensional value of 25.4 centimeters or less
 5. Modular pulse generators or xenon flashlamp drivers with a weight less than 25 kilograms
 6. Modular pulse generators or xenon flashlamp drivers designed to be usable from below -50 degrees centigrade to over 100 degrees centigrade, or designed to be usable for space use
- (b) Pulse generators generating pulses with voltage exceeding 6 volts against a resistance load less than 55 ohms, and requiring a pulse rise time less than 500 picoseconds (excluding those falling under (a))
- (li) Deleted
- (lii) Among photomultiplier tubes with photocathode area exceeding 20 square centimeters, those with an anode pulse rise time less than 1 nanosecond
- (liii) Neutron generators utilizing electrostatic acceleration to induce a tritium-deuterium nuclear reaction designed to be operable without using a vacuum pump
- (liv) Remote manipulators used in the prevention of radioactive exposure, and operable behind a radiation shielding wall with a thickness of 0.6 meters or more
- (lv) Radiation shielding windows and that fall under all of the following (a) through (c), or frames thereof
- (a) Windows with an area exceeding 0.09 square meters for the surface that protrudes into the cold area
 - (b) Windows made from materials with a density exceeding 3 grams per cubic centimeters
 - (c) Windows with a thickness of 100 millimeters or more
- (lvi) TV cameras or lenses specially designed for protection from the influence of radiation, and capable of withstanding radiation with total absorption exceeding 50,000 grays on a silicon conversion basis
- (lvii) Tritium, tritium compounds or tritium mixtures, with a ratio of tritium atomicity to hydrogen atomicity exceeding 1/1,000 (excluding those installed in equipment, with total radioactivity per 1 equipment less than 1,480 gigabecquerels)
- (lviii) Equipment used for the production, collection or preservation of tritium that falls under any of the following
- (a) Equipment designed for the production (including that for concentration), collection or preservation of tritium
 - (b) Equipment used for the production, collection or preservation of tritium that falls under any of the following (excluding that falling under (a))

1. Freezing equipment capable of cooling hydrogen or helium to -250 degrees centigrade or less, and with a freezing capacity exceeding 150 watts
 2. Equipment for the storage of hydrogen isotopes that utilizes metal hydrides as storage catalyst
- (lix) Platinized catalysts for the collection of tritium from heavy water or for the production of heavy water, and designed to promote hydrogen isotope exchange between hydrogen and water
- (lx) Helium with a helium-3 mixing rate greater than the mixing rate in nature (excluding helium-3 sealed in containers or equipment with a weight less than 1 gram)

Article 2 (1) Goods specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 3 (i) of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Substances for raw materials of chemical warfare agents falling under any of the following or mixtures containing the substances, wherein the content of any of the substances exceeds 30 % of the total weight
- (a) 3-hydroxy-1-methylpiperidine
 - (b) Potassium fluoride
 - (c) Ethylene chlorohydrin
 - (d) Dimethylamine
 - (e) Dimethylamine hydrochloride
 - (f) Hydrogen fluoride
 - (g) Methyl benzilate
 - (h) 3-quinuclidinone
 - (i) Pinacolone
 - (j) Potassium cyanide
 - (k) Potassium bifluoride
 - (l) Ammonium bifluoride
 - (m) Sodium bifluoride
 - (n) Sodium fluoride
 - (o) Sodium cyanide
 - (p) Phosphorous pentasulfide
 - (q) Diisopropylamine
 - (r) 2-diethylamino ethanol
 - (s) Sodium sulfide
 - (t) Triethanolamine hydrochloride
 - (u) Diethyl thiophosphoric acid
 - (v) Diethyl dithio phosphoric acid
 - (w) Sodium hexafluorosilicic acid

- (x) Phosphorous acid triisopropyl
- (ii) Substances having equivalent toxic ability with chemical warfare agents falling under any of the following or mixtures containing such a substance (for mixtures containing a substance falling under (c) through (e), limited to those for which the content of said substance exceeds 1 % of the total weight, and for mixtures containing a substance falling under (f) through (i), limited to those for which the content of the substance exceeds 30 % of the total weight)
 - (a) Saxitoxin
 - (b) Lysin
 - (c) O,O-diethyl=S-[2-(diethylamino)ethyl] = phosphorothiolate and alkylate salts and protonate salts thereof
 - (d) 1,1,3,3,3-pentafluoro-2-(trifluoromethyl)-1-propane
 - (e) 3-quinuclidinyl = benzilate
 - (f) Carbonyl dichloride
 - (g) Cyanogen chloride
 - (h) Hydrogen cyanide
 - (i) Trichloronitromethane
- (iii) Substances having equivalent toxic ability with chemical warfare agents falling under any of the following or mixtures containing the substances (for mixtures containing substances falling under (f) through (p), limited to those for which the content of said substance exceeds 10 % of the total weight, and for mixtures containing a substance falling under categories (q) through (cc), limited to those for which the content of said substance exceeds 30 % of the total weight)
 - (a) Alkyl phosphonyl difluoride (limited to those having an alkyl group carbon number of 3 or less)
 - (b) O-alkyl = O-2-dialkylaminoethyl = alkyl phosphonite (including those O-alkyl alkyl group of which is a cycloalkyl group, though limited to those O-alkyl alkyl group carbon number of which is 10 or less and O-2-dialkylaminoethyl or alkyl phosphonite alkyl group carbon number of which is 3 or less) as well as alkylate salts and protonate salts thereof
 - (c) O-2-dialkylaminoethyl = hydrogen = alkyl phosphonite (limited to those O-2-dialkylaminoethyl or alkyl phosphonite alkyl group carbon number of which is 3 or less) as well as alkylate salts and protonate salts thereof
 - (d) O-isopropyl = methyl phosphonochloridate
 - (e) O-pinacolyl = methyl phosphonochloridate
 - (f) Compounds containing phosphorus atoms having no bond with a carbon atom other than a bond with one alkyl group carbon number of which is 3 or less
 - (g) N,N-dialkyl phosphoramidic = dihalide (limited to those with alkyl group

- carbon number of 3 or less)
 - (h) Dialkyl = N,N-dialkyl phosphoramidate (limited to those with dialkyl or N,N-dialkyl phosphoramidate alkyl group carbon number of 3 or less)
 - (i) Arsenic trichloride
 - (j) 2,2-diphenyl-2-hydroxyacetic acid
 - (k) Quinuclidine-3-ol
 - (l) N,N-dialkylaminoethyl-2-chloride (limited to those alkyl group carbon number of which is 3 or less) and protonate salts thereof
 - (m) N,N-dialkyl aminoethane-2-ol (limited to those alkyl group carbon number of which is 3 or less) and protonate salts thereof
 - (n) N,N-dialkyl aminoethane-2-thiol (limited to those alkyl group carbon number of which is 3 or less) and protonate salts thereof
 - (o) Bis(2-hydroxyethyl) sulfide
 - (p) 3,3-dimethylbutane-2-ol
 - (q) Phosphoryl chloride
 - (r) Phosphorous trichloride
 - (s) Phosphorous pentachloride
 - (t) Trimethyl phosphite
 - (u) Triethyl phosphite
 - (v) Dimethyl phosphite
 - (w) Diethyl phosphite
 - (x) Sulfur monochloride
 - (y) Sulfur bichloride
 - (z) Thionyl chloride
 - (aa) Ethyl diethanol amine
 - (bb) Methyl diethanol amine
 - (cc) Triethanolamine
- (2) Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 3 (ii) of the appended table 1 of the Export Order shall fall under any of the following.
- (i) Among reactor vessels or reactors having a capacity exceeding 0.1 cubic meters and less than 20 cubic meters of which all portions that come into contact with the contents, those composed of, lined with or coated with materials falling under any of the following
 - (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and a chrome content exceeding 20 % of the total weight
 - (c) Fluorine resin
 - (d) Glass
 - (e) Tantalum or tantalum alloys
 - (f) Titanium or titanium alloys

- (g) Zirconium or zirconium alloys
- (h) Niobium or niobium alloys
- (ii) Among storage tanks, containers or receivers having a capacity exceeding 0.1 cubic meters, those all portions that come into contact with the contents of which are composed of, lined with or coated with materials falling under any of the following
 - (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and chrome content exceeding 20 % of the total weight
 - (c) Fluorine resin
 - (d) Glass
 - (e) Tantalum or tantalum alloys
 - (f) Titanium or titanium alloys
 - (g) Zirconium or zirconium alloys
 - (h) Niobium or niobium alloys
- (iii) Among heat exchangers or condensers having a heat transfer area exceeding 0.15 square meters and less than 20 square meters, those all portions that come into contact with the contents of which are composed of, lined with or coated with materials falling under any of the following
 - (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and chrome content exceeding 20 % of the total weight
 - (c) Fluorine resin
 - (d) Glass
 - (e) Graphite or carbon graphite
 - (f) Tantalum or tantalum alloys
 - (g) Titanium or titanium alloys
 - (h) Zirconium or zirconium alloys
 - (i) Silicon carbide
 - (j) Titanium carbide
 - (k) Niobium or niobium alloys
- (iii)-2 Components of those listed in the preceding item and that fall under any of the following
 - (a) Tubes
 - (b) Plates
 - (c) Coils
 - (d) Blocks
- (iv) Among distillation or absorption columns with a cross section area exceeding 0.00785 square meters, those all parts that come into contact with the contents of which are composed of, lined with or coated with materials falling under any of the following

- (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
- (b) Alloys with a nickel content exceeding 25 % of the total weight and
chrome content exceeding 20 % of the total weight
- (c) Fluorine resin
- (d) Glass
- (e) Graphite or carbon graphite
- (f) Tantalum or tantalum alloys
- (g) Titanium or titanium alloys
- (h) Zirconium or zirconium alloys
- (i) Niobium or niobium alloys
- (iv)-2 Components of those listed in the preceding item and that fall under any
of the following
 - (a) Liquid dispensers
 - (b) Vapor dispensers
 - (c) Liquid collectors
- (v) Filling equipment capable of remote operation all portions that come into
contact with the contents of which are composed of, lined with or coated with
materials falling under any of the following
 - (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and a
chrome content exceeding 20 % of the total weight
- (vi) Among agitators used for those falling under item (i), those all portions
that come into contact with the contents of which are composed of, lined with
or coated with materials falling under any of the following
 - (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and
chrome content exceeding 20 % of the total weight
 - (c) Fluorine resin
 - (d) Glass
 - (e) Tantalum or tantalum alloys
 - (f) Titanium or titanium alloys
 - (g) Zirconium or zirconium alloys
 - (h) Niobium or niobium alloys
- (vi)-2 Components of those listed in the preceding item that fall under any of
the following
 - (a) Impellers
 - (b) Blades
 - (c) Shafts
- (vii) Valves nominal diameter of which is exceeding 10 A (i.e. 10mm) and all
portions that come into contact with the contents of which are composed of,
lined with or coated with materials falling under any of the following

- (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and a chrome content exceeding 20 % of the total weight
 - (c) Fluorine resin
 - (d) Glass
 - (e) Tantalum or tantalum alloys
 - (f) Titanium or titanium alloys
 - (g) Zirconium or zirconium alloys
 - (h) Niobium or niobium alloys
- (vii)-2 Components of those listed in the preceding item that fall under any of the following
- (a) Casings
 - (b) Casing liners
- (viii) Multi-walled piping provided with equipment for detecting content leaks all portions that come into contact with the contents of which are composed of, lined with or coated with materials falling under any of the following
- (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and chrome content exceeding 20 % of the total weight
 - (c) Fluorine resin
 - (d) Glass
 - (e) Graphite or carbon graphite
 - (f) Tantalum or tantalum alloys
 - (g) Titanium or titanium alloys
 - (h) Zirconium or zirconium alloys
 - (i) Niobium or niobium alloys
- (ix) Among pumps axes of which are sealed by 2 or more layers or seal-less pumps the maximum specified discharge volume of which exceeds 0.6 cubic meters per hour, or vacuum pumps the maximum specified discharge volume of which exceeds 5 cubic meters per hour, those in which all portions that come into contact with the contents of which are composed of, lined with, or coated with materials falling under any of the following
- (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and a chrome content exceeding 20 % of the total weight
 - (c) Fluorine resin
 - (d) Glass
 - (e) Graphite or carbon graphite
 - (f) Tantalum or tantalum alloys
 - (g) Titanium or titanium alloys
 - (h) Zirconium or zirconium alloys

- (i) Ceramic
- (j) Ferrosilicon
- (k) Niobium or niobium alloys
- (ix)-2 Components of pumps listed in the preceding item and that fall under any of the following
 - (a) Casings
 - (b) Casing liners
 - (c) Impellers
 - (d) Rotors
 - (e) Jet pump nozzles
- (x) Among incinerators average temperature of incineration chamber during use of which exceeds 1,000 degrees centigrade, portions for supplying the substance to be incinerated of which are composed of or coated with materials falling under any of the following
 - (a) Nickel or alloys with a nickel content exceeding 40 % of the total weight
 - (b) Alloys with a nickel content exceeding 25 % of the total weight and a chrome content exceeding 20 % of the total weight
 - (c) Ceramic
- (xi) Gas monitoring systems or dedicated detectors that fall under any of the following
 - (a) Systems capable of detecting those listed in the preceding paragraph even when the concentration in the air is less than 0.3 milligrams per cubic meter and capable of continuous use
 - (b) Systems capable of detecting compounds having an anticholinesterase effect

Article 2-2 (1) Goods specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 3-2 (i) of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Viruses (excluding vaccines): the African horse sickness virus, the African swine fever virus, the Ebola virus, the yellow fever virus, Aujeszky's disease virus, the Omsk hemorrhagic fever virus, the Oropouche virus, the Kyasanur Forest disease virus, the cattle plague virus, the rabies virus, the Crimean-Congo hemorrhagic fever virus, the foot-and-mouth disease virus, the monkeypox virus, the peste des petits ruminants virus, the vesicular stomatitis virus, the western equine encephalitis virus, the Saint Louis encephalitis virus, the tick-borne encephalitis virus, the Chikungunya virus, the louping ill virus, the Teschen disease virus, the dengue fever virus, the smallpox virus, the eastern equine encephalitis virus, the avian influenza virus (limited to those having the H5 or H7 H antigen), the swine fever virus, the Nipah virus, the Japanese encephalitis virus, the Newcastle disease

- virus, the hemorrhagic fever virus with pulmonary and renal syndromes, the Hantaan virus, porcine enterovirus type 9, the Junin virus, the blue tongue virus, the Venezuelan equine encephalitis virus, the Hendra virus, the potato Andean latent tymovirus, the potato spindle tuber viroid, the white pox virus, the Powassan virus, the Machupo virus, the Marburg virus, the Murray Valley encephalitis virus, the South American hemorrhagic fever, the goat pox virus, the sheep pox virus, the Lassa fever virus, the lumpy skin disease virus, the Rift Valley fever virus, the lymphocytic choriomeningitis virus, or the Rocio virus
- (ii) Bacteria (excluding vaccines): *Brucella abortus*, *Chlamydia psittaci*, the gas bacillus, *Coxiella burnetii*, *Mycoplasma mycoides*, the cholera bacillus, trench fever rickettsia, *Shigella dysenteriae*, *Bacillus anthracis*, the typhoid bacillus, enterohemorrhagic *Escherichia coli* serotype O157, *Rickettsia prowazekii*, *Actinobacillus mallei*, *Brucella suis*, *Bacillus pestis*, *Bacillus botulinus*, *Brucella melitensis*, *Bacillus tularensis*, *Pseudomonas pseudomallei*, or *Rickettsia rickettsii*
- (iii) Toxins (excluding immunotoxins): aflatoxin, abrin, *Clostridium welchii* toxin, HT-2 toxin, staphylococcal enterotoxin, conotoxin, cholera toxin, *Shigella dysenteriae* toxin, diacetoxyscirpenol toxin, T-2 toxin, tetrodotoxin, *Viscum album* lectin, verotoxin or Shiga toxin-like ribosome inactive protein, botulin toxin, Volkensin, microcystin, or modeccin
- (iv) Subunits of those falling under the preceding item or the preceding Article, paragraph (1), item (ii), (a) or (b)
- (v) Bacteria or fungi: *Clavibacter michiganensis* ssp. *sepedonicus*, *Coccidioides immitis*, *Coccidioides posadasii*, *Cochliobolus miyabeanus*, *Colletotrichum coffeanum* var. *virulans*, *Xanthomonas albilineans*, *Xanthomonas oryzae* pv. *oryzae*, *Xanthomonas campestris* pv. *citri*, *Pyricularia oryzae*, *Pyricularia grisea*, *Puccinia graminis*, *Puccinia striiformis*, *Microcyclus ulei*, or *Ralstonia solanacearum* race 2 or 3
- (vi) Genes (including chromosomes, genomes, plasmids, transposons, and vectors) having a base sequence of nucleic acids falling under item (i), item (ii), or the preceding item, wherein that base sequence of nucleic acids causes the expression of pathogenicity or the production of those falling under item (iii); or the previous Article, paragraph (1), item (ii), (a) or (b), or item (iv)
- (vii) Organisms (including microorganisms) the gene of which is altered such render a base sequence of nucleic acids falling under item (i), item (ii), or item (v), wherein that base sequence of nucleic acids causes the expression of pathogenicity or the production of substances falling under item (iii); or the previous Article, paragraph (1), item (ii), (a) or (b), or item (iv)
- (2) Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 3-2 (ii) of the appended table 1 of the

Export Order shall fall under any of the following.

- (i) Physical containment facilities falling under any of the following
 - (a) Equipment for facilities with physical containment level of P3 or P4
 - (b) Isolators having physical containment functions equivalent to those of class III safety cabinets
- (ii) Hermetically sealed fermenters, the capacity of which is 20 liters or more
- (iii) Continuous centrifuge separators falling under all of the following (a) through (d)
 - (a) Separators with a flow volume exceeding 100 liters per hour
 - (b) Separators comprised of polished stainless steel or titanium
 - (c) Separators having an axle sealed with a mechanical seal
 - (d) Separators capable of internal sterilization using vapor when fixed and in a closed state
- (iv) Cross (tangential) flow filtration equipment falling under the following (a) or (b) (excluding those using a reverse penetration membrane)
 - (a) Equipment with a total effective filtering area of 1 square meter or more
 - (b) Equipment capable of internal sterilization or disinfection in a fixed state
- (iv)-2 Components designed for use for those listed in the preceding item with an effective filtering area of 0.2 square meters or more
- (v) Freeze-drying equipment falling under the following (a) and (b)
 - (a) Equipment having the capacity to create 10 kilogram or more and less than 1,000 kilograms of ice in a 24-hour period
 - (b) Equipment capable of internal sterilization using vapor
- (vi) Among whole or half body clothing or hoods that possess protective equipment used in physical containment and airline ventilation use equipment, those capable of maintaining a positive internal pressure
- (vii) Aerosol inhalation chambers with the capacity of 1 square meter or more
- (viii) Spraying or fogging systems or components thereof, that fall under any of the following
 - (a) Spraying or fogging systems designed to be mounted in aircraft, airship, balloon, or unmanned aerial vehicles capable of dispersing droplets initial particles of which have a median cubic diameter less than 50 microns from an on-board liquid device at a rate exceeding 2 liters per minute
 - (b) A spray boom or nozzle for an aerosol generators designed to be mounted in aircraft, airship, balloon, or unmanned aerial vehicles capable of dispersing droplets, the initial particles of which have a median cubic diameter less than 50 microns from an on-board liquid spraying devices at a rate exceeding 2 liters per minute
 - (c) Aerosol generators designed to be used in a devices capable of dispersing droplets initial particles of which have a median cubic diameter less than 50 microns from an on-board liquid spraying device at a rate exceeding 2

liters per minute

Article 3 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 4 of the appended table 1 of the Export Order shall fall under any of the following.

(i) Rockets or equipment or tools (including molds; hereinafter the same shall apply in this Article) for the manufacture of rockets capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more, test equipment, or components thereof

(i)-2 Unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more

(i)-3 Among unmanned aerial vehicles designed to be capable of atomizing aerosol and capable of transporting payloads exceeding 20 liters in a particulate or liquid form in addition to fuel, and falling under any of the following (excluding those falling under the preceding item and model aircraft used for entertainment or sports)

(a) Vehicles having an autonomous flight control or navigation capability

(b) Vehicles having a function enabling flight control by a person exceeding the visible range

(ii) Goods falling under any of the following or equipment or tools for the manufacture thereof, or test equipment, or components thereof

(a) Goods usable in rockets capable of transporting payloads for 300 kilometers or more, and falling under any of the following

1. Individual stages of multiple-stage rockets

2. Solid rocket propulsion units or liquid rocket propulsion unit with the total impulse of 841,000 Newton-seconds or more

(b) Goods capable of use in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more, falling under any of the following

1. Re-entry vehicles

2. Thermal shields (limited to those using ceramic or abrasion materials) for re-entry vehicles or components thereof

3. Heat sinks for re-entry vehicles and components thereof

4. Electronics parts designed for use for re-entry vehicles

5. Guidance equipment with a ratio of average error radius to flight distance of 3.33 % or less

6. Thrust vector controllers

(iii) Propulsion units or components thereof, motor case linings, or insulation materials falling under any of the following, or equipment or tools for the manufacture thereof, or test equipment, or components thereof

(a) Turbojet engines or turbo fan engines falling under the following 1 and 2

1. Engines maximum thrust of which is 400 newtons or more when not mounted in an airframe (excluding those maximum thrust of which is 8,890 newtons or more when not mounted in an airframe and the use of which in private aircraft has been authorized by Japanese governmental institution)
 2. Engines fuel consumption of which at maximum continuous thrust is 0.15 kilograms per thrustnewton per hour or less in standard atmospheric conditions above the sea
- (b) Ramjet engines, scramjet engines, pulse jet engines, or combined cycle engines (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more) or components thereof
 - (c) Motor cases for solid rockets usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more
 - (d) Motor case linings for solid rockets (limited to those in which the propellant and motor case or insulation can be combined) usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more or designed for use in rockets or unmanned aircraft capable of transporting payloads weighing less than 500 kilograms for 300 kilometers or more
 - (e) Motor case insulation for solid rockets, usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more or designed for use in rockets or unmanned aircraft capable of transporting payloads weighing less than 500 kilograms for 300 kilometers or more
 - (f) Motor case nozzles for solid rockets usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more
 - (g) Control equipment for propellants in liquid or slurry states, the frequency range of which is 20 hertz or more and 2,000 hertz or less and designed to be capable of withstanding vibrations with effective acceleration rate exceeding 98 meters per second squared (limited to control equipment which can be used in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more) and components thereof (excluding servo valves and pumps)
 - (h) Hybrid rockets propulsion units (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more) or components thereof
 - (i) Tanks for liquid propellants designed for use in those falling under any of the following

1. Propellants falling under item (vii) or raw materials thereof
 2. Liquid propellants (excluding those falling under 1.) used in rockets capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more
- (iv) Separation mechanisms or staging mechanisms for multiple-stage rockets (limited to those usable for a rocket capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more), or equipment or tools for the manufacture thereof, or test equipment, or components thereof
 - (v) Flow-forming machines that can be controlled by numerically-controlled coordinate measurement equipment and computers, with 3 or more axes capable of contouring control, or components thereof
 - (vi) Among pumps usable for servo valves or controllers for propellants and that fall under any of the following (a) and (b), those falling under (c) or (d)
 - (a) Pumps designed for use in controllers for propellants in liquid or slurry states
 - (b) Pumps frequency range of which is 20 hertz or more and 2,000 hertz or less and designed to be able to withstand vibrations with effective acceleration rate exceeding 98 meters per second squared
 - (c) Pumps designed to allow a flow of 0.024 cubic meters per minute or more in a state wherein the absolute pressure is 7,000 kilopascals or more and the actuator response time of which is less than 100 milliseconds
 - (d) Pumps with the number of rotation of axles of 8,000 rotations per minute or more or discharge pressure of 7,000 kilopascals or more
 - (vi)-2 Among radial ball bearings designed for pumps usable for controllers for propellants precision of which is class 2 or more as specified in Japanese Industrial Standards B1514 (rolling bearing precision), those falling under all of the following (a) through (c)
 - (a) Bearings with an inner wheel internal diameter of 12 millimeters or more and 50 millimeters or less
 - (b) Bearings with an outer wheel external diameter of 25 millimeters or more and 100 millimeters or less
 - (c) Bearings with a width of 10 millimeters or more and 20 millimeters or less
 - (vii) Propellants or raw material thereof falling under any of the following
 - (a) Hydrazine with concentration exceeding 70 %
 - (b) A derivative of hydrazine
 - (c) Ammonium perchlorate
 - (d) Ammonium dinitramide
 - (e) Among aluminum powder the particles of which are globular and with diameter thereof less than 200 micrometers and with a weight-based purity level of 97 % or more, those the content of those diameter of which is less

- than 63 micrometers as measured by measurement method specified in International Organization for Standardization ISO 2591:1988 or standards equivalent thereto is 10 % or more of the total weight
- (f) Zirconium (containing hafnium contained in the zirconium at a natural ratio), beryllium, magnesium, or alloys thereof with a weight-based purity level of 97 % and in a powder state or more particle diameter of which is 60 micrometers or less
 - (g) Boron or alloy thereof with a weight-based purity level of 85 % or more by a yield-to-weight comparison and in a powder state particle diameter of which is 60 micrometers or less
 - (h) A perchlorate, a chlorate, or a chromate in which a powdered metal or fuel constituent is mixed
 - (i) Carborane, decaborane, or pentaborane, or a derivative thereof
 - (j) A liquid oxidizer falling under any of the following
 1. Dinitrogen trioxide
 2. Nitrogen dioxide or dinitrogen tetraoxide
 3. Dinitrogen pentoxide
 4. A mixture of nitrogen oxide
 5. Red fuming nitric acid having resistance to corrosion
 6. A compound made from fluorine or other halogens, oxygen, or nitrogen (excluding nitrogen trifluoride gas)
 - (k) Polybutadiene having a carboxyl group at its terminal
 - (l) Polybutadiene having a hydroxyl group at its terminal
 - (m) A glycidylamide polymer
 - (n) A polymer of butadiene and acrylic acid
 - (o) A polymer of butadiene, acrylonitrile, and acrylic acid
 - (p) A propellant with heating value of 40,000,000 joules per kilogram or more
 - (q) Tris-1-(2-methyl) aziridinyl phosphine oxide
 - (r) A reaction product of tetraethylenepentamine, acrylonitrile, and glycidol
 - (s) A reaction product of tetraethylenepentamine and acrylonitrile
 - (t) A multi-functional aziridineamide having an isophthal-, trimesin-, isocyanur-, or trimethyladipin- skeleton having a 2-methylaziridine group or a 2-ethylaziridine group
 - (u) Triphenylbismuth
 - (v) A ferrocene derivative
 - (w) Triethylene glycol dinitrate
 - (x) Trimethylolethane trinitrate
 - (y) 1,2,4-butanetrioltrinitrate
 - (z) Diethylene glycol dinitrate
 - (viii) Equipment or tools for the production of propellants or raw materials thereof, or test equipment or components thereof (excluding those falling

- under any of the next item through item (x)-2)
 - (a) Goods falling under the preceding item
 - (b) Octogen or hexagen
 - (c) A composite propellant
 - (d) 2-nitrodiphenylamine or N-methyl-P-nitroaniline
- (ix) Among batch mixers (excluding those for liquids) usable at an absolute pressure of 0 kilopascal or more and 13.326 kilopascals or less, those capable of controlling the temperature inside the mixing container, and falling under the following (a) and (b) or components thereof
 - (a) Mixers with total volume of 110 liters or more
 - (b) Mixers having at least one mixing axis or a kneading axis separated from the center axis thereof
- (ix)-2 Among continuous mixers (excluding those for liquids) capable of mixing at an absolute pressure of 0 kilopascal or more and 13.326 kilopascals or less, those capable of controlling the temperature inside the mixing container, and falling under the following, or components thereof
 - (a) Mixers having 2 or more mixing axles or kneading axles
 - (b) Mixers having one rotating axle with a vibration function and having a projection for kneading in the mixing container and on the rotating axle
- (x) Jet mills capable of pulverizing propellants falling under any of item (vii) or item (viii), (b) through (d) or raw materials thereof or components thereof
- (x)-2 Equipment for the production of powder (limited to atomized powders or globular powders) of metals falling under any of item (vii), (e) through (g) or components thereof
- (xi) Equipment for the production of composites, fibers, prepregs, or preforms (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more) and that falls under any of the following or parts or accessories thereof
 - (a) Among filament winding machines for positioning fibers and carrying out wrapping and winding operations, those with three or more axles capable of controlling those operations in a correlated manner or controllers thereof
 - (b) Among equipment for the production of airframes of an aircraft or the structure of rockets comprised of composites, and for positioning tape or sheets and carrying out lamination operations, those with 2 or more axles capable of controlling those operations in a correlated manner
 - (c) Weaving machines or interlacing machines capable of three-dimensional weaving
 - (d) Equipment for the production of fibers that falls under any of the following
 1. Equipment for the production of other fibers from polymer fibers
 2. Equipment for vapor depositing elements or compounds on substrates in

a heated filament form

3. Wet spinning apparatus for fire-resistant ceramics

- (e) Equipment designed for surface treating of fibers or the production of prepregs or preforms
- (xii) Nozzles used in fixing substances generated from the thermal decomposition of gas onto substrates (limited to that carried out in the temperature range 1,300 degrees centigrade or more and 2,900 degrees centigrade or less and the absolute pressure range of 130 pascals or more and 20,000 pascals or less) to substrates
- (xiii) Equipment for the production of nozzle of rocket propulsion systems or re-entry vehicle nose tips, and that falls under any of the following or process controls thereof
 - (a) Equipment for the densification of carbon of structural materials
 - (b) Equipment for fixing carbon generated from the thermal decomposition of gas onto substrates
- (xiv) Isostatic presses falling under all of the following (a) through (c) or controllers thereof
 - (a) Isostatic presses with maximum pressure of 69 megapascals or more
 - (b) Isostatic presses capable of temperature control in hollow cavities (limited to the case when the temperature of hollow cavities is 600 degrees centigrade or more)
 - (c) Isostatic presses, with an internal diameter of hollow cavities of 254 millimeters or more
- (xv) Furnaces designed for the densification of carbon of composites using carbon or carbon fibers for chemical vapor deposition or controllers thereof
- (xvi) Structural materials falling under any of the following
 - (a) Composites (excluding prepregs with glass transition points of 145 degrees centigrade or less) made from organic substances reinforced with fibers specific strength exceeding 76,200 meters and specific elastic modulus exceeding 3,180,000 meters or those with metal in the matrix phase, or molded products thereof (limited to rockets capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more, goods falling under item (ii) (limited to those usable for a rocket capable of transporting payloads weighing 500 kilograms or more), or those designed to be used in goods falling under item (ii))
 - (b) Composites using carbon and carbon fibers designed for rocket use or molded products thereof (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more)
 - (c) Artificial graphite falling under any of the following (limited to artificial graphite usable for rocket nozzles or re-entry vehicles nose tips)

1. Artificial graphite, the bulk density of which measured at 15 degrees centigrade is 1.72 grams per cubic centimeter or more and the particle diameter of which is 100 micrometers or less and which is capable of being processed into any of the following
 - i. Cylinders with a diameter of 120 millimeters or more and a length of 50 millimeters or more
 - ii. Pipes with internal diameters of 65 millimeters or more, thicknesses of 25 millimeters or more, and lengths of 50 millimeters or more
 - iii. Ingots from which a rectangular parallelepiped can be carved out, each of the dimensions of which is respectively 120 millimeters or more, 120 millimeters or more, and 50 millimeters or more
 2. Pyrolytic graphite (limited to that usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more)
 3. Graphite strengthened with fibers (limited to that usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more)
- (d) Composites of ceramics (limited to those with relative permittivity less than 6 in frequencies within the range of 100 megahertz or more and 100 gigahertz or less) for use in radomes (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more) of rockets or unfired ceramics strengthened with silicon carbide usable for nose tips of rockets or unmanned aerial vehicles (limited to those capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more)
- (e) Among tungsten or molybdenum or alloys thereof, in a powdered form the particle diameter of which is 500 micrometers or less (limited to atomized powders or globular powders usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more), with purity of 97 % or more, those usable for the production of parts for rocket propulsion units
- (f) Maraging steels (limited to boards or plates with thickness of 5 mm or less usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more) with a maximum tensile strength as measured at 20 degrees centigrade of 1,500,000,000 pascals or more
- (g) Austenitic-ferritic stainless steels stabilized by titanium, and that fall under the following 1 and 2 (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more)
1. Steels falling under all of the following i. through iii.

- i. Steels with a chrome content of 17 % or more and 23 % or less of the total weight and a nickel content of 4.5 % or more and 7 % or less of the total weight
 - ii. Steels with a titanium content exceeding 0.1 % of the total weight
 - iii. Steels with parts indicating an austenite structure of 10% or more of the total volume
- 2. Steels falling under any of the following
 - i. Ingots or rods with a smallest dimension value of 100 millimeters or more
 - ii. Sheets with a width of 600 millimeters or more and a thickness of 3 millimeters or less
 - iii. Tubes with an external diameter of 600 millimeters or more and a thickness of 3 millimeters or less
- (xvii) Accelerometers or gyroscopes, or equipment or navigation equipment using them, that falls under any of the following (limited to those usable in rockets or unmanned aerial vehicles) or components thereof
 - (a) Navigation equipment designed for use in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more and designed for use in a gyrostabilizer or automated flight controller
 - (b) Gyro-astro compasses, or devices that derive position or orientation by means of automatically tracking celestial bodies or satellites
 - (c) Linear accelerometers designed for use in inertial navigation systems or guidance systems with scale factor reproducibility less than 0.125 % and bias reproducibility less than 0.012263 meters per second squared (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more)
 - (d) Gyroscopes with drift rate stability less than 0.5 degrees per hour in a state of linear acceleration of 9.81 meters per second squared (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more)
 - (e) Accelerators or gyroscopes designed to be capable of use with linear acceleration exceeding 981 meters per second squared
 - (f) Equipment using accelerometers falling under (c) or (e) or gyroscopes falling under (d) or (e)
- (xvii)-2 Integrated navigation systems designed for use in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more, and with precision of an average error radius of 200 meters or less
- (xvii)-3 Accelerometers or gyroscopes or equipment using those, or equipment or tools for the production of navigation systems, or test equipment,

calibration equipment, or alignment equipment thereof, or components thereof, falling under any of the following

- (a) Production equipment or tools or test equipment, calibration equipment, or alignment equipment for those falling under preceding two items (excluding those falling under any of the following (b) through (f)), or components thereof
- (b) Centrifugal balancing machines (excluding those designed for testing dental equipment or medical equipment) falling under all of the following 1 through 4
 - 1. Machines that are not capable of testing rotors exceeding 3 kilograms
 - 2. Machines capable of testing rotors with speed exceeding 12,500 rotations per minute
 - 3. Machines capable of testing imbalance on 2 or more planes
 - 4. Machines with residual imbalance with respect to the rotor weight of 0.2 gram-millimeters per kilogram or less
- (c) Display equipment designed to be capable of use in machines falling under (b)
- (d) Motion simulators or rate tables falling under all of the following 1 through 3 (excluding those designed to be usable for machine tools or medical devices)
 - 1. Motion simulators or rate tables with 2 or more axes
 - 2. Motion simulators or rate tables having a slip ring capable of supplying electricity or transmitting signal information
 - 3. Motion simulators or rate tables falling under any of the following
 - i. Motion simulators or rate tables the angular velocity in any axes of which is 400 degrees or more or 30 degrees or less per second, wherein the resolution of the angular velocity is 6 degrees per second or less, and the precision of the angular velocity is 0.6 degrees per second or less
 - ii. Motion simulators or rate tables angular velocity of which is stabilized at the precision of 0.05 % or less when the rotation of any axes is 10 degrees or more
 - iii. Motion simulators or rate tables with angular positioning precision of 5 seconds or less
- (e) Positioning tables falling under the following 1 and 2 (excluding those designed for use in machine tools or medical devices)
 - 1. Positioning tables with 2 or more axes
 - 2. Positioning tables with angular positioning precision of 5 seconds or less
- (f) Centrifugal accelerator testing machines capable of applying an acceleration rate exceeding 980 meters per second squared, and that have a slip ring capable of supplying electricity and transmitting signal

information

(xviii) Flight controllers or attitude controllers designed for use in a rocket or unmanned aerial vehicle capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more

(xviii)-2 Servo valves designed for use for those listed in the preceding item, and designed to be able to withstand vibrations with the effective rate of acceleration exceeding 98 meters per second squared within the frequency range from 20 hertz to 2,000 hertz

(xviii)-3 Test equipment, calibration equipment, or alignment equipment for those listed in preceding two items

(xix) Avionics equipment falling under any of the following

(a) Radars (limited to those usable for rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more)

(b) Passive sensors for detecting the direction of a specific electromagnetic wave source or landform characteristics (limited to those designed for use in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more)

(c) Equipment for receiving radio waves from satellite navigational systems falling under the following 1 or 2, or components especially designed therefor

1. Equipment designed for use in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more

2. Equipment designed for use in mobile bodies that navigate or fly and that falls under any of the following

i. Equipment capable of providing information pertaining to navigation based on speeds exceeding 600 meters per second

ii. Equipment designed or improved for the purpose of use by the military or a governmental institution, and that has a function for decoding codes for accessing encoded signals or data used in a satellite navigational system (excluding those designed to receive navigational data for private use or for ensuring the safety of human life and physical safety)

iii. Equipment designed such as to have a null-steerable antenna, an antenna capable of electronic scanning, or other functions of impedance elimination for the purpose of functioning in an environment where intentional impedance is received (excluding those designed so as to receive navigational data for private use or for ensuring the safety of human life and physical safety)

(xx) Among gravity meters or gravity gradiometers for aircraft or ship

- mounting with precision of 0.7 milligals or less, those the time required for measurement of which is within 2 minutes (limited to those designed to be usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more) or components thereof
- (xxi) Launch pads or associated ground launch support equipment for rockets or unmanned aerial vehicles falling under any of the following
 - (a) Equipment designed for handling, controlling, operating, or launching rockets or unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more
 - (b) Vehicles designed for transporting, handling, controlling, operating, or launching rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more
 - (xxii) Radio telemetry equipment or radio telecontrollers (including ground equipment) designed for use in rockets or unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more and that does not fall under any of the following
 - (a) Equipment designed for use in manned aircraft or artificial satellites
 - (b) Equipment designed for use in mobile bodies used on land or the sea
 - (c) Equipment designed to receive information from satellite navigational systems for providing navigational data for private use or for ensuring the safety of human life and physical safety
 - (xxii)-2 Tracking devices usable in rockets or unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more, falling under any of the following
 - (a) Tracking devices using code converters mounted in rockets or unmanned aerial vehicles and capable of instantly measuring flight position and speed data in a mutual coordination with linked devices on ground, the sea or aircraft, or with a satellite navigational system
 - (b) Among radars for distance measurement having a tracking device utilizing light, those falling under all of the following 1 through 3
 - 1. Radars with angular resolution less than 3 milliradians
 - 2. Radars with the square mean value of distance resolution less than 10 meters and capable of measuring distances 30 kilometers or more
 - 3. Radars with speed resolution less than 3 meters per second
 - (xxiii) Analog computers or digital computers designed for use in a rocket capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more falling under any of the following
 - (a) Computers designed to be usable from below -45 degrees centigrade to over 55 degrees centigrade
 - (b) Computers designed to be able to withstand radiation irradiation total

- absorbed dose of which on a silicon conversion basis is 500,000 rads or more
- (xxiv) Integrated circuits for analog-to-digital conversion or analog-to-digital converters (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more), and that fall under any of the following
- (a) Integrated circuits for analog-to-digital conversion designed to be able to withstand radiation exposure, the total absorbed dose of which is 500,000 rads or more on a silicon conversion basis or those falling under all of the following 1 through 3
1. Integrated circuits with a resolution of 8 bits or more
 2. Integrated circuits designed to be usable from below -54 degrees centigrade to over 125 degrees centigrade
 3. Integrated circuits that are sealed airtight
- (b) Assemblies or modules for electronic input-type analog-to-digital conversion and that fall under all of the following 1 through 3
1. Assemblies or modules with a resolution of 8 bits or more
 2. Assemblies or modules designed to be usable from below -45 degrees centigrade to over 55 degrees centigrade
 3. Assemblies or modules that incorporate integrated circuit falling under (a)
- (xxv) Vibration test equipment or components thereof, wind tunnels, combustion test equipment, environmental test equipment, electron accelerators or equipment using those (limited to those usable in the development or testing rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more, goods (limited to those usable for rockets capable of transporting payloads weighing 500 kilograms or more) falling under item (ii) (a), goods falling under item (ii), (b)) and that fall under any of the following
- (a) Vibration test equipment or components thereof falling under any of the following
1. Digitally controlled vibration test equipment falling under the following i and ii
 - i. Equipment with exciting force of 50 kilonewtons or more in a state with no test object present and capable of generating vibrations with effective rate of acceleration of 98 meters per second squared or more even at a frequency of 20 hertz or more and 2,000 hertz or less
 - ii. Equipment using feedback control technology or closed loop control technology
 2. Components of vibration test equipment falling under any of the following

- i. Components designed for use in controlling the vibration test equipment falling under 1 and that use a program for vibration testing and digitally control vibration testing in real time in a bandwidth exceeding 5 kilohertz
 - ii. Vibration generators usable for vibration test equipment falling under 1., with exciting force of 50 kilonewtons or more in a state with no test object present
 - iii. Parts of vibration tables or vibration generators usable for vibration test equipment falling under 1. and designed for use by connecting 2 or more vibration generators in order to generate vibrations with exciting force of 50 kilonewtons or more in a state with no test object present
- (b) Wind tunnels capable of creating a state wherein the speed is Mach 0.9 or more
- (c) Combustion test equipment capable of testing solid rockets, liquid rockets with thrust exceeding 90 kilonewtons or rocket propulsion units or capable of measuring the thrust components in the three axial directions simultaneously
- (d) Environmental test equipment capable of simulating flying state and that falls under the following 1 and 2
 - 1. Equipment capable of simulating states wherein the altitude is 15,000 meters or more or states with temperatures throughout the range of - 50 degrees centigrade or more and 125 degrees centigrade or less
 - 2. Equipment (limited to those with exciting force of 5 kilonewtons or more) capable of generating vibrations with frequency range between 20 hertz and 2,000 hertz and effective rate of acceleration of 98 meters per second squared or more in a state with no test object present, or those capable of generating sounds with sound pressure level of 140 decibels or more when the reference sound pressure is 20 micropascals, or those with total rated acoustic output of 4 kilowatts or more
- (e) Electron accelerators capable of emitting electromagnetic waves by means of a bremsstrahlung from accelerated electrons having energy of 2 mega electron volts or more or equipment using those (excluding those designed for medical use)
- (xxv)-2 Rockets capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more, goods (limited to those usable in rockets capable of transporting payloads weighing 500 kilograms or more) falling under item (ii) (a), or hybrid computers (limited to those having programs falling under Article 16, paragraph (1), item (xi)) for the design of goods falling under item (ii) (b)
- (xxvi) Materials or equipment using stealth technology for reducing the level of

the reflection or emission of radio waves, acoustic waves (including ultrasound), or light (limited to ultraviolet and infrared light) usable in rockets or unmanned aerial vehicles capable of transporting payloads for 300 kilometers or more, unmanned aerial vehicles falling under item (i)-3, goods (limited to those usable for a rocket capable of transporting payloads) falling under item (ii) (a), or goods falling under item (ii) (b), or test equipment thereof

- (xxvii) Integrated circuits, detectors, or radomes (limited to those usable in rockets or unmanned aerial vehicles capable of transporting payloads weighing 500 kilograms or more for 300 kilometers or more) that fall under any of the following
 - (a) Integrated circuits designed to be able to withstand radiation exposure with total absorbed dose of 500,000 rads or more on a silicon conversion basis, and usable for protecting rockets or unmanned aerial vehicles from a nuclear impact
 - (b) Detectors designed to protect rockets or unmanned aerial vehicles from a nuclear impact
 - (c) Radomes designed to be able to withstand a thermal shock exceeding 4,184 kilojoules per square meter at a pressure exceeding 50 kilopascals and usable to protect rockets or unmanned aerial vehicles from a nuclear impact

Article 4 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Fluorine compound products that fall under any of the following
 - (a) Products designed for use in aircraft, satellites and other types of spacecraft for space development, and seals, gaskets, sealants or fuel storage bags with a content of fluorine compounds and that fall under item (xiv), (b) or (c) exceeding 50% of the total weight
 - (b) Piezoelectric polymers or piezoelectric copolymers made of vinylidene fluorides falling under item (xiv), (a) and that fall under following 1. or 2.
 - 1. Polymers that are sheet or film shaped
 - 2. Polymers with a thickness exceeding 200 micrometers
 - (c) Seals, gaskets, valve seats, storage bags or diaphragms made of any rubbery fluorine compound that contains vinyl ether monomer, and those designed for use for aircraft, satellites and other types of spacecraft for space development
- (ii) Molded products that use fibers (including semi-finished products; hereinafter the same shall apply in this item) that fall under any of the following

- (a) Molded products that use prepregs or preforms and that fall under item (xv), (e) and whose matrix is a organic matter
- (b) Molded products that use fibers that fall under any of the following and whose matrix is a metal or carbon
 - 1. Carbon fibers that fall under the following i. and ii.
 - i. Carbon fibers with a specific elastic modulus exceeding 10,150,000 meters
 - ii. Carbon fibers with a specific strength exceeding 177,000 meters
 - 2. Those that fall under item (xv), (c)
- (iii) Aromatic polyimide products that fall under item (iii), (a) (limited to films, sheets, tapes or ribbon shaped ones) and that fall under any of the following (excluding those that are copper coated or laminated and are for printed boards of electronic circuits)
 - (a) Products with a thickness exceeding 0.254 millimeters
 - (b) Products coated or laminated with carbon, graphite, metals or magnetic materials
- (iv) Devices for the manufacture of items that fall under item (ii), item (xv), or Article 14, item (i) and that fall under any of the following, or components or accessories thereof
 - (a) Among filament winding devices that perform fiber positioning or wrapping or winding operations, those that have 3 or more shafts and are capable of controlling and correlating those operations
 - (b) Among devices for the manufacture of airframes of aircraft or the structure of rockets made of fibers that position tapes, tows, sheets and perform laminating operations, those that have 2 or more shafts capable of controlling and correlating those operations
 - (c) Looms or interlacing machines capable of weaving three dimensionally
 - (d) Fiber manufacturing devices that fall under any of the following
 - 1. Devices that manufacture carbon fibers or silicon carbide fibers from polymer fibers
 - 2. Devices that manufacture silicon carbide fibers and that chemically vapor deposit elements or compounds on heated filament-shaped substrates
 - 3. Wet spinning equipment for fire resistant ceramics
 - 4. Devices that manufacture alumina fibers from precursor fibers containing aluminum by heat treatment
 - (e) Devices that manufacture prepregs that use a hot melt method and fall under item (xv), (e)
 - (f) Among non-destructive inspection devices that are capable of inspecting defects three-dimensionally and use ultrasound or X-ray tomography, those designed for inspecting composite materials

- (v) Devices for the manufacture of alloys or powders thereof (limited to those with contamination prevention measures taken) and designed for use in the methods that fall under any of item (vii), (c), 2., i. through vii.
- (vi) Tools (Including molds) for super plastic forming or diffusion bonding of titanium, aluminum or alloys thereof and designed to manufacture things that fall under any of the following
 - (a) Structures of aircraft, satellites and other types of spacecraft for space development
 - (b) Engines for aircraft, satellites and other types of spacecraft for space development
 - (c) Components of those falling under (a) or (b)
- (vii) Alloys or powders thereof that fall under any of the following (excluding those used for coating by fixing on the substrate surface)
 - (a) Alloys that have become aluminum compounds that fall under any of the following
 1. Nickel alloys that contains alloy elements other than aluminum or nickel with a content of aluminum of 15% or more and 38% or less of the total weight
 2. Titanium alloys that contain alloy elements other than aluminum or titanium with a content of aluminum of 10% or more of the total weight
 - (b) Alloys made of metals that fall under (c) and that fall under any of the following
 1. Nickel alloys that fall under any of the following
 - i. Nickel alloys with a stress breakage time of 10,000 hours or more when a load is added that generates 676 megapascals stress at a temperature of 650 degrees centigrade
 - ii. Nickel alloys with a low cycle fatigue life of 10,000 cycles or more when a load is added that generates 1,095 megapascals stress at a temperature of 550 degrees centigrade
 2. Niobium alloys that fall under any of the following
 - i. Niobium alloys with a stress breakage time of 10,000 hours or more when a load is added that generates 400 megapascals stress at a temperature of 800 degrees centigrade
 - ii. Niobium alloy with a low cycle fatigue life of 10,000 cycles or more when a load is added that generates 700 megapascals stress at a temperature of 700 degrees centigrade
 3. Titanium alloys that fall under any of the following
 - i. Titanium alloys with a stress breakage time of 10,000 hours or more when a load is added that generates 200 megapascals stress at a temperature of 450 degrees centigrade

- ii. Titanium alloys with a low cycle fatigue life of 10,000 cycles or more when a load is added that generates 400 megapascals stress at a temperature of 450 degrees centigrade
- 4. Aluminum alloys with a tensile strength falling under any of the following
 - i. Aluminum alloys with a tensile strength of 240 megapascals or more at a temperature of 200 degrees centigrade
 - ii. Aluminum alloys with a tensile strength of 415 megapascals or more at a temperature of 25 degrees centigrade
- 5. Among magnesium alloys with a tensile strength of 345 megapascals or more, those that incur corrosion of less than 1 millimeter per year when immersed in 3% brine
- (c) Alloy powders that fall under all of the following 1. through 3.
 - 1. Alloy powders made of materials that fall under any of the following
 - i. Nickel alloys with a number of particles other than metals mixed during the manufacturing process of less than 3 per 1,000,000,000 particles (limited to those with a diameter exceeding 100 micrometers) and made of elements of 3 types or more including aluminum and nickel
 - ii. Niobium alloys comprised of 3 types or more of elements including niobium and any of aluminum, silicon or titanium
 - iii. Titanium alloys comprised of 3 or more types of elements including aluminum or titanium
 - iv. Aluminum alloys comprised of 3 types or more of elements including aluminum and any of the elements of magnesium, zinc or iron
 - v. Magnesium alloys comprised of 3 or more types of elements including aluminum and magnesium
 - 2. Alloy powders manufactured by any of the following methods
 - i. Vacuum atomization method
 - ii. Gas atomization method
 - iii. Rotary atomization method
 - iv. Splat-quenching method
 - v. Melt spinning method and pulverization method
 - vi. Melt extraction method and pulverization method
 - vii. Mechanical alloy method
 - 3. Alloy powders that can manufacture the alloys that fall under (a) or (b)
- (d) Alloy materials that fall under all of the following 1. through 3.
 - 1. Alloy materials made of alloy powders that fall under any of (c) 1. i. through v.
 - 2. Alloy materials that are not finely pulverized but flake shaped, ribbon shaped or thin rod shaped

3. Alloy materials manufactured by any of the following methods
 - i. Splat-quenching method
 - ii. Melt spinning method
 - iii. Melt extraction method
- (viii) Metallic magnetic materials that fall under any of the following
 - (a) Metallic magnetic materials with an initial magnetic permeability of 120,000 or more and with a thickness of 0.05 millimeters or less
 - (b) Magnetostrictive alloys that fall under any of the following
 1. Those with a saturated magnetostriction exceeding 0.0005
 2. Those with an electromechanical coupling coefficient exceeding 0.8
 - (c) Strip-shaped amorphous alloys or nano crystal alloys that fall under the following 1. and 2.
 1. Those with a content of any of iron, cobalt or nickel, or with a total content thereof, of 75% or more of the total weight
 2. Those with a saturated magnetic flux density of 1.6 tesla or more that fall under any of the following
 - i. Those with a thickness of 0.02 millimeters or less
 - ii. Those with an electrical resistivity of 2 microhm-meters or more
- (ix) Among uranium-titanium alloys or tungsten alloys whose matrix is of iron, nickel or copper, those that fall under all of the following (a) through (d)
 - (a) Those with a density exceeding 17.5 gram per cubic centimeter
 - (b) Those with an elastic limit exceeding 880 megapascals
 - (c) Those with a tensile strength exceeding 1,270 megapascals
 - (d) Those with a coefficient of extension exceeding 8 %
- (x) Superconductive materials that fall under any of the following (limited to those with a length exceeding 100 meters or with the total weight exceeding 100 grams)
 - (a) Among superconductive materials that have multiple filaments including niobium titanium filaments, those that fall under any of the following
 1. Those the filaments of which are embedded in a matrix other than copper or copper alloy
 2. Those with a filament cross-section area less than 28/1,000,000 square millimeters
 - (b) Superconductive materials comprised of superconductive filaments other than niobium titanium that fall under all of the following 1. through 3.
 1. Those with a critical temperature exceeding -263.31 degrees centigrade and less than -249.16 degrees centigrade where a magnetic field is not applied
 2. Those with a cross-sectional area of superconductive filament less than 28/1,000,000 square millimeters
 3. Those that can hold superconductive condition with the temperature of -

268.96 degrees centigrade, where a magnetic field of magnetic flux density of 12 tesla is applied

- (xi) Liquids or materials that can be used as hydraulic oil or lubricants or liquids that can be used for preventing vibration or as coolant that fall under any of the following
- (a) Liquids that can be used as hydraulic oil and the primary component of which fall under any of the following
1. Sila-hydrocarbon oils that fall under all of the following i. through iv.
 - i. Those with an ignition point exceeding 204 degrees centigrade
 - ii. Those with a pour point of -34 degrees centigrade or less
 - iii. Those with a viscosity index of 75 or more
 - iv. Those that are stable at a temperature of 343 degrees centigrade
 2. Chlorofluorocarbons that fall under all of the following i. through v.
 - i. Those that do not have an ignition point
 - ii. Those with a self-ignition temperature exceeding 704 degrees centigrade
 - iii. Those with a pour point of -54 degrees centigrade or less
 - iv. Those with a viscosity index of 80 or more
 - v. Those with a boiling point of 200 degrees centigrade or more
- (b) Materials that can be used as a lubricant and the primary component of which falls under any of the following
1. Phenylene ether, alkylphenylene ether, phenylene thioether, alkyl phenylene thioether or mixtures thereof, in which the total number of ether groups, or thioether groups or of these functional groups together is 3 or more
 2. Fluorinated silicone oils with dynamic viscosity measured at a temperature of 25 degrees centigrade less than 5,000 square millimeters per second
- (c) Among liquids usable for vibration prevention with a purity exceeding 99.8% and in which the number of particle impurities of diameter greater than 200 micrometers is less than 25 per 100 milliliters, those with a total content of substances that fall under any of the following that is 85% or more of the total weight
1. Dibromo tetrafluoro ethane
 2. Polychloro trifluoro ethylene
 3. Polybromo trifluoro ethylene
- (d) Among liquids usable for cooling electronic devices and made of fluorocarbons, those falling under the following 1. and 2.
1. Liquids with a total content of substances that fall under any of the following that is 85% or more of the total weight
 - i. Monomers of perfluoro polyalkyl ether triazine

- ii. Monomers of perfluoro aliphatic ether
 - iii. Perfluoro alkylamine
 - iv. Perfluoro cycloalkane
 - v. Perfluoro alkane
2. Liquids that fall under all of the following i. through iii.
- i. Those with a density at a temperature of 25 degrees centigrade of 1.5 grams or more per 1 milliliter
 - ii. Those that are liquids at the temperature of 0 degrees centigrade
 - iii. Those with a fluorine content of 60% or more of the total weight
- (xii) Semi-finished ceramic products, primary ceramic products, ceramic composite materials, or substances that become ceramic materials, and that fall under any of the following
- (a) Among titanium borides with a content of metallic impurities less than 0.5% of the total weight, those with an average value of particle diameter of 5 micrometers or less and with a total weight of the particles with diameters exceeding 10 micrometers of 10% or less of the total weight
 - (b) Semi-finished or primary products of ceramics made of titanium boride with a theoretical density ratio of 98% or more (excluding grinding materials)
 - (c) Among ceramic composite materials that have glasses or oxides as a matrix, those that fall under any of the following
 - 1. Those that are reinforced by fibers that fall under the following i. or ii.
 - i. Those with a specific strength exceeding 12,700 meters
 - ii. Those comprised of the combination of elements in any of the following systems
 - a. Silicon and nitrogen
 - b. Silicon and carbon
 - c. Silicon, aluminum, oxygen and nitrogen
 - d. Silicon, oxygen and nitrogen
 - 2. Those reinforced by continuous fibers made of the following i. or ii. (excluding those with a tensile strength at a temperature of 1,000 degrees centigrade less than 700 megapascals or those with a creep distortion exceeding 1% when a load that generates stress of 100 megapascals is added for 100 hours at a temperature of 1,000 degrees centigrade)
 - i. Aluminum oxide
 - ii. Silicon, carbon and nitrogen
 - (d) Among ceramic composite materials reinforced by particles, whiskers or fibers, those having silicon, zirconium or boron carbide or nitride as a matrix
 - (e) Polydiorgano silane, polysilazane or polycarbo silazane

- (xiii) Polymers that fall under any of the following
 - (a) Bismaleimide, aromatic polyamideimide, aromatic polyimide or aromatic polyetherimides with a glass transition point exceeding 240 degrees centigrade (excluding powdered polymers that do not become liquid in case of compression molding, or molded products)
 - (b) Thermoplastic crystal liquid copolymers made of the following 1. and 2., among those with a thermo deformation temperature exceeding 250 degrees centigrade where a force of 1.82 newtons per square millimeter is applied
 - 1. Substances that fall under any of the following
 - i. Phenylene, biphenylene or naphthalene
 - ii. Phenylene, biphenylene or naphthalene substituted by methyl group, tertiary butyl group or phenyl group
 - 2. Acids that fall under any of the following
 - i. Terephthalic acid
 - ii. Hexahydroxy dinaphthoic acid
 - iii. Tetrahydroxy benzoate
 - (c) Polyallylene ether ketones that fall under any of the following
 - 1. Polyether ether ketone
 - 2. Polyether ketone ketone
 - 3. Polyether ketone
 - 4. Polyether ketone ether ketone ketone
 - (d) Polyallylene ketone
 - (e) Polyallylene sulfide having allylene groups comprised of biphenylene, tri phenylene or the combination thereof
 - (f) Polybiphenylene ether sulfone with a glass transition point exceeding 240 degrees centigrade
- (xiv) Fluorine compounds that fall under any of the following
 - (a) Copolymers of vinylidene fluoride with a weight of the part having beta type crystal structure without being elongated of 75 % or more of the total weight
 - (b) Fluorinated polyimides with a content of bonded fluorine of 10% or more of the total weight
 - (c) Elastic bodies of fluorinated phosphazenes with a content of bonded fluorine of 30 % or more of the total weight
- (xv) Fibers or prepregs or preforms that use the fibers that fall under any of the following
 - (a) Organic fibers (excluding polyethylene fibers) that fall under any of the following 1. and 2.
 - 1. Those with a specific elastic modulus exceeding 12,700,000 meters
 - 2. Those with a specific strength exceeding 235,000 meters

- (b) Carbon fibers that fall under the following 1. and 2.
 - 1. Those with a specific elastic modulus exceeding 12,700,000 meters
 - 2. Those with a specific strength exceeding 235,000 meters
- (c) Inorganic fibers that fall under the following 1. and 2.
 - 1. Those with a specific elastic modulus exceeding 2,540,000 meters
 - 2. Those with melting points, softening points, decomposition points or sublimating temperature exceeding 1,649 degrees centigrade in an inactive environment, but excluding those that fall under any of the following.
 - i. Those with a specific elastic modulus of less than 10,000,000 meters, and that are the short fibers of multiphase polycrystalline alumina fibers with a content of silica of 3% or more of the total weight and that are cut up in short pieces or are random mat shaped
 - ii. Molybdenum fibers or molybdenum alloy fibers
 - iii. Boron fibers
 - iv. Short fibers of ceramic fibers with melting points, softening points, decomposition points or sublimating temperature exceeding 1,770 degrees centigrade in an inactive environment
- (d) Fibers made of those that fall under any of the following, or fibers woven by mixing the said fibers and fibers that fall under any of (a) through (c) above
 - 1. Aromatic polyetherimides that fall under item (xiii), (a)
 - 2. Fibers that fall under any of item (xiii), (b) through (f)
- (e) Prepregs or preforms that fall under any of the following
 - 1. Those made of fibers that fall under any of (a) through (c)
 - 2. Those made of the following i. and ii.
 - i. Organic fibers or carbon fibers that fall under all of the following a. through c.
 - a. Those with a specific elastic modulus exceeding 10,150,000 meters
 - b. Those with a specific strength exceeding 177,000 meters
 - c. Those that do not fall under (a) or (b)
 - ii. Resins that fall under any of the following
 - a. Those that fall under item (xiii) or item (xiv), (b) with a glass transition point exceeding 110 degrees centigrade
 - b. Phenol resin or epoxy resin with a glass transition point of 145 degrees centigrade or more (for those the curing temperature of which is lower than the glass transition point, 160 degrees centigrade)
- (xvi) Boron or boron carbide with a particle diameter of 60 micrometers or less and with a purity of 85% or more, or a mixture thereof, or guanidine nitrate or nitro guanidine

Article 5 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 6 of appended table 1 of the Export Order shall fall under any of the following.

- (i) Bearings that fall under any of the following, or components thereof (excluding balls of precision grade 55 or less as specified by ISO3290 (roller bearings -bearing components- balls for roller bearing units))
 - (a) Among ball bearings or bearings (excluding tapered roller bearings) with a precision grade 4 or more as specified by Japanese Industrial Standards B 1514 (precision of roller bearings), those with inner and outer rings and rolling elements specified by International Standard ISO 5593 that are made of monel or beryllium
 - (b) Ball bearings or bearings (excluding tapered roller bearings) with a precision grade 2 or higher as specified by Japanese Industrial Standards B 1514 (excluding those falling under (a))
 - (c) Active magnetic bearing systems that fall under any of the following
 - 1. Systems composed of materials with a magnetic flux density of 2 tesla or more and a yield point exceeding 414 megapascals
 - 2. Systems that are entirely electromagnetic and employ a three-dimensional homopolar bias excitation actuator
 - 3. Systems having a position detector that can be used at temperatures of 177 degrees centigrade and higher
- (ii) Among machine tools (limited to those that can process metals, ceramics or composite materials) to which a nelectronic controller can be attached, those that fall under any of the following (a) through (e) (excluding those that fall under (f))
 - (a) Among machine tools capable of lathe turning that have two or more axes capable of controlling contour, those that fall under any of the following (excluding those designed for the manufacture of contact lenses)
 - 1. Deleted
 - 2. Machine tools with a linear axis positioning precision of 0.0045 millimeters or less when measured according to the method of measurement specified by International Standard ISO 230-2:1997
 - (b) Machine tools capable of milling or boring that fall under any of the following
 - 1. Machine tools with 3 linear axes that are capable of controlling contour and one rotational axis that is capable of controlling contour and that fall under any of the following
 - i. Deleted
 - ii. Machine tools with linear axis positioning precision of 0.0045 millimeters or less when measured according to the method of

- measurement specified by International Standard ISO 230-2:1997
2. Machine tools with 5 or more axes capable of controlling contour
 3. Jig boring machines with a linear axis positioning precision of 0.003 millimeters or less when measured according to the method of measurement specified by International Standard ISO 230-2:1997
 4. Machine tools exclusively designed for fly cutting that fall under any of the following i. and ii.
 - i. Machine tools for which both the radial direction deflection and axial direction deflection are less than 0.0004 millimeters per single rotation of the spindle
 - ii. Machine tools with straightness of less than 2 seconds over a travel distance exceeding 300 millimeters
- (c) Machine tools capable of grinding that fall under any of the following 1. or 2. (excluding those that fall under any of the following 3. through 5.)
1. Machine tools with a linear axis positioning precision of 0.003 millimeters or less when measured according to the method of measurement specified by International Standard ISO 230-2:1997, and with 3 or 4 axes capable of controlling contour
 2. Machine tools with 5 or more axes capable of controlling contour
 3. External cylindrical grinders, internal cylindrical grinders or internal-external cylindrical grinders designed to grind a cylinder with an external diameter or length of less than 150 millimeters
 4. Machine tools designed for use as jig grinders that do not have a Z axis or W axis with positioning precision of less than 0.003 millimeters when measured according to the method of measurement specified by International Standard ISO 230-2:1997
 5. Flat surface grinders
- (d) Machine tools capable of electrical discharge machining (excluding wire electrical discharge machining) with 2 or more rotational axes capable of controlling contour
- (e) Machine tools capable of liquid jet machining, electron beam machines or laser beam machines that fall under any of the following categories 1. or 2.
1. Machine tools or machines with 2 or more rotational axes capable of controlling contour
 2. Machine tools or machines with rotational axis positioning precision of less than 0.003 degrees when measured according to the method of measurement specified by International Standard ISO 230-2:1997
- (f) Machine tools that were designed exclusively for the manufacture of any of the following
1. Gears
 2. Crank shafts or cam shafts

- 3. Tools or blades
 - 4. Extruder worms
 - 5. Gemstones
- (iii) Among machine tools (limited to those that can process metals, ceramics or composite materials) to which an electronic controller can be attached and are capable of deep bore drilling or lathe turning (limited to those that are capable of deep bore drilling), those that can bore a hole to a depth exceeding 5,000 millimeters, or components thereof
- (iv) Machine tools capable of numerical control and that employ magnetic fluid grinding methods
- (v) Machine tools designed for finish processing of gears with a Rockwell hardness of 40 or greater as measured by the C scale according to the measurement methods specified in Japanese Industrial Standard Z2245 (Rockwell hardness testing method), with pitch diameter exceeding 1,250 millimeters and face width with pitch diameter exceeding 15% of spur gears, helical gears, or double-helical gears, that are capable of finish processing with a precision grade of 3 or higher as specified by International Standard ISO 1328 (ISO system of precision for cylindrical gears) or the components, controllers, or accessories thereof.
- (vi) Isostatic presses that fall under any of the following categories (a) and (b), or the components or accessories thereof
- (a) Isostatic presses having hollow cavities with an internal diameter of 406 millimeters or more and capable of controlling temperature inside the hollow cavities
 - (b) Isostatic presses that fall under any of the following
 - 1. Isostatic presses with a maximum pressure exceeding 207 megapascals
 - 2. Isostatic presses capable of controlling temperatures exceeding 1,500 degrees centigrade in hollow cavities
 - 3. Isostatic presses that incorporate devices to inject hydrocarbons and devices to remove gaseous decomposition products
- (vii) Coating devices (excluding those designed for the manufacture of semiconductor materials, semiconductor devices, or integrated circuits) that fall under any of the following, or the components for the automatic operation thereof
- (a) Coating devices that employ methods of fixing to the substrate surface coating materials that are produced by the chemical reaction of source gases, and that fall under any of the following 1. and 2.
 - 1. Coating devices that employ any of the following methods
 - i. Pulse method
 - ii. Controlled nucleation thermochemical deposition method
 - iii. Methods that fix coating materials to the substrate surface by plasma

arc

2. Coating devices that fall under any of the following
 - i. Coating devices incorporating rotational axis seals that can be used at 10 millipascals or less
 - ii. Coating devices that have internal film thickness control functions
- (b) Coating devices that employ ion implantation method and with a beam current of 5 milliamperes or more
- (c) Among coating devices that employ methods of affixing to the substrate surface coating materials that have been vaporized by electron beams, and that incorporate power supply devices with a capacity exceeding 80 kilowatts, those that have the equipment falling under any of the following
 1. Coating devices that effects molten liquid level control by employing laser light to control ingot feeding
 2. Deposition rate monitoring devices capable of achieving control by employing computers and that utilize the principle of ionized atom photoluminescence of ionized atoms occurring in vapor flow to control the rate of deposition when coating with two or more elements
- (d) Plasma spray coating devices that fall under the following
 1. Plasma spray coating devices that can reduce pressure in vacuum chambers prior to plasma spraying to 10 millipascals and that can be used at a pressure of 10 kilopascals or less (referring to plasma spraying within 30 centimeters measured from the mouth of the nozzle)
 2. Plasma spray coating devices with internal film thickness control function
- (e) Coating devices that use the sputtering method and has a current density of 10 milliamperes per square centimeter or more for hourly deposition rates of 15 micrometers or more
- (f) Coating devices that employ methods to fix coating materials ionized by arc discharge to the substrate surface and that have a magnetic field to control arc spots on the cathodes
- (g) Ion plating production equipment that can measure the following characteristics of the coating
 1. Thickness and deposition rate of coating materials fixed to the substrate surface
 2. The optical properties of the substrate surface
- (viii) Measuring devices (including machine tools that can be used as measuring devices; hereinafter the same shall apply in this Article) that fall under any of the following
 - (a) Coordinate measuring instruments that are controlled by computer or numerically- controlled coordinate measuring equipment and that, when

- the precision of measurement of intervals is measured according to the measurement method specified in International Standard ISO 10360-2:2001 for any of the points of measurement within the limits of operation, have a number of maximum permissible indications of error of the measured axis displayed in micrometers that is equal to or less than the value obtained by multiplying the length of said measured axis in millimeters by 0.001 and then adding 1.7
- (b) Measuring devices that measure surface roughness by treating the angles of the scattering of light as functions and that have a sensitivity of 0.5 nanometers or less
 - (ix) Robots (excluding operating robots and sequenced robots) that fall under any of the following, or the control equipment or end effectors thereof
 - (a) Robots that are capable of conducting complete instant three-dimensional image processing or complete three-dimensional scene analysis in order to create or rewrite programs or the numeric data of programs.
 - (b) Robots of explosion-proof construction as specified in Japanese Industrial Standard C0930
 - (c) Robots designed to withstand a total absorbed atomic radiation dose exceeding 5,000 grays on a silicon conversion basis
 - (d) Devices designed for use at altitudes exceeding 30,000 meters
 - (x) Components or auxiliaries for measuring devices of machine tools that fall under any of the following
 - (a) Feedback devices having position detectors that detect position on a straight line in which the precision of said devices possesses a value that is less than the value obtained by adding 0.0008 millimeters to 6% of one hundred thousandth (100,000th) of the effective length of a position detector scale in millimeters
 - (b) Feedback devices having position detectors that detect angles in which the precision of said devices is less than 0.00025 degrees
 - (c) Compound rotation tables or spindles that can change angles in relation to axes other than the center line axis during processing, and that by being fitted to machine tools make said machine tools fall under any of the specifications prescribed in item (ii) through item (v) inclusive
 - (xi) Spin-forming machines or flow-forming machines that fall under all of the following (a) through (c) inclusive
 - (a) Spin-forming machines or flow-forming machines that are capable of exerting control by numerically - controlled coordinate measuring equipment or computers
 - (b) Spin-forming machines or flow-forming machines with 2 or more axes capable of controlling contour
 - (c) Spin-forming machines or flow-forming machines with a roller welding

force exceeding 60 kilonewtons

Article 6 Goods with specifications prescribed by Ordinance of the Ministry of Economy, Trade and Industry in row 7 of appended table 1 of the Export Order shall fall under any of the following.

- (i) Integrated circuits that fall under any of the following
 - (a) Integrated circuits designed to withstand any of the following categories of atomic radiation (excluding those designed for use in other goods)
 - 1. Integrated circuits with a total absorbed dose of 5,000 grays or more on a silicon conversion basis
 - 2. Integrated circuits with an absorbed dose of 5,000,000 grays or more in one second on a silicon conversion basis
 - 3. Integrated circuits with a neutron flux corresponding to 1 megaelectron volt (integrated value) of 50 trillion or more per square centimeter (excluding MIS type)
 - (b) Microprocessors, microcomputers, microcontrollers, programmable ROM that can electronically delete programs (including flash memory), static RAM, and devices using storage elements that employ compound semiconductors, analog-to-digital converters, digital-to-analog converters, electro-optical integrated circuits or optical integrated circuits used for signal processing, field programmable logic devices, those using neural networks, custom integrated circuits (excluding those for which it is possible to determine whether or not they are goods that fall under any of (c) through (h), or (k), or those for which it is possible to determine whether or not they are goods falling under any of the goods in the middle column of rows 5 through 15 of the appended table 1 of the Export Order; hereinafter the same shall apply in this Article) or FFT processors that fall under any of the following categories (excluding those designed for use in other goods)
 - 1. Devices designed for use at temperatures exceeding 125 degrees centigrade
 - 2. Devices designed for use at temperatures of less than -55 degrees centigrade
 - 3. Devices designed for use at all temperatures in a range from -55 degrees centigrade or more to 125 degrees centigrade or less
 - (c) Microprocessors, microcomputers or microcontrollers that fall under any of the following (excluding those designed for use in other goods; however microcomputers or microcontrollers using silicon as their principal material designed for use in other goods or devices with an operand length of 8 bits or less are included)
 - 1. Deleted

2. Devices employing compound semiconductors with a maximum clock frequency exceeding 40 megahertz
 3. Devices having 4 or more of any of data busses, instruction busses or serial communication ports that directly connect parallel microprocessors externally at transfer speeds exceeding 1,000 megabytes per second
- (d) Devices used for storage elements employing compound semiconductors (excluding those designed for use in other goods)
- (e) Devices used for analog-to-digital conversion or digital-to-analog conversion that fall under any of the following (excluding those designed for use in other goods)
1. Devices used for analog-to-digital conversion that fall under any of the following
 - i. Devices with 8 bits to less than 10 bits resolution with an output rate exceeding 500 mega sampling per second
 - ii. Devices with 10 bits or more to less than 12 bits resolution with an output rate exceeding 200 mega sampling per second
 - iii. Devices with 12 bits resolution with an output rate exceeding 50 mega sampling per second
 - iv. Devices with resolution exceeding 12 bits and less than 14 bits, with an output rate exceeding 5 mega sampling per second
 - v. Devices with resolution exceeding 14 bits, with an output rate exceeding 1 mega sampling per second
 2. Among devices used for digital-to-analog conversion with 12 bits or more resolution, those with settling times of less than 10 nanoseconds
- (f) Electro-optical integrated circuits or optical integrated circuits used for signal processing that fall under all of the following 1. through 3. (excluding those designed for use in other goods)
1. Integrated circuits possessing laser oscillators
 2. Integrated circuits possessing photo-detectors
 3. Integrated circuits possessing optical waveguides
- (g) Field programmable logic devices that fall under any of the following (excluding those designed for use in other goods)
1. Devices designed so that the number of usable gates exceeds 30,000 on a dual-entry gate conversion basis
 2. Devices with a basic gate propagation delay time of less than 0.1 nanoseconds
 3. Devices with a toggle frequency exceeding 133 megahertz
- (h) Devices employing neural networks (excluding those designed for use in other goods)
- (i) Custom integrated circuits that fall under any of the following

1. Custom integrated circuits with terminals exceeding 1,000
 2. Custom integrated circuits with a basic gate propagation delay time of less than 0.1 nanoseconds
 3. Custom integrated circuits with an operating frequency exceeding 3 gigahertz
- (j) Digital devices employing compound semiconductors that fall under any of the following (excluding those used for storage elements employing compound semiconductors, analog-to-digital converters, digital-to-analog converters, electro-optical integrated circuits or optical integrated circuits used for signal processing, field programmable logic devices, devices using neural networks, custom integrated circuits, FFT processors and those designed for use in other goods)
1. Digital devices with a number of equivalent gates exceeding 3,000 on a dual-entry gate conversion basis
 2. Digital devices with a toggle frequency exceeding 1.2 gigahertz
- (k) FFT processors (excluding those designed for use in other goods) with a Fast Fourier Transformation rated execution time expressed in milliseconds that is less than the value calculated by the following formula $\{(number\ of\ complex\ points)\ log_2 (number\ of\ complex\ points)\}$ divided by 20,480
- (ii) Components of devices using microwaves or millimeter waves that fall under any of the following (excluding those designed for use in other goods)
- (a) Electron tubes that fall under the following 1. or 2. (excluding those that fall under 3. following)
1. Traveling wave tubes that fall under any of the following
 - i. Traveling wave tubes with an operating frequency exceeding 31.8 gigahertz
 - ii. Traveling wave tubes having a hot cathode for which the time from the heating of the filament to attainment of the rated output is less than 3 seconds
 - iii. Traveling wave tubes with cavity coupling in which the value for the instantaneous bandwidth divided by the center frequency exceeds 7% or a maximum output exceeding 2.5 kilowatts
 - iv. Traveling wave tubes with helical form that fall under any of the following
 - a. Devices having an instantaneous bandwidth exceeding 1 octave, and for which the value obtained by multiplying the average output value expressed in kilowatts by the operating frequency value expressed in gigahertz exceeds 0.5
 - b. Devices having an instantaneous bandwidth of 1 octave or less, and for which the value obtained by multiplying the average output value

expressed in kilowatts by the operating frequency value expressed in gigahertz exceeds 1

- c. Devices designed for space use
2. Crossfield amplifier tubes with a gain exceeding 17 decibels
3. Devices designed to use frequency bands allotted for wireless transmission by the International Telecommunication Union (excluding frequency bands allotted for wireless radio determination) that fall under any of the following
 - i. Devices with an operating frequency of 31.8 gigahertz or less
 - ii. Devices other than those designed exclusively for use in space that have an average output of 50 watts or less and an operating frequency exceeding 31.8 gigahertz and 43.5 gigahertz or less
- (b) Impregnated cathodes designed for use in electron tubes with continuous emission current density under rated operating conditions exceeding 5 amperes per square centimeter
- (c) Monolithic microwave integrated circuit power amplifiers that fall under any of the following (excluding those used for broadcasting satellites designed for use at an operating frequency of 40.5 gigahertz or more and 42.5 gigahertz or less)
 1. Among devices with an operating frequency exceeding 3.2 gigahertz and 6 gigahertz or less with an average output value exceeding 4 watts (36 dBm), those for which the value of the instantaneous bandwidth divided by the center frequency exceeds 15%
 2. Among devices with an operating frequency exceeding 6 gigahertz and 16 gigahertz or less with an average output value exceeding 1 watt (30 dBm), those for which the value of the instantaneous bandwidth divided by the center frequency exceeds 10%
 3. Among devices with an operating frequency exceeding 16 gigahertz and 31.8 gigahertz or less with an average output value exceeding 0.8 watts (29 dBm), those for which the value of the instantaneous bandwidth divided by the center frequency exceeds 10%
 4. Devices with an operating frequency exceeding 31.8 gigahertz and 37.5 gigahertz or less
 5. Among devices with an operating frequency exceeding 37.5 gigahertz and 43.5 gigahertz or less and with an average output value exceeding 0.25 watts (24 dBm), those for which the value of the instantaneous bandwidth divided by the center frequency exceeds 10%
 6. Devices with an operating frequency exceeding 43.5 gigahertz
- (d) Microwave transistors that fall under any of the following
 1. Devices with an operating frequency exceeding 3.2 gigahertz and 6 gigahertz or less and with an average output value exceeding 60 watts

- (47.8 dBm)
2. Devices with an operating frequency exceeding 6 gigahertz and 31.8 gigahertz or less, and an average output value exceeding 20 watts (43 dBm)
 3. Devices with an operating frequency exceeding 31.8 gigahertz and 37.5 gigahertz or less and with an average output value exceeding 0.5 watts (27 dBm)
 4. Devices with an operating frequency exceeding 37.5 gigahertz and 43.5 gigahertz or less and with an average output value exceeding 1 watt (30 dBm)
 5. Devices with an operating frequency exceeding 43.5 gigahertz
- (e) Solid-state microwave amplifiers or assemblies or modules containing microwave amplifiers that fall under any of the following (excluding microwave monolithic integrated circuit power amplifiers or devices designed for satellite broadcast use at an operating frequency of 40.5 gigahertz or higher to 42.5 gigahertz or less)
1. Among devices with an operating frequency exceeding 3.2 gigahertz and 6 gigahertz or less and with an average output value exceeding 60 watts (47.8 dBm), those for which the value of the instantaneous bandwidth divided by the center frequency exceeds 15%
 2. Among devices with an operating frequency exceeding 6 gigahertz and 31.8 gigahertz or less and with an average output value exceeding 15 watts (42 dBm), those for which the value of the instantaneous bandwidth divided by the center frequency exceeds 10%
 3. Devices with an operating frequency exceeding 31.8 gigahertz and 37.5 gigahertz or less
 4. Among devices with an operating frequency exceeding 37.5 gigahertz and 43.5 gigahertz or less and with an average output value exceeding 1 watt (30 dBm), those for which the value of the instantaneous bandwidth divided by the center frequency exceeds 10%
 5. Devices with an operating frequency exceeding 43.5 gigahertz
 6. Devices with an operating frequency exceeding 3 gigahertz that fall under all of the following categories i. to iii.
 - i. Devices for which the value of the average output value expressed in watts multiplied by the maximum operating frequency expressed in gigahertz squared exceeds 150
 - ii. Devices for which the value of the instantaneous bandwidth divided by the center frequency is 5% or more
 - iii. Devices for which the value of the distance of vertically adjacent amplifiers or assemblies, or modules in array alignment expressed in centimeters multiplied by the minimum operating frequency

expressed in gigahertz is 15 or less

- (f) Electronically or magnetically tunable band-pass filters that fall under the following 1. and 2.
 - 1. Devices having 6 or more variable frequency resonators capable of tuning across a half-octave frequency band in less than 10 microseconds
 - 2. Devices capable of band-passing in excess of 0.5% of the center frequency
- (g) Electronically or magnetically tunable band-elimination filters that fall under the following 1. and 2.
 - 1. Devices having 6 or more variable frequency resonators capable of tuning across a half-octave frequency band in less than 10 microseconds
 - 2. Devices capable of eliminating a band less than 0.5% of the center frequency
- (h) Deleted
- (i) Mixers or converters designed so that by their use in frequency analyzers, network analyzers or microwave test receivers, said equipment falls under any of item (xii), (a) or (b), item (xiv) or item (xv), (a)
- (j) Microwave power amplifiers equipped with electron tubes that fall under (a), and that fall under the following categories 1. and 2. (excluding equipment used on frequency bands allotted for wireless transmission by the International Telecommunication Union (excluding frequency bands allotted for wireless radio determination))
 - 1. Devices with an operating frequency exceeding 3 gigahertz
 - 2. Devices with average output power density exceeding 80 watts per kilogram and with a volume of less than 400 cubic centimeters
- (iii) Signal processing equipment utilizing elastic waves or acousto-optic effects that fall under any of the following (excluding those designed for use in other goods), or the components thereof
 - (a) Signal processing equipment using surface elastic waves or pseudo-surface elastic waves that fall under any of the following
 - 1. Signal processing equipment with a carrier frequency exceeding 2.5 gigahertz
 - 2. Signal processing equipment with a carrier frequency exceeding 1 gigahertz and 2.5 gigahertz or less that falls under any of the following
 - i. Signal processing equipment with a main lobe to side lobe power ratio exceeding 55 decibels
 - ii. Signal processing equipment for which the numeric value of the maximum delay time expressed in microseconds multiplied by the value of the bandwidth expressed in megahertz exceeds 100
 - iii. Signal processing equipment with a bandwidth exceeding 250

megahertz

- iv. Signal processing equipment for which the distributed delay time (this refers to the difference between the maximum and minimum delay time values for a frequency) exceeds 10 microseconds
- 3. Signal processing equipment with a carrier frequency of 1 gigahertz or less that falls under any of the following
 - i. Signal processing equipment for which the numeric value obtained by multiplying the maximum delay time expressed in microseconds by the value of the bandwidth expressed in megahertz exceeds 100
 - ii. Signal processing equipment for which the distributed delay time exceeds 10 microseconds
 - iii. Signal processing equipment with a main lobe to side lobe power ratio exceeding 55 decibels and with a bandwidth exceeding 50 megahertz
- (b) Signal processing equipment that utilizes bulk elastic waves and that is capable of performing direct signal processing at frequencies exceeding 1 gigahertz
- (c) Signal processing that utilizes the interaction of elastic waves and light waves and that is capable of performing direct signal or image processing
- (iv) Among devices using superconductive material that are electron devices or electronic circuits with components using superconductive materials, those designed for use at temperatures lower than the critical temperature of the superconductive materials used and that fall under any of the following (excluding those designed for use in other goods)
 - (a) Devices possessing a current switching function for use in digital circuits with superconducting gates for which the value obtained by multiplying the delay time per gate by the power consumption per gate is less than 1/100 billion milijoules
 - (b) Devices having frequency separation function and having resonant circuits with a cue value exceeding 10,000
- (v) Batteries that fall under any of the following (excluding batteries with the volume of a size C battery or less and those designed for use in other goods)
 - (a) Among primary batteries designed to be used at temperatures from below -30 degrees centigrade to more than 70 degrees centigrade, those with an energy density exceeding 480 watts hours per kilogram when the voltage is discharged to 75% of the voltage immediately prior to the start of discharge.
 - (b) Secondary batteries, that when the voltage is discharged to 75% of the voltage immediately prior to the start of discharge at a 5-hour discharge current rate, after 75 charge/discharge cycles at a 5-hour discharge current rate, has an energy density exceeding 150 watts hours per kilogram at all temperatures in a range from -20 degrees centigrade or more to 60 degrees centigrade or less

- (c) Solar cells for space use that are designed to resist radiation, and with an output exceeding 160 watts per square meter at an operating temperature of 28 degrees centigrade when illuminated to the extent of 1 kilowatt per square meter by a tungsten light source at 2,527 kelvins
- (vi) High voltage capacitors that fall under any of the following (excluding those designed for use in other goods)
 - (a) Capacitors with a repeated cycle of less than 10 hertz that fall under all of the following categories 1. to 3.
 - 1. Capacitors with a rated voltage of 5 kilovolts or more
 - 2. Capacitors with an energy density of 250 joules per kilogram or more
 - 3. Capacitors with a total energy of 25 kilojoules or more
 - (b) Capacitors with a repetitive cycle of 10 hertz or more and that fall under all of the following categories 1. to 4.
 - 1. Capacitors with a rated voltage of 5 kilovolts or more
 - 2. Capacitors with an energy density of 50 joules per kilogram or more
 - 3. Capacitors with a total energy of 100 joules or more
 - 4. Capacitors designed for a charge/discharge cycle life equal to or more than 10,000 cycles
- (vii) Superconducting magnets (including solenoid coil types) designed to fully generate or dissipate a complete magnetic field in less than one second that fall under all of the following categories (a) to (c) (excluding those designed for use in other goods)
 - (a) Superconducting magnets that discharge energy exceeding 10 kilojoules in the first second of demagnetization
 - (b) Superconducting magnets with a coil internal diameter exceeding 250 millimeters
 - (c) Superconducting magnets with a rated maximum current density exceeding 300 amperes per square millimeter or with a rated magnetic flux density exceeding 8 teslas
- (viii) Rotary input type absolute encoders that fall under any of the following (excluding those designed for use in other goods)
 - (a) Rotary input type absolute encoders with a resolution of less than 1/265,000 of measurable maximum scale
 - (b) Rotary input type absolute encoders with an angle conversion error absolute value of less than 2.5 seconds
- (ix) Digital video magnetic tape recorders, digital instrumentation magnetic tape data recorders or equipment designed to convert digital video magnetic tape recorders for use as digital instrumentation magnetic tape data recorders, that fall under any of the following (excluding those designed for use in other goods), or magnetic tapes used for the testing of these recorders and equipment

- (a) Analog instrumentation magnetic tape recorders that fall under any of the following
 - 1. Analog instrumentation magnetic tape recorders having tracks or electronic channels with a bandwidth exceeding 4 megahertz
 - 2. Analog instrumentation magnetic tape recorders for which bandwidth per one track or one electronic channel exceeds 2 megahertz, and which has recording tracks exceeding 42
 - 3. Analog instrumentation magnetic tape recorders with a time base error of less than plus/minus 0.1 microseconds
- (b) Digital video magnetic tape recorders (excluding devices designed for recording television signals and that use signal formats (including compressed data) that have been standardized or recommended by the International Telecommunication Union, the International Electrotechnical Commission, the U.S. Society of Motion Picture and Television Engineers, the European Broadcasting Union or the US Institute of Electrical and Electronics Engineers) and that have a maximum digital transfer speed between devices exceeding 360 megabits per second
- (c) Among digital instrumentation magnetic tape data recorders that employ helical scanning technology or fixed head technology, those that fall under any of the following
 - 1. Digital instrumentation magnetic tape data recorders with a maximum digital transfer speed between devices exceeding 175 megabits per second
 - 2. Digital instrumentation magnetic tape data recorders designed for space use
- (d) Electronic conversion equipment that can convert digital video magnetic tape recorders for use as digital instrumentation magnetic tape data recorders, for which the maximum digital transfer speed between devices exceeds 175 megabits per second
- (x) Waveform digitizers and transient recorders that fall under the following categories (a) and (b) (excluding those designed for use in other goods)
 - (a) Waveform digitizers and transient recorders with a sample rate of 200 million samples per second or more and with a resolution of 10 bits or more
 - (b) Waveform digitizers and transient recorders designed to continuously output data at 2 gigabits per second or more
- (x)-2 Digital instrumentation recorders using magnetic disk storage technology that fall under the following categories (a) and (b) (excluding those designed for use in other goods)
 - (a) Digital instrumentation recorders with a sampling rate of 100 million samples per second or more, and a resolution of 8 bits or more

- (b) Digital instrumentation recorders designed to continuously output data at 1 gigabit per second or more
- (xi) Equipment components that are assemblies employing frequency synthesizers and for which the required time for frequency cycling is less than 1 millisecond (excluding those designed for use in other goods)
- (xii) Wireless frequency analyzers that fall under any of the following (excluding those designed for use in other goods)
 - (a) Wireless frequency analyzers capable of analyzing frequencies exceeding 31.8 gigahertz and 37.5 gigahertz or less and for which the resolution bandwidth for 3 decibels exceeds 10 megahertz
 - (b) Wireless frequency analyzers capable of analyzing frequencies exceeding 43.5 gigahertz
 - (c) Wireless frequency analyzers employing digital signal processing technology (excluding devices that only use a filter with a constant ratio between center frequency and bandwidth) with real time bandwidth exceeding 500 kilohertz
- (xiii) Among signal generators employing frequency synthesizers, those for which the precision and stability of combined output frequency devices are regulated by the input frequency or the said devices' standard frequency and that fall under any of the following (excluding signal generators employing frequency synthesizers designed for use in equipment and other goods that regulate the output frequency by the value obtained by adding or subtracting the frequencies of 2 or more quartz crystal oscillators or by the value obtained by multiplying these values)
 - (a) Signal generators with a maximum combined output frequency exceeding 31.8 gigahertz and 43.5 gigahertz or less, and that oscillate pulse with a pulse width of less than 100 nanoseconds
 - (b) Devices with a maximum combined output frequency exceeding 43.5 gigahertz
 - (c) Signal generators for which the required time for frequency cycling is less than 1 millisecond
 - (d) Signal generators for which the value is less than the value of the single side band phase noise ratio per hertz relative to carrier signal as calculated according to the following method

$$20 \log_{10} (\text{operating frequency expressed in megahertz}) - 20 \log_{10} (\text{difference between the operating frequency expressed in hertz and the offset frequency}) - 126$$
- (xiv) Network analyzers with a maximum operating frequency exceeding 43.5 gigahertz (excluding those designed for use in other goods)
- (xv) Microwave receivers that fall under the following (a) and (b) (excluding those designed for use in other goods)

- (a) Devices designed for use at frequencies exceeding 43.5 gigahertz
- (b) Devices that can simultaneously measure amplitude and phase
- (xvi) Atomic frequency standards (excluding frequency standards employing rubidium that were not designed for use in space) that fall under any of the following (excluding those designed for use in other goods)
 - (a) Atomic frequency standards for which stability when oscillated continuously for a 30 day period is less than 1/ 100 billion
 - (b) Atomic frequency standards designed for space use
- (xvi)-2 Among spray cooling method temperature control devices that are capable of cyclic use of the cooling medium within a closed device, those having atomizing nozzles specifically designed to spray isolating cooling medium on electric components and bring the components' temperature to within a fixed range, or the components specifically designed for that purpose
- (xvii) Equipment for the manufacture or test of semiconductor devices, integrated circuits or semiconductor materials, or masks or reticles for the manufacture of integrated circuits, that fall under any of the following, or the components and accessories thereof
 - (a) Crystal epitaxial growth systems that fall under any of the following
 1. Devices capable of forming films that fall under any of the following
 - i. Silicon films for which the absolute value of the tolerance of the film thickness along a length of 200 millimeters or more is less than 2.5 %
 - ii. Film of materials other than silicon for which the absolute value of the tolerance of the film thickness along a length of 75 millimeters or more is less than 2.5 %
 2. Metal-organic chemical vapor deposition reactors that grow compound semiconductor crystals by causing a chemical reaction among materials that fall under item (xx) or item (xxi)
 3. Molecular beam epitaxial growth systems employing gas sources or solid sources
 - (b) Ion implanters that fall under any of the following
 1. Ion implanters with a beam energy exceeding 1 megaelectron volt
 2. Ion implanters designed for use at beam energies of less than 2 kiloelectron volts
 3. Ion implanters which are capable of direct writing
 4. Ion implanters with beam energies of 65 kiloelectron volts or more and beam currents of 45 milliamperes or more, that are capable of implanting oxygen on a heated superconductor material substrate
 - (c) Among anisotropic plasma dry etching devices having cassette-to-cassette functions and load lock functions or devices designed to be connected to

and used with equipment falling under (e), those that fall under any of the following

1. Equipment that contains a minimum line width of plus/minus 3 sigma distribution within a range of plus/minus 5%, and that can achieve a minimum line width of 180 nanometers or less.
 2. Equipment designed so that the generation of particles exceeding 0.1 micrometers in diameter is less than 0.04 particles in 1 square centimeter.
- (d) Among plasma breeding chemical vapor deposition systems having cassette-to-cassette functions and load lock functions or systems designed to be connected to and used with equipment falling under (e), those that are used in the manufacture of semiconductor devices with a minimum line width of 180 nanometers or less
- (e) Automatic loading multi-chamber central wafer handling systems that fall under the following 1. and 2.
1. Interfaces for wafer input and output that can be connected to 3 or more units of semiconductor manufacturing equipment
 2. Equipment designed to form an integrated system in a vacuum environment for sequential multiple wafer processing
- (f) Lithography equipment that falls under any of the following
1. Step and repeat method or step and scan method align and expose equipment for wafer processing using photo-optical or x-ray methods, that falls under any of the following
 - i. Equipment with a light source wavelength shorter than 245 nanometers
 - ii. Equipment for which the value obtained by multiplying the exposure light source wavelength expressed in nanometers by 0.45, then dividing that value by the numerical aperture is 180 or less
 2. Equipment designed to be capable of manufacturing masks, semiconductor devices or integrated circuits, among those using electron beams, ion beams or laser beams, those that fall under any of the following
 - i. Equipment with an irradiated area having a diameter of less than 0.2 micrometers
 - ii. Equipment that can burn a pattern with a line width of less than 1 micrometer
 - iii. Equipment with an overlay precision absolute value of less than 0.2 micrometers
- (g) Masks and reticles that fall under any of the following
1. Masks and reticles used to manufacture integrated circuits that fall under any of item (i) through item (viii)

2. Multilayer masks with a phase shift layer (excluding those designed to manufacture storage elements that do not fall under item (i))
- (h) Among test equipment for testing semiconductor devices or integrated circuits or those semi-finished products, those that fall under any of the following
 1. Test equipment designed for testing S-parameters of transistors at frequencies exceeding 31.8 gigahertz
 2. Deleted
 3. Test Equipment designed for testing microwave integrated circuits that fall under item (ii), (c)
- (xviii) Substrates having multiple layers consisting of heteroepitaxial growth crystals that fall under any of the following
 - (a) Silicon
 - (b) Germanium
 - (c) Silicon carbide
 - (d) III-V compounds (limited to gallium or indium compounds)
- (xix) Resists that fall under any of the following or the substrates to which they have been applied
 - (a) Positive resists used in semiconductor lithography that are designed for use at a light wavelength of less than 350 nanometers
 - (b) Resists with sensitivity to electron beams or ion beams that deliver an electric charge of 0.01 microcoulombs per square millimeter or less
 - (c) Resists with sensitivity to x-rays that deliver an electric charge of 2.5 milijoules per square millimeter or less
 - (d) Resists designed to be capable of utilizing surface image technology (including silylated resists)
- (xx) Organic metallic compounds or organic compounds that fall under any of the following
 - (a) Aluminum, gallium or indium organic compounds with a purity exceeding 99.999%
 - (b) Phosphorus, arsenic or antimony organic compounds with a purity exceeding 99.999%
- (xxi) Phosphorus, arsenic or antimony hydrides with a purity exceeding 99.999% (excluding those that contain inert gasses of 20 mole percent or less, or hydrogen)

Article 7 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 8 of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Computers or electronic assemblies thereof that fall under any of the following, or the components thereof

- (a) Electronic computers or electronic assemblies thereof designed for use at temperatures exceeding 85 degrees centigrade or below -45 degrees centigrade
- (b) Electronic computers or electronic assemblies thereof designed to prevent the impact of radiation and that fall under any of the following
 - 1. Electronic computers or electronic assemblies thereof designed to withstand atomic radiation with a total absorbed dose exceeding 5,000 grays on a silicon conversion basis
 - 2. Electronic computers or electronic assemblies thereof designed not to malfunction from an absorbed dose of atomic radiation exceeding 5 million grays per second on a silicon conversion basis
 - 3. Electronic computers or electronic assemblies thereof designed for a rate of error of less than 1/10 million per 1 bit per day from a single event error
- (c) Electronic computers or electronic assemblies thereof with functions equivalent to the functions of goods which fall under any of item (ix), item (x) or item (xii) of the next Article (excluding those which have functions equivalent to the functions of goods that fall under the item (ix), item (x) or item (xii) of the next Article, solely because the programs thereof fall under Article 20, paragraph (2), item (ix))
- (ii) Deleted
- (iii) Digital computers, electronic assemblies thereof or components designed to improve the functions of digital electronic computers that fall under any of the following (a) to (h), or the component thereof (excluding those and components thereof that fall under any of the following (i) through (k))
 - (a) Those with fault tolerant functions
 - (b) Deleted
 - (c) Digital computers with Adjusted Peak Performance exceeding 0.75 Weighted TeraFLOPS
 - (d) Deleted
 - (e) Components designed to improve digital computer functions with Adjusted Peak Performance exceeding 0.75 Weighted TeraFLOPS
 - (f) Deleted
 - (g) Those with functions that fall under item (i), (e), 1. of the preceding Article
 - (h) Equipment designed to transfer data between digital computers or electronic assemblies thereof and external devices, with a data transfer rate exceeding 1.25 gigabytes per second
 - (i) Among devices that are embedded in other equipment and that are indispensable to the operation of said equipment, those that are not key elements of said equipment

- (j) Among devices that are embedded in other equipment and that are indispensable to the operation, those the functions of which are limited to signal processing or image enhancement of that equipment
- (k) Devices embedded in goods listed in row 9 (i) to (iii), (v) or (v-2) of the appended table 1 of the Export Order and that are indispensable to the operation of those devices
- (iv) Computers that fall under any of the following, or the electronic assemblies or components thereof
 - (a) Systolic array computers
 - (b) Neural computers
 - (c) Optical computers

Article 8 Goods with specifications prescribed by the Ordinances of the Ministry of Economy, Trade and Industry in row 9 of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Telecommunication equipment, electronic changers, optical fiber communication cables, telecommunication optical fibers, phased array antennas or radio direction finding equipment for monitoring use that fall under any of the following
 - (a) Equipment which is designed to be able to guard against transient electronic influence or pulses due to nuclear explosions
 - (b) Equipment which is designed to prevent the effect of gamma rays, neutron beams or heavy electric particle rays (excluding equipment designed for mounting on satellites)
 - (c) Equipment which is designed for use at temperatures exceeding 124 degrees centigrade or at temperatures lower than -55 degrees centigrade and having electronic circuits (excluding those designed for mounting on satellites)
- (ii) Telecommunication transmission equipment, or components thereof or accessories that fall under any of the following
 - (a) Radio transmitters or radio receivers that fall under any of the following
 - 1. Telecommunication transmission equipment which can be used within a frequency range of 1.5 megahertz or more and 87.5 megahertz or less that fall under the following i. and ii. or iii.
 - i. Telecommunication transmission equipment which is capable of automatically measuring and selecting the optimum transmission frequency and the optimum general transfer rate per channel
 - ii. Telecommunication transmission equipment which uses linear amplifiers that fall under all of the following a. through d.
 - a. Telecommunication transmission equipment which are capable of amplifying two or more signals simultaneously

- b. Telecommunication transmission equipment having output characteristics of at least 1 kilowatts within a frequency range of 1.5 megahertz or more and less than 30 megahertz, and of at least 250 watts within a frequency range of 30 megahertz or more and 87.5 megahertz or less
- c. Telecommunication transmission equipment having an instantaneous bandwidth of 1 octave or more
- d. Telecommunication transmission equipment for which the high frequency or distortion component ratio relative to signal waves is less than - 80 decibels
- iii. Telecommunication transmission equipment which uses adaptive interference signal restraint technology and are designed to keep interference signals above 15 decibels
- 2. Telecommunication transmission equipment which uses spectrum spread (including frequency hopping) and which fall under any of the following (excluding those with an output of 1.0 watts or less)
 - i. Telecommunication transmission equipment in which diffusion code is capable of being rewritten by the user
 - ii. Telecommunication transmission equipment having a transmission bandwidth of 100 times or more the bandwidth of the information channel and exceeding 50 kilohertz (excluding those designed to be used for public cellular radio communication)
- 3. Telecommunication transmission equipment which uses ultra-wide bandwidth technology having a channel code or scramble code which are capable of being rewritten by the user
- (b) Among telecommunication transmission equipment having a digital signal processing function that uses voice band compression technology, those with a coding speed of less than 2,400 bits per second
- (c) Communication equipment designed for use under water that falls under any of the following
 - 1. Communication equipment which utilizes acoustic waves (including ultrasound) having a carrier frequency of less than 20 kilohertz or exceeding 60 kilohertz
 - 2. Communication equipment which utilizes electromagnetic waves and has a carrier frequency of less than 30 kilohertz
 - 3. Communication equipment having a function whereby beams are scanned electronically
- (iii) Deleted
- (iv) Optical fiber communication cables or optical fibers for communications use or accessories of these which fall under any of the following
 - (a) Among Communication optical fibers with a length exceeding 500 meters,

- those that have a tensile strength of 2 giganewtons per square meter or more
- (b) Optical fiber communications cables designed for underwater installations or accessories of these (excluding those public circuits used by communications businesses or those indicated in Article 11, item (iv), (a), 3. or (ii))
 - (v) Phased array antennas which are capable of being scanned electronically and which are designed for use at frequencies exceeding 31.8 gigahertz (excluding those used for microwave land systems (MLS) based on international civil aviation standards)
 - (v)-2 Radio direction finding equipment for monitoring with an operating frequency exceeding 30 megahertz that falls under all of the following (a) through (c), or components thereof
 - (a) Radio direction finding equipment having an instantaneous bandwidth of 1 megahertz or more
 - (b) Radio direction finding equipment which are capable of carrying out parallel processing exceeding 100 frequency channels
 - (c) Radio direction finding equipment the directions finding processing speed of which exceeds 1,000 per second per channel
 - (vi) Equipment for the design, manufacture, measurement, test, or repair of goods that fall under item (ii), (a), 2. or Article 14, item (v), or components or accessories thereof
 - (vii) In addition to what is listed in the preceding item, equipment for the design, manufacture, measurement, test, or repair of goods (excluding optical fiber testing equipment and measuring equipment) that fall under any of item (i), item (ii), item (iv), item (v), or item (v)-2, or components or accessories thereof
 - (viii) Deleted
 - (viii)-2 Equipment for the design of telecommunication transmission equipment or electronic changers that fall under any of the following, or components or accessories thereof (excluding those that fall under item (vi))
 - (a) Equipment which uses a digital transmission system and which is designed for use at a general transmission speed exceeding 15 gigabits per second (this is the number of signal bits per unit of time at the highest order multiplexing level (including information bits, line coating and overhead and other additional bits))
 - (b) Equipment using laser oscillators that falls under any of the following
 1. Laser oscillators which utilize laser light having a wavelength of more than 1,750 nanometers
 2. Laser oscillators having a function for amplifying laser light
 3. Laser oscillators which use a coherent transmission system

4. Laser oscillators which use an analog transmission system with a bandwidth exceeding 2.5 gigahertz (excluding television broadcasts (including CATV broadcasts))
- (c) Laser oscillators having an optical switching function
- (d) Radio transmitters or radio receivers which use quadrature amplitude modulation technology exceeding 256
- (e) Equipment having common channel signaling functions that operate in non compliant networks
- (ix) Encryption equipment that fall under any of the following (a) through (e) (excluding those falling under any of the following (f) through (k), or Article 3, item (xix) (c), 2., ii, or Article 10, item (v) (a)) or components thereof.
 - (a) Those which are designed to have the cryptographic functionality other than for authentication or digital signature employing digital techniques performing any cryptographic function (including those employing analogue principles when implemented with digital techniques), and fall under any of the following
 1. Those which use the symmetric algorithm employing a key length in excess of 56 bits
 2. Those which use the asymmetric algorithm where the security of the algorithm is based on the difficulty of any of the following
 - i. Factorisation of integers in excess of 512 bits
 - ii. Computation of discrete logarithms in a multiplicative group of a finite field of size greater than 512 bits
 - iii. Computation of the discrete logarithms in a group other than mentioned in ii in excess of 112 bits
 - (b) Those which are designed for performing cryptanalytic functions
 - (c) Those which are designed to use the cryptographic techniques to generate the spreading code for spread spectrum systems (including the generation of the hopping code for frequency hopping systems) (excluding those that fall on (d)).
 - (d) Those which are designed to use cryptographic techniques to generate channelizing codes, scrambling codes or network identification codes for systems using ultra-wideband modulation techniques that fall under any of the following
 1. Those whose bandwidth exceeds 500 MHz
 2. Those in which the figure gained by dividing the instantaneous bandwidth by the center frequency is over 20 percent
 - (e) Those which are designed to use the quantum cryptography
 - (f) IC cards whose cryptographic functionality is limited in use for any of the equipments that fall under following (g) to (k), or whose cryptographic functionality is widely in general use, and whose cryptographic functionality

- cannot be changed by users, and designed to use exclusively for protecting personal data stored in those IC cards.
- (g) Receiving equipment for radio broadcast or restricted audience broadcast of consumer type (including cable television broadcast in television broadcasting), and that has functionality to decode only, or functionality to cryptograph only for sending billing or programme-related information back to the broadcast providers (including cable television providers in television broadcasting providers)
 - (h) Equipment where the cryptographic capability is not user-accessible, and those are designed to have only the one or more that fall under any of the following as the cryptographic functionality
 1. Functionality to execute copy-protected programs
 2. Functionality to access to digital contents stored on copy-protected read-only media
 3. Functionality to access to encrypted and memorized digital contents on a medium that will be sold to the public with the same content
 4. Functionality for copying control of copyright protected audio/video data
 5. Functionality to encrypt and/or decrypt to protect libraries, design attributes, or associated data for the design of semiconductor devices or integrated circuits
 - (i) Cryptographic equipment designed for banking use or settlements transactions
 - (j) Portable or mobile radiotelephones for civil use or mobile telephone terminals that do not have cryptographic functionality between radiotelephones.
 - (k) Cordless telephone equipment not capable of end-to-end encryption where the maximum effective range of unboosted cordless operation is less than 400 meters in a single, unrelayed hop between terminal and home base station
 - (x) Equipment designed to prevent the leakage of information transmission signals (excluding equipment designed to prevent the leakage of signals to prevent bodily harm or malfunctions of other equipment caused by radiation of electromagnetic waves or designed to prevent leakage of signals based on electromagnetic wave obstruction standards), or components thereof
 - (xi) Deleted
 - (xii) Communication cable systems capable of detecting surreptitious intrusion, or components thereof
 - (xiii) Equipment for the design, manufacture, measurement, test or repair of goods that falls under any of item (ix), item (x) or the preceding item

Article 9 Goods with specifications prescribed by the Ordinance of the Ministry

of Economy, Trade and Industry in row 10 of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Underwater acoustic equipment utilizing acoustic waves (including ultrasound; hereinafter the same shall apply in this Article), positioning device for vessels or components thereof which fall under any of the following
 - (a) Those having a transmission function or components thereof which fall under any of the following (excluding those used solely for ocean depth measurement, for measuring underwater objects or the distance to objects buried under water or for finding schools of fish, as well as acoustic beacons, and emergency items and pingers designed to be installed at any position under water, among those used solely for vertical direction not having a scanning function exceeding plus/minus 20 degrees)
 - 1. Sounding devices used for underwater mapping that fall under the following i. and ii.
 - i. Sounding devices designed for measurement at angles which exceed 20 degrees from the vertical direction and designed to measure ocean depths exceeding 600 meters beneath the surface of the water
 - ii. Sounding devices designed to incorporate multiple beams (limited to those with an acoustic beam width of less than 1.9 degrees) or designed so that the average sounding precision value is less than 0.3 %.
 - 2. Underwater acoustic equipment which falls under any of the following
 - i. Underwater acoustic equipment in which the transmission frequency is less than 5 kilohertz or in which the operating frequency is 5 kilohertz or more and less than 10 kilohertz, and the acoustic compression level (0 decibels when the acoustic compression is 1 micro pascal at a distance of 1 meter from the source of the sound. Hereinafter the same shall apply in this item) of which exceeds 224 decibels
 - ii. Underwater acoustic equipment with an operating frequency of 10 kilohertz or more and 24 kilohertz or less and with an acoustic compression level exceeding 224 decibels
 - iii. Underwater acoustic equipment, the operating frequency of which exceeds 24 kilohertz and is less than 30 kilohertz and the acoustic compression level of which exceeds 235 decibels
 - iv. Underwater acoustic equipment, the operating frequency of which is less than 100 kilohertz and the beam width of which is capable of forming acoustic beams of less than 1 degree
 - v. Underwater acoustic equipment which is designed for use at depths exceeding 1,000 meters which falls under any of the following
 - a. Underwater acoustic equipment having a transducer which is capable

- of compensating for water pressure
- b. Underwater acoustic equipment having a transducer (an echo sender and receiver) with built-in transmitting and receiving element other than sending and receiving elements made of lead zirconate titanate
- vi. Underwater acoustic equipment designed so that the measuring distance exceeds 5,120 meters
- 3. Underwater acoustic equipment with a transmission frequency of less than 10 kilohertz (excluding those falling under 2.)
- 4. Acoustic transmitters (including transducers) which fall under any of the following (excluding sonic water generators which are electronic (limited to those which are capable of being used only in a vertical direction) or mechanical or chemical)
 - i. Acoustic transmitters which are capable of being used at frequencies of less than 10 kilohertz and the acoustic output density of which when transmitting instantaneously exceeds 0.01 milliwatts per square millimeter per hertz
 - ii. Acoustic transmitters which are capable of being used at frequencies of less than 10 kilohertz and the acoustic output density of which when transmitting continuous waves exceeds 0.001 milliwatts per square millimeter per hertz
 - iii. Acoustic transmitters in which the main rope output ratio to that of the side rope exceeds 22 decibels
- 5. Among acoustic equipment for determining the position of vessels or components thereof which are designed so that they are capable of being used at a distance exceeding 1,000 meters from a transponder, those in which the root mean square for positioning precision at a distance of 1,000 meters from a transponder is less than 10 meters
- (b) Acoustic equipment possessing a receiving function or components thereof that fall under any of the following
 - 1. Among hydrophones without a function which compensates for the effects of acceleration (0 decibels with 1 volt per micropascal; hereinafter the same shall apply in this item), those with an acoustic compression sensitivity which exceeds minus 180 decibels,
 - 2. Among signal processing equipment designed for towed hydrophone arrays and the programs of which are capable of being rewritten by the user, those which can carry out processing or correlation of the time domain or frequency domain (including spectrum analysis, digital filtering or beam formation) (excluding those which can process in real-time)
 - 3. Among heading sensors which are designed for use in towed hydrophone arrays and having an absolute precision value of less than 0.5 degrees,

those which are designed for use at depths exceeding 35 meters or those having a depth sounding device which are capable of being coordinated or removed so that heading sensors can be used at depths exceeding 35 meters

4. Among signal processing equipment which are designed for sea floor or harbor cable systems and the programs of which are capable of being rewritten by the user, those which carry out processing or correlation of the time domain or the frequency domain (spectrum analysis, digital filtering or beam formation), (excluding real-time processing)
- (ii) Among measuring equipment for the horizontal speed of the equipment carrier relative to the seabed at distances between the carrier and the seabed (limited to those utilizing acoustic waves) and which use correlation technology, those which are designed so that measurements are capable of being carried out at a position exceeding 500 meters from the bottom of the water
 - (iii) Optical detectors or components thereof that fall under any of the following
 - (a) Solid optical detectors designed for space use (excluding those using germanium or silicon) that fall under any of the following
 1. Solid optical detectors having a maximum sensitivity within a wavelength range exceeding 10 nanometers and 300 nanometers or less and the sensitivity at wavelengths exceeding 400 nanometers shall be less than 0.1% of a maximum sensitivity
 2. Solid optical detectors having a maximum sensitivity within a wavelength range exceeding 900 nanometers and 1,200 nanometers or less, and with a response time constant of 95 nanoseconds or less
 - (b) Image reinforcing tubes (excluding those using germanium or silicon) which fall under all of the following 1. through 3.
 1. Image reinforcing tubes having a maximum sensitivity within a wavelength range exceeding 400 nanometers and 1,050 nanometers or less
 2. Image reinforcing tubes having a micro channel plate wherein the distance between the center of two adjoining channels is 12 micrometers or less
 3. Image reinforcing tubes having a photocathode which falls under any of the following
 - i. Photocathodes which use a multi-alkali for the main material and in which lumen sensitivity exceeds 700 microamperes per lumen
 - ii. Photocathodes which use gallium arsenide or indium gallium arsenide as the main material
 - iii. Photocathodes which use a III-V compound semiconductor (excluding gallium arsenide or indium gallium arsenide) as the main material

- (excluding those with a maximum radiation sensitivity of 10 milliamperes per watt or less.)
- (c) Image reinforcing tubes (excluding germanium or silicon) or components thereof which fall under any of the following
1. Image reinforcing tubes which fall under all of the following i. through iii.
 - i. Image reinforcing tubes having a maximum sensitivity within a wavelength range exceeding 400 nanometers and 1,050 nanometers or less
 - ii. Image reinforcing tubes having a micro channel plate in which the distance between the centers of two adjoining channels is 12 micrometers or less
 - iii. Image reinforcing tubes having a photocathode which uses a multi-alkali as the primary material and in which lumen sensitivity in said photocathode exceeds 350 microamperes per lumen and is 700 microamperes per lumen or less
 2. Components of image reinforcing tubes which fall under any of the following
 - i. Micro channel plates wherein the distance between the center of two adjoining channels is 12 micrometers or less
 - ii. Photocathodes using gallium arsenide or indium gallium arsenide as the main material
 - iii. Photocathodes using a III-IV compound semiconductor (excluding gallium arsenide or indium gallium arsenide) as the main material (excluding those with a maximum radiation sensitivity of 10 milliamperes per watt or less)
- (d) Focal plane arrays not designed for space use that fall under the following
1. and 2. (excluding photoconduction cells with a sealed-in capsule having 16 or fewer elements; those using lead sulfide or lead selenide as well as pyroelectric detectors, those in which lanthanum has been added to 3 glycine sulfate and lead zirconate titanate, those to which lithium tartarate, vinylidene polyfluoride or strontium barium niobate has been added)
 1. Focal plane arrays which fall under any of the following
 - i. Focal plane arrays which are not heat-molded (excluding germanium or silicon) and which fall under any of the following
 - a. Focal plane arrays in which factor elements have a maximum sensitivity within a wavelength range exceeding 900 nanometers and 1,050 nanometers or less, and with a response time constant less than 0.5 nanoseconds
 - b. Focal plane arrays in which factor elements have a maximum

- sensitivity within a wavelength range exceeding 1,050 nanometers and 1,200 nanometers or less, and with a response time constant of 95 nanoseconds or less
- c. Focal plane arrays in which factor elements are arrayed two-dimensionally and in which the respective factor elements have a maximum sensitivity within a wavelength range exceeding 1,200 nanometers and 30,000 nanometers or less
 - d. Among focal plane arrays in which factor elements are arrayed one-dimensionally and in which the respective factor elements have a maximum sensitivity within a wavelength range exceeding 1,200 nanometers and 2,500 nanometers or less, those which fall under any of the following
 - 1 Focal plane arrays wherein the aspect ratio of the factor elements using the array direction of the factor elements is less than 3.8
 - 2 Focal plane arrays having a time delay and integrating function inside the same factor element
 - e. Focal plane arrays in which factor elements are arrayed one-dimensionally and in which the respective factor elements have a maximum sensitivity within a wavelength range exceeding 2,500 nanometers and 30,000 nanometers or less
 - ii. Infrared ray heat-molded focal plane arrays in which factor elements are arrayed two-dimensionally and in which the respective factor elements have a sensitivity within a wavelength range of 8,000 nanometers or more and 14,000 nanometers or less in an unfiltered state
2. Focal plane arrays which fall under any of the following
 - i. Focal plane arrays which use platinum silicon with less than 10,000 elements
 - ii. Focal plane arrays which use iridium silicon
 - iii. Focal plane arrays which use indium antimonide or lead selenide with less than 256 elements
 - iv. Focal plane arrays which use indium arsenide
 - v. Focal plane arrays which use lead sulfide
 - vi. Focal plane arrays which use indium gallium arsenide
 - vii. Scanning arrays which use mercury cadmium telluride and which fall under any of the following
 - a. Scanning arrays which do not have a time delay and integrating function inside the same detection element with 30 or less elements
 - b. Scanning arrays which have a time delay and integrating function inside the same detection element with 2 or less elements
 - viii. Steering arrays which use mercury cadmium telluride with less than

256 elements

- ix. Quantum well focal plane arrays which use gallium arsenide or aluminum gallium arsenide with less than 256 elements
 - x. Heat-molded focal plane arrays with less than 8,000 elements
- (e) Among focal plane arrays which are not designed for space use that fall under any of the following (excluding photoconduction cells with a sealed-in capsule having 16 or fewer elements, using lead sulfide or lead selenide as well as pyroelectric detectors in which lanthanum has been added to 3 glycine sulfate and lead zirconate titanate, using lithium tartarate vinylidene polyfluoride or strontium barium niobate), those other than items that fall under (d)
- 1. Focal plane arrays which are not heat-molded (excluding germanium or silicon) which fall under any of the following
 - i. Focal plane arrays in which factor elements have a maximum sensitivity within a wavelength range exceeding 900 nanometers and 1,050 nanometers or less, and with a response time constant less than 0.5 nanoseconds
 - ii. Focal plane arrays in which factor elements have a maximum sensitivity within a wavelength range exceeding 1,050 nanometers and 1,200 nanometers or less, and with a response time constant of 95 nanoseconds or less
 - iii. Focal plane arrays in which factor elements are arrayed two-dimensionally and in which the respective factor elements have a maximum sensitivity within a wavelength range exceeding 1,200 nanometers and 30,000 nanometers or less
 - iv. Among focal plane arrays in which factor elements are arrayed one-dimensionally, and in which the respective factor elements have a maximum sensitivity within a wavelength range exceeding 1,200 nanometers and 2,500 nanometers or less, those which fall under any of the following
 - a. Focal plane arrays wherein the aspect ratio of the factor elements having a factor element array direction as a standard is less than 3.8
 - b. Focal plane arrays having a time delay and integrating function inside the same factor element
 - v. Focal plane arrays in which factor elements are arrayed one-dimensionally and in which respective factor elements have a maximum sensitivity within a wavelength range exceeding 2,500 nanometers and 30,000 nanometers or less
 - 2. Infrared heat-molded focal plane arrays in which factor elements are arrayed two-dimensionally and in which the respective factor elements have a sensitivity within a wavelength range exceeding 8,000

- nanometers and 14,000 nanometers or less in an unfiltered state
- (iv) Mono-spectrum image sensors or multi-spectrum image sensors designed for remote sensing which fall under any of the following
 - (a) Mono-spectrum image sensors or multi-spectrum image sensors with an instant visual field of less than 200 microradians
 - (b) Among mono-spectrum image sensors or multi-spectrum image sensors designed for use within a wavelength range exceeding 400 nanometers and 30,000 nanometers or less, in which image data are output digitally, those which fall under any of the following
 - 1. Mono-spectrum image sensors or multi-spectrum image sensors designed for space use
 - 2. Among mono-spectrum image sensors or multi-spectrum image sensors designed for installation in aircraft using non-silicon detectors, those the instant field of vision of which is less than 2.5 milliradians
 - (v) Among equipment which uses optical detectors having a direct field of vision, that which falls under any of the following (excluding medical equipment which do not have built-in photocathodes and which uses gallium arsenide or indium gallium arsenide as the main material)
 - (a) Equipment that incorporates optical detectors that fall under any of the following
 - 1. Image reinforcing tubes that fall under item (iii), (b)
 - 2. Focal plane arrays that fall under item (iii), (e)
 - (b) Equipment with built-in optical detectors which fall under any of the following (excluding those that fall under (a))
 - 1. Image reinforcing tubes which fall under item (iii), (c), 1
 - 2. Focal plane arrays which fall under item (iii), (d)
 - (vi) Coolers for optical detectors which fall under any of the following
 - (a) Coolers for optical detectors designed for space use
 - (b) Among coolers for optical detectors which are not designed for space use, wherein the temperature of the contact surface used for cooling is less than -55 degrees centigrade, those which fall under any of the following
 - 1. Circulation type coolers, the average breakdown life or average breakdown interval of which exceeds 2,500 hours
 - 2. Joule-Thompson self-regulating coolers having a diameter of less than 8 millimeters
 - (vii) Optical fibers for use in sensors used to measure sound, temperature, acceleration, electromagnetism or radioactive rays
 - (viii) High speed cinema recording cameras, mechanical cameras, streak cameras, electronic cameras, or components thereof that fall under any of the following (excluding those falling under Article 11)
 - (a) Cameras which fall under any of the following

1. Cameras with built-in image reinforcing tubes which fall under item (iii), (b)
2. Cameras with built-focal plane arrays which fall under item (iii), (e)
- (b) Cameras which fall under any of the following (excluding those which fall under (a))
 1. Among cinema recording cameras which use film with a width of 8 millimeters or more and 16 millimeters or less, those with a photographing speed exceeding 13,150 frames per second
 2. Mechanical cameras, the photographing speed of which, when photographing a frame with a screen height of 36 millimeters, exceeds 1,000,000 frames per second
 3. Streak cameras, the photographing speed of which exceeds 10 millimeters per microsecond
 4. Electronic framing cameras, the shutter speed of which exceeds 1 million frames per second
 5. Electronic cameras which fall under the following i. and ii.
 - i. Electronic cameras in which shutter speed is less than 1 microsecond
 - ii. Electronic cameras in which signal read-out speed exceeds 125 frames per second
 6. Plugging units which are capable of being used in cinema recording cameras having a module type structure, mechanical cameras, streak cameras, electronic framing cameras or electronic cameras which are capable of carrying out the functions which fall under any of 3. through 5.
 7. Among video cameras that incorporate solid-state image sensors having a maximum sensitivity within a wavelength range exceeding 10 nanometer and 30,000 nanometers or less, those which fall under any of the following i. through iii. and also fall under any of the following iv. through vi.
 - i. Video cameras used for black and white photography in which solid-state image sensor have exceeding 4,000,000 effective pixels
 - ii. Video cameras used for color photography that incorporate three solid-state image sensors, in which the respective solid-state image sensor have exceeding 4,000,000 effective pixels
 - iii. Video cameras for color photography that incorporate one solid-state image sensor, in which the solid-state image sensor have exceeding 12,000,000 effective pixels
 - iv. Video cameras having a reflector that fall under item (ix), (a)
 - v. Video cameras having a control device having an optical device or optical components which fall under item (ix), (d)
 - vi. Video cameras having a function which enables them to internally

- process tracking data for the object to be photographed by the camera and to record these in the image information
8. Scanning cameras or scanning camera equipment that fall under all of the following i. through iii.
 - i. Scanning cameras or scanning camera equipment having a maximum sensitivity within a wavelength range exceeding 10 nanometers and 30,000 nanometers or less
 - ii. Scanning cameras or scanning camera equipment that incorporates solid-state image sensor in which the pixels are arrayed in a linear fashion and the number of pixels is exceeding 8,192
 - iii. Scanning cameras or scanning camera equipment which scan mechanically in one direction
 9. Scanning cameras or scanning camera equipment with a built-in image reinforcing tube which fall under item (iii), (c), 1.
 10. Scanning cameras or scanning camera equipment with a built-in focal plane array which falls under item (iii), (d)
- (ix) Optical equipment or components thereof which fall under any of the following
- (a) Reflectors which fall under any of the following
 1. Reflectors which are capable of changing the shape of the mirror surface at frequencies exceeding 100 hertz, or components thereof
 2. Among reflectors which do not have parts made of composite materials or foams, in which the mirror surface has a mass per square meter of less than 30 kilograms, those in which the total weight exceeds 10 kilograms
 3. Among reflectors which do have parts made of composite materials or foams, in which the mirror surface has a mass per square meter of less than 30 kilograms, those in which the total weight exceeds 2 kilograms
 4. Among reflectors used to control the direction of light and with a flatness of 316.5 nanometers or less, those in which the diameter of the mirror surface of which or the length of the major axis of which exceeds 100 millimeters, and in which control bandwidth exceeds 100 hertz
 - (b) Among optical components made up of zinc selenide or zinc sulfide, which are permeable to light with a wavelength exceeding 3,000 nanometers and 25,000 nanometers or less, those which fall under any of the following
 1. Optical components with a volume exceeding 100 cubic centimeter
 2. Optical components, the diameter or major axis length of which exceeds 80 millimeters and the thickness of which exceeds 20 millimeters
 - (c) Optical components designed for space use which fall under any of the following

1. Optical components which have been made lighter for weights which are less than 20 % compared to the condition of full density of the body.
 2. Substrates (including coating substrates or substrates having a protective film)
 3. Reflectors which are designed so that they are capable of being assembled during space flight and components which are equivalent to reflecting mirrors the sum of the light receiving surface areas when assembled of which is an aperture greater than 1 meter
 4. Optical components made of composite materials, the linear coefficient of expansion in all directions of which is not more than 5/1,000,000 per degree of temperature
- (d) Controllers of optical equipment or components that fall under any of the following
1. Controllers which are designed to maintain the surface shape or direction of optical components which have been designed for space use which fall under (c) 1. or (c) 3.
 2. Optical components which are used to scan, track or stabilize light at bandwidths of 100 hertz or more or coordinate optical resonators, and the precision of which is 10 microradians or less
 3. Gimbals with a maximum deflection angle exceeding 5 degrees, which are capable of being used in bandwidths of 100 hertz or more which fall under any of the following
 - i. Gimbals with a length of diameter or major axis exceeding 0.15 meters and 1 meter or less, and with an angular acceleration exceeding 2 radians per second squared and with a precision of 200 microradians or less
 - ii. Gimbals with a length of diameter or major axis exceeding 1 meter, and with an angular acceleration exceeding 0.5 radians per second squared and with a precision of 200 microradians or less
 4. Controllers designed to control an optical system (limited to those which are capable of being used to adjust the phase of the reflecting mirror) made up of a reflector having a diameter or major axis length which is greater than 1 meter
- (ix)-2 Aspherical optical elements which fall under all of (a) through (c) (excluding those which fall under Article 6, item (xvii))
- (a) Aspherical optical elements, the maximum measurement for the optical aperture of which exceeds 400 millimeters
 - (b) Aspherical optical elements having a root mean square surface roughness of less than 1 nanometer at a sampling length of 1 millimeter or more
 - (c) Aspherical optical elements for which the absolute value of the linear coefficient of expansion at a temperature of 25 degrees centigrade is less

than 3/1,000,000

- (x) Laser oscillators or components thereof, accessories or test equipment that fall under any of the following
 - (a) Gas laser oscillators which fall under any of the following
 - 1. Excimer laser oscillators which fall under any of the following (excluding those which fall under Article 6, item (xvii))
 - i. Excimer laser oscillators which are designed for use at wavelengths of 150 nanometers or less and which fall under any of the following
 - a. Excimer laser oscillators which generate pulses exceeding 50 millijoules per pulse
 - b. Excimer laser oscillators the average output of which exceeds 1 watt
 - ii. Excimer laser oscillators which are designed for use within a wavelength range exceeding 150 nanometers and 190 nanometers or less and which fall under any of the following
 - a. Excimer laser oscillators which generate pulses exceeding 1.5 joules per pulse
 - b. Excimer laser oscillators the average output of which exceeds 120 watts
 - iii. Excimer laser oscillators which are designed for use within a wavelength range exceeding 190 nanometers and 360 nanometers or more and which fall under any of the following
 - a. Excimer laser oscillators which generate pulses exceeding 10 joules per pulse
 - b. Excimer laser oscillators the average output of which exceeds 500 watts
 - iv. Excimer laser oscillators which are designed for use at wavelengths exceeding 360 nanometers and which fall under any of the following
 - a. Excimer laser oscillators which generate pulses exceeding 1.5 joules per pulse
 - b. Excimer laser oscillators the average output of which exceeds 30 watts
 - 2. Metal vapor laser oscillators which fall under any of the following
 - i. Copper laser oscillators the average output of which exceeds 20 watts
 - ii. Metal laser oscillators the average output of which exceeds 5 watts
 - iii. Sodium laser oscillators the rated output of which exceeds 5 watts
 - iv. Barium laser oscillators the average output of which exceeds 2 watts
 - 3. Carbon monoxide laser oscillators which fall under any of the following
 - i. Carbon monoxide laser oscillators which generate pulses exceeding 2 joules per pulse and the pulse peak output of which exceeds 5 kilowatts
 - ii. Carbon monoxide laser oscillators the average output of which or the continuous wave rated output of which exceeds 5 kilowatts

4. Carbon dioxide laser oscillators (excluding those designed to excite by excitation transfer from deuterium fluoride) which fall under any of the following
 - i. Carbon dioxide laser oscillators the continuous wave rated output of which exceeds 15 kilowatts
 - ii. Carbon dioxide laser oscillators which generate pulses with a pulse width exceeding 10 microseconds and which fall under any of the following
 - a. Carbon dioxide laser oscillators with an average output exceeding 10 kilowatts
 - b. Carbon dioxide laser oscillators with a pulse peak output exceeding 100 kilowatts
 - iii. Carbon dioxide laser oscillators which generate pulses with a pulse width of 10 microseconds or less and which fall under the following
 - a. Carbon dioxide laser oscillators which generate pulses exceeding 5 joules per pulse
 - b. Carbon dioxide laser oscillators the average output of which exceeds 2.5 kilowatts
5. Chemical laser oscillators which fall under any of the following
 - i. Hydrogen fluoride laser oscillators
 - ii. Deuterium fluoride laser oscillators
 - iii. Transfer laser oscillators which fall under any of the following
 - a. Iodine laser oscillators which are designed so that they are capable of being excited by excitation transfer from oxygen
 - b. Carbon dioxide laser oscillators which are designed to be excited by excitation transfer from deuterium fluoride
6. Krypton ion laser oscillators or argon ion laser oscillators which fall under any of the following
 - i. Krypton ion laser oscillators or argon ion laser oscillators which generate pulses exceeding 1.5 joules per pulse and the pulse peak output of which exceeds 50 watts
 - ii. Krypton ion laser oscillators or argon ion laser oscillators the average output or continuous wave rated output of which exceeds 50 watts
7. Excimer laser oscillators, copper laser oscillators, metal laser oscillators, sodium laser oscillators, barium laser oscillators, carbon monoxide laser oscillators, carbon dioxide laser oscillators, hydrogen fluoride laser oscillators, deuterium fluoride oscillators, and laser oscillators designed to be excited by excitation transfer from oxygen, krypton ion laser oscillators, argon laser oscillators and gas laser oscillators other nitrogen laser oscillators which fall under any of the following
 - i. Laser oscillators which are designed for use at wavelengths of 150

- nanometers or less and which fall under any of the following
- a. Laser oscillators which generate pulses exceeding 50 millijoules per pulse and the pulse peak output of which exceeds 1 watt
 - b. Those the average output or continuous wave rated output of which exceeds 1 watt
 - ii. Laser oscillators which are designed for use within a wavelength range exceeding 150 nanometers and 800 nanometers or less and which fall under any of the following
 - a. Laser oscillators which generate pulses exceeding 1.5 joules per pulse and with a pulse peak output exceeding 30 watts
 - b. Laser oscillators with an average output or a rated output of continuous wave exceeding 30 watts
 - iii. Laser oscillators which are designed for use within a wavelength range exceeding 800 nanometers and 1,400 nanometers or less that fall under any of the following
 - a. Laser oscillators which generate pulses exceeding 0.25 joules per pulse and the pulse peak output of which exceeds 10 watts
 - b. Laser oscillators the average output or continuous wave rated output of which exceeds 10 watts
 - iv. Laser oscillators which are designed for use at wavelengths exceeding 1,400 nanometers and the average output or continuous wave rated output of which exceeds 1 watt
- (b) Semiconductor laser oscillators which fall under any of the following
1. Single transverse mode semiconductor laser oscillators which fall under any of the following
 - i. Among single transverse mode semiconductor laser oscillators which are designed for use within a wavelength range of 1,510 nanometers or less, those with an average output or continuous wave rated output exceeding 1.5 watts
 - ii. Among single transverse mode semiconductor laser oscillators which are designed for use within a wavelength range exceeding 1,510 nanometers, those with an average output or continuous wave rated output exceeding 500 milliwatts
 2. Multiple transverse mode semiconductor laser oscillators which fall under any of the following
 - i. Among multiple transverse mode semiconductor laser oscillators which are designed for use within a wavelength range of less than 1,400 nanometers, those with an average output or continuous wave rated output exceeding 10 watts
 - ii. Among multiple transverse mode semiconductor laser oscillators which are designed for use within a wavelength range of 1,400

- nanometers or more and less than 1,900 nanometers, those with an average output or continuous wave rated output exceeding 2.5 watts
- iii. Among multiple transverse mode semiconductor laser oscillators which are designed for use within a wavelength range of 1,900 nanometers or more, those with an average output or continuous wave rated output exceeding 1 watt
- 3. Semiconductor laser arrays with integrated semiconductor laser oscillators that fall under any of the following
 - i. Among semiconductor laser arrays with integrated semiconductor laser oscillators which are designed for use within a wavelength range of less than 1,400 nanometers, those with an average output or continuous wave rated output exceeding 80 watts
 - ii. Among semiconductor laser arrays with integrated semiconductor laser oscillators which are designed for use within a wavelength range of 1,400 nanometers or more and less than 1,900 nanometer, those with an average output or continuous wave rated output exceeding 25 watts
 - iii. Among semiconductor laser arrays with integrated semiconductor laser oscillators which are designed for use within a wavelength range of 1,900 nanometers or more, those with an average output or a continuous wave rated output exceeding 10 watts
- 4. Semiconductor laser array stacks which include the arrays falling under 3. above
- (c) Solid-state laser oscillators which fall under the following
 - 1. Variable wavelength oscillators (including titanium sapphire laser oscillators, thulium YAG laser oscillators, thulium YSGG laser oscillators, alexandrite laser oscillators or color center laser oscillators; the same shall apply in 2.) which fall under any of the following
 - i. Variable wavelength oscillators which are designed for use at wavelengths of less than 600 nanometers and which fall under any of the following
 - a. Variable wavelength oscillators which generate pulses exceeding 50 millijoules per pulse and the pulse peak output of which exceeds 1 watt
 - b. Variable wavelength oscillators, the average output or continuous wave rated output of which exceeds 1 watt
 - ii. Variable wavelength oscillators which are designed for use within a wavelength range of 600 nanometers or more and 1,400 nanometers or less and which fall under any of the following
 - a. Variable wavelength oscillators which generate pulses exceeding 1 joule per pulse and the pulse peak output of which exceeds 20 watts

- b. Variable wavelength oscillators, the average output or continuous wave rated output of which exceeds 20 watts
- iii. Variable wavelength oscillators which are designed for use at wavelengths exceeding 1,400 nanometers and which fall under any of the following
 - a. Variable wavelength oscillators which generate pulses exceeding 50 millijoules per pulse the pulse peak output of which exceeds 1 watt
 - b. Variable wavelength oscillators, the average output or continuous wave rated output of which for which exceeds 1 watt
- 2. Solid-state laser oscillators other than variable wavelength laser oscillators (including atomic transition solid state laser oscillators) which fall under any of the following
 - i. Neodymium glass laser oscillators which fall under any of the following
 - a. Neodymium glass laser oscillators which use Q switches and which fall under any of the following
 - 1 Neodymium glass laser oscillators which generate pulses exceeding 20 joules per pulse and 50 joules or less and with an average output exceeding 10 watts
 - 2 Neodymium glass laser oscillators which generate pulses exceeding 50 joules per pulse
 - b. Neodymium glass laser oscillators which do not use Q switches and which fall under any of the following
 - 1 Neodymium glass laser oscillators which generate pulses exceeding 50 joules per pulse and 100 joules or less and with an average output exceeding 20 watts
 - 2 Neodymium glass laser oscillators which generate pulses exceeding 100 joules per pulse
 - ii. Solid-state laser oscillators (excluding neodymium glass laser oscillators) with added neodymium which are designed for use within a wavelength range exceeding 1,000 nanometers and 1,100 nanometers or less and which fall under any of the following
 - a. Among solid-state laser oscillators which use pulse excitation, Q switch and mode synchronization, and which generate pulses with a pulse width of less than 1 nanosecond, those which fall under any of the following
 - 1 Solid-state laser oscillators, the pulse peak output of which exceeds 5 gigawatts
 - 2 Solid-state laser oscillators, the average output of which exceeds 10 watts
 - 3 Solid-state laser oscillators which generate pulses exceeding 0.1 joules per pulse

- b. Among solid-state laser oscillators which use pulse excitation and Q switches, and which generate pulses with a pulse width greater than 1 nanosecond, those which fall under any of the following
 - 1 Solid-state laser oscillators which generate single transverse mode pulses and which fall under any of the following
 - i) Solid-state laser oscillators, the pulse peak output of which exceeds 100 megawatts
 - ii) Solid-state laser oscillators, the average output of which exceeds 20 watts
 - iii) Solid-state laser oscillators which generate pulses which exceed 2 joules per pulse
 - 2 Solid-state laser oscillators which generate multiple transverse mode pulses and which fall under any of the following
 - i) Solid-state laser oscillators, the pulse peak output of which exceeds 400 megawatts
 - ii) Solid-state laser oscillators, the average output of which exceeds 2 kilowatts
 - iii) Solid-state laser oscillators which generate pulses exceeding 2 joules per pulse
- c. Solid-state laser oscillators which use pulse excitation and do not use Q switches and which fall under any of the following
 - 1 Solid-state laser oscillators which generate single transverse mode pulses and which fall under any of the following
 - i) Solid-state laser oscillators, the pulse peak output of which exceeds 500 kilowatts
 - ii) Solid-state laser oscillators, the average output of which exceeds 150 watts
 - 2 Solid-state laser oscillators which generate multiple transverse mode pulses and which fall under any of the following
 - i) Solid-state laser oscillators, the pulse peak output of which exceeds 1 megawatt
 - ii) Solid-state laser oscillators, the average output of which exceeds 2 kilowatts
- d. Solid-state laser oscillators which use continuous excitation and which fall under any of the following
 - 1 Solid-state laser oscillators which generate single transverse mode pulses and which fall under any of the following
 - i) Solid-state laser oscillators, the pulse peak output of which exceeds 500 kilowatts
 - ii) Solid-state laser oscillators, the average output or continuous wave rated output of which exceeds 150 watts

- 2 Solid-state laser oscillators which generate multiple transverse mode pulses and which fall under any of the following
 - i) Solid-state laser oscillators, the pulse peak output of which exceeds 1 megawatt
 - ii) Solid-state laser oscillators, the average output or continuous wave rated output of which exceeds 2 kilowatts
 - iii. Solid-state laser oscillators other than neodymium glass laser oscillators or solid state laser oscillators with added neodymium (limited to those designed for use within a wavelength range exceeding 1,000 nanometers and 1,100 nanometers or less.) which fall under any of the following
 - a. Solid-state laser oscillators which are designed for use at wavelengths of less than 150 nanometers and which fall under any of the following
 - 1 Solid-state laser oscillators which generate pulses exceeding 50 millijoules per pulse, and the pulse peak output of which exceeds 1 watt
 - 2 Solid-state laser oscillators, the average output or continuous wave rated output of which exceeds 1 watt.
 - b. Solid-state laser oscillators which are designed for use within a wavelength range of 150 nanometers or more and 800 nanometers or less and which fall under any of the following
 - 1 Solid-state laser oscillators which generate pulses exceeding 1.5 joules per pulse, and the pulse peak output of which exceeds 30 watts
 - 2 Solid-state laser oscillators, the average output or continuous wave rated output of which exceeds 30 watts
 - c. Solid-state laser oscillators which are designed for use within a wavelength range exceeding 800 nanometers and 1,400 nanometers or less and which fall under any of the following
 - 1 Solid-state laser oscillators which use Q switches and which fall under any of the following
 - i) Solid-state laser oscillators which generate pulses exceeding 0.5 Joules per pulse, and the pulse peak output of which exceeds 50 watts
 - ii) Solid-state laser oscillators, the single transverse mode average output of which exceeds 10 watts
 - iii) Solid-state laser oscillators, the multiple transverse mode average output of which exceeds 30 watts
 - 2 Solid-state laser oscillators which do not use Q switches and which fall under any of the following
 - i) Solid-state laser oscillators which generate pulses exceeding 2 joules per pulse and the pulse peak output of which exceeds 50 watts

- ii) Solid-state laser oscillators, the average output or continuous wave rated output of which exceeds 50 watts
- d. Solid-state laser oscillators which are designed for use at wavelengths exceeding 1,400 nanometers and which fall under any of the following
 - 1 Solid-state laser oscillators which generate pulses exceeding 100 millijoules per pulse, and the pulse peak output of which exceeds 1 watt
 - 2 Solid-state laser oscillators, the average output or continuous wave rated output of which exceeds 1 watt
- (d) Liquid laser oscillators (including dye laser oscillators) which fall under any of the following
 - 1. Liquid laser oscillators which are designed for use at wavelengths of less than 150 nanometers and which fall under any of the following
 - i. Liquid laser oscillators which generate pulses exceeding 50 millijoules per pulse and the pulse peak output of which exceeds 1 watt
 - ii. Liquid laser oscillators, the average output or continuous wave rated output of which exceeds 1 watt
 - 2. Liquid laser oscillators which are designed for use within a wavelength range of 150 nanometers or more and 800 nanometers or less and which fall under any of the following
 - i. Liquid laser oscillators which generate pulses exceeding 1.5 joules per pulse, and the pulse peak output of which exceeds 20 watts
 - ii. Liquid laser oscillators, the average output or continuous wave rated output of which exceeds 20 watts
 - iii. Liquid laser oscillators which generate single transverse mode pulses the average output of which exceeds 1 watt and the pulse repetition frequency of which when the pulse width is less than 100 nanoseconds exceeds 1 kilohertz
 - 3. Liquid laser oscillators which are designed for use within a wavelength range exceeding 800 nanometers and 1,400 nanometers or less which fall under any of the following
 - i. Liquid laser oscillators which generate pulses exceeding 0.5 joules per pulse, and the pulse peak output of which exceeds 10 watts
 - ii. Liquid laser oscillators, the average output or continuous wave rated output of which exceeds 10 watts
 - 4. Liquid laser oscillators which are designed for use at wavelengths exceeding 1,400 nanometers and which fall under any of the following
 - i. Liquid laser oscillators which generate pulses exceeding 100 millijoules per pulse, the pulse peak output of which exceeds 1 watt
 - ii. Liquid laser oscillators, the average output or continuous wave rated

- output of which exceeds 1 watt
- (e) Components for laser oscillators which fall under any of the following
 1. Reflectors which are designed for cooling by using a heat pipe or by passing a fluid at a position which is less than 1 millimeter beneath the surface of the mirror
 2. Reflectors, or optical components or electro-optical components which are permeable (including partially permeable), and which are designed for use in laser oscillators which fall under any of (a) through (d)
 - (f) Test equipment or accessories for laser oscillators which fall under any of the following
 1. Among equipment for measuring wave surface which is capable of measuring the phase of a wave surface of laser light at 50 or more locations, those that fall under any of the following
 - i. Equipment for measuring wave surface with a frame speed of 100 hertz or more and with a phase identification capability of 5 % or less of the wavelength of the laser light
 - ii. Equipment for measuring wave surface with a frame speed of 1,000 hertz or more and with a phase identification capability of 20 % or less of the wavelength of the laser light
 2. Test equipment for laser oscillators which is capable of measuring errors in the beam deflection angle of an ultra-high output laser oscillator (laser oscillators which are capable of output energy exceeding 1 kilojoule per 50 milliseconds or the average output or continuous wave rated output of which exceeds 20 kilowatts; the same shall apply hereinafter) of less than 10 microradians
 3. Accessories for phased array type ultra-high output laser oscillators which synthesize coherent light at 1/10 of the wavelength used or at a precision of 0.1 micrometers or less
 4. Projection telescopes which are designed for use in combination with ultra-high output laser oscillators
 - (xi) Magnetometers or magnetic gradiometers or calibration equipment or components thereof which fall under any of the following (excluding those designed for medical purposes)
 - (a) Magnetometers which utilize superconducting technology which fall under any of the following
 1. Among magnetometers which utilize superconducting technology designed so that they are capable of being operated in a stationary state, not having a device which is designed to reduce noise occurring during operations, those for which the noise level at a 1 hertz frequency (the effective value indicated per square root of the band frequency; the same shall apply hereinafter) is 50 femtoteslas or less

2. Magnetometers which utilize superconducting technology having a device designed to reduce noise occurring during operations, the noise level at a 1 hertz frequency of which is less than 20 picoteslas
- (b) Magnetometers which utilize an optical pump or nuclear magnetic resonance technology, the noise level of which is less than 2 picoteslas
- (c) Magnetometers which utilize an optical pump or nuclear magnetic resonance technology, the noise level of which is 2 picoteslas or more and less than 20 picoteslas
- (d) Magnetometers which utilize triaxial flux gate technology, the noise level at 1 hertz frequency of which is 10 picoteslas or less
- (e) Magnetometers using an induction coil which fall under any of the following
 1. Magnetometers which use an induction coil, the noise level at a frequency of less than 1 hertz of which is less than 0.05 nanoteslas
 2. Magnetometers which use an induction coil, the noise level at frequencies of 1 hertz or more and 10 hertz or less of which is less than 0.001 nanoteslas
 3. Magnetometers which use an induction coil, the noise level at frequencies exceeding 10 hertz of which is less than 0.0001 nanoteslas
- (f) Magnetometers which use optical fiber, the noise level of which is less than 1 nanoteslas
- (g) Magnetic gradiometers using two or more magnetometers which fall under any of (a) through (f) above
- (h) Among magnetic gradiometers which use optical fibers and intrinsic type gradiometers (those having a single detection element per axle; hereinafter the same shall apply in this item), those the noise level of which is less than 0.3 nanoteslas per meter
- (i) Among magnetic gradiometers which do not use optical fibers and which are intrinsic gradiometers, those the noise level of which is less than 0.015 nanoteslas per meter
- (j) Among calibration equipment for magnetometers or magnetic gradiometers which are designed to be mounted on vehicles, vessels, aircraft or satellites and other types of spacecraft for space development, those having output only for the absolute value of terrestrial magnetic fields
- (k) Calibration equipment for magnetometers or magnetic gradiometers which are designed to be mounted on vehicles, vessels, aircraft or satellites and other types of spacecraft for space development (excluding those falling under (j))
- (xii) Gravity meters that fall under any of the following or gravity gradiometers

- (a) Gravity meters designed for ground use with a precision of less than 10 microgals when gravity is measured in a stationary state (excluding Woldon types)
- (b) Gravity meters designed for mounting on movable bodies that fall under the following 1. and 2.
 - 1. Gravity meters the precision of which when gravity is measured in a stationary state is less than 0.7 milligals
 - 2. Gravity meters the precision of which when gravity is measured in a fluctuating state is less than 0.7 milligals and for which required measuring time is less than 2 minutes
- (xiii) Radars that fall under any of the following or components thereof (excluding secondary supervisory radar, automobile radar designed to prevent collisions, display equipment for aircraft control use with resolution of 12 or less per millimeter and meteorological radar and components thereof)
 - (a) Radars that can be used within a frequency range of 40 gigahertz or more and 230 gigahertz or less and with an average output exceeding 100 milliwatts
 - (b) Radars having a bandwidth capable of being tuned that exceeds the center frequency by 12.5 %
 - (c) Radars which are capable of using three or more carrier frequencies simultaneously
 - (d) Radars which are capable of being used as synthetic aperture radar, reverse synthetic radar or supervisory radar
 - (e) Radars with built-in phased array antennas which are capable of electronic scanning
 - (f) Radars which are capable of measuring a target altitude (excluding Precision Approach Radar based on international civil aviation organization standards)
 - (g) Radars which are designed to be mounted on balloons or aircraft and which utilize the Doppler effect to detect a moving target
 - (h) Radars which utilize any of the following technologies
 - 1. Spectrum spread
 - 2. Frequency agility
 - (i) Radars for ground use, the measured distance of which exceeds 185 km (excluding fishing ground supervisory radar and ground radar and meteorological balloon tracking radar designed for air control use.)
 - (j) Laser radar (including lidar) which falls under any of the following (excluding lidars for surveying and meteorological observation use.)
 - 1. Laser radar designed for space use
 - 2. Laser radar which utilize heterodyne phase detection or homodyne

phase detection technology and the angular resolution of which is less than 20 microradians

- (k) Radars which utilize pulse compression technology which fall under any of the following
 - 1. Radars with a pulse compression ratio exceeding 150
 - 2. Radars with a pulse width less than 200 nanoseconds
- (l) Radars which utilize data processing technology which fall under any of the following
 - 1. Automatic target tracking technology which is capable of estimating the future position of a target starting from the point where the next antenna beam passes (excluding those used to prevent collisions, used for air control, for installation on vessels or for harbor use.)
 - 2. Technology which is used to calculate the target speed using the following types of radar the scanning speed of which is not constant.
 - 3. Technology which uses radar with mutual distance exceeding 1,500 meters, which uses two or more types of radar to switch data in real time and which superposes target data to emphasize or identify a target (excluding those used for sea traffic control.)
 - 4. Technology which uses two or more types of radar which include radar installed on airframes for vehicles, vessels, aircraft or satellites or other types of spacecraft for space development (limited to those which switch data in real time), and combines object data and performs correlation or data fusion to emphasize or distinguish the objective (excluding that used in marine traffic administration)
- (xiv) Optical measuring equipment that falls under any of the following
 - (a) Equipment for measuring optical reflectance (limited to those which measure the absolute value of reflectance) the precision absolute value of which is 0.1 % or less
 - (b) Among equipment (limited to non-contact type) for measuring the surface shape of lenses or reflectors, which uses a method other than measurement of light scattering, that having an aperture diameter exceeding 10 centimeters and designed for measuring surface shapes which are not planar at a precision of 2 nanometers or less
- (xv) Equipment for the manufacture or calibration equipment of gravity meters for ground use (limited to those the precision of which, when gravity is measured in a stationary state, is less than 0.1 milligals)
- (xvi) Crystals for optical detectors and other material or laser oscillators made of a material for optical components that falls under any of the following:
 - (a) Tellurium with a purity of 99.9995 % or more
 - (b) Wafers having a single crystal or epitaxial growth crystal which fall under any of the following

1. Cadmium zinc telluride the mole ratio for zinc telluride relative to cadmium telluride and zinc telluride for which is less than 6 %
 2. Cadmium telluride
 3. Cadmium mercury telluride
- (c) Among substrate materials made up of zinc selenide or zinc sulfide manufactured by the chemical vapor phase growth methods, those which fall under any of the following
1. Substrate materials, the volume of which exceeds 100 cubic centimeters
 2. Substrate materials, the diameter of which exceeds 80 millimeters and the thickness of which is 20 millimeters or more
- (d) Solid state electro-chemical materials which fall under any of the following.
1. Potassium titanyl arsenate
 2. Silver gallium selenide
 3. Arsenic thallium selenide
- (e) Non-linear optical materials which fall under the following 1. and 2.
1. Non-linear optical materials the cubic susceptibility of which is greater than $1/1,000,000$ per square meter per volt per volt
 2. Non-linear optical materials the response time of which is less than 1 millisecond
- (f) Substrate materials made up of materials having beryllium stacked on beryllium or substrate material made up of silicon carbide having a diameter or major axis length which exceeds 300 millimeters.
- (g) Optical glass which falls under all of the following 1. through 3.
1. Optical glass the hydroxide ion content of which is less than 0.0005 % of the total weight
 2. Optical glass the metal impurities content of which is less than 0.0001 % of the total weight
 3. Optical glass the refractive index variation of which is less than $5/1,000,000$
- (h) Artificial diamonds the absorption coefficient of which is less than $1/100,000$ per centimeter within a wavelength range exceeding 200 nanometers and 14,000 nanometers or less
- (i) Among artificial crystals for laser oscillators that are unfinished, those that fall under any of the following
1. Sapphires with titanium added
 2. Alexandrite

Article 10 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 11 of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Among linear accelerometers used for inertial navigation systems or inertial guidance systems, those that fall under any of the following or components thereof
 - (a) Linear accelerometers with a bias stability (following calibration; hereinafter the same shall apply in this Article) of less than 0.00128 meters per second squared per year
 - (b) Linear accelerometers with a scale factor stability of less than 0.013 % per year
 - (c) Linear accelerometers designed so that they are capable of being used at a linear acceleration exceeding 981 meters per second squared
- (ii) Gyroscopes, angular accelerometers or rotary accelerometers which fall under any of the following or components thereof
 - (a) Gyroscopes, angular accelerometers or rotary accelerometers in which drift rate stability in a linear acceleration state per 9.81 meters per second squared per month, and falls under any of the following
 1. Gyroscopes, angular accelerometers or rotary accelerometers which are designed for use at a linear acceleration of less than 117.7 meters per second squared in which linear acceleration is less than 0.1 degrees per hour
 2. Gyroscopes, angular accelerometers or rotary accelerometers which are designed for use at a linear acceleration of 117.7 meters per second squared or more and 981 meters per second squared or less in which a linear acceleration is less than 0.5 degrees per hour
 - (b) Gyroscopes, angular accelerometers or rotary accelerometers the effective value of which indicates the angular random walk in degrees per square root of hours of 0.0035 degrees or less (excluding spinning mass gyro)
 - (c) Gyroscopes, angular accelerometers or rotary accelerometer designed so that they are capable of being used at a linear acceleration which exceeds 981 meters per second squared
- (iii) Inertial navigation systems used for aircraft, ground use vessels or space use (limited to gimbal systems or strap down systems) or inertial systems used for attitude sensing, guidance or control which fall under any of the following (excluding those authorized for civil aviation use by Japan or by any of the government organizations indicated in the regions listed in the appended table 2) or components thereof
 - (a) Those in which mean error radius after normal alignment is 0.8 nautical miles per hour or less
 - (b) Inertial navigation systems which are designed for use at linear accelerations which exceed 98.1 meters per second squared
- (iii)-2 Hybrid inertial navigation systems with internally stored global satellite navigation systems used for attitude sensing, guidance or control or data

- reference navigation systems (hereinafter in this Article "specific navigation systems") in which mean error radius after loss of data from a specific navigation system after normal alignment is less than 10 meters per four-minute period or components thereof
- (iii)-3 Inertial systems indicating the traveling direction, the nose (bow) direction, or the true north direction which fall under any of the following or components thereof
 - (a) Inertial systems in which executed error value indicating the traveling direction, nose (bow) direction or true north direction at 45 degrees latitude is six minutes or less (excluding theodolites comprising an inertial system and those designed for civil use.)
 - (b) Inertial systems which are capable of withstanding shock acceleration for a period of more than 1 millisecond in a non-operating state at more than 8,829 meters per second squared
 - (iv) Gyroscopes for celestial navigation or devices that derive position or orientation by means of automatically tracking celestial bodies or satellites and which have a bearing accuracy of 5 seconds or less
 - (v) Devices which receive radio waves from global navigation satellite systems that fall under any of the following, or components thereof
 - (a) Those having a cipher decoding function
 - (b) Those having a null steerable antenna
 - (vi) Among aircraft altimeters which are designed for use at frequencies greater than 4.4 gigahertz or at frequencies lower than 4.2 gigahertz, those which fall under any of the following
 - (a) Aircraft altimeters having a transmission output control function
 - (b) Aircraft altimeters having a phase deviation modulation function
 - (vii) Deleted
 - (viii) Test equipment, calibration equipment, alignment equipment or equipment for manufacture that fall under any of item (i) through item (vi)
 - (ix) Devices which are designed to confirm the characteristics of the mirror surface of a ring laser gyro that fall under any of the following
 - (a) Scatterometers having a measuring precision of 0.001 % or less
 - (b) Profilometers having a measuring precision of 0.5 nanometers or less

Article 11 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 12 of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Among small mooring-rope type submersible boats which are designed so that they are capable of being used at depths exceeding 1,000 meters, those which fall under any of the following
 - (a) Manned submersible vessels

- (b) Unmanned submersible vessels which fall under any of the following
 1. Small unmanned submersible vessels which use direct current propulsion electric motors and which are designed so that they are capable of being used for navigation unaided
 2. Small unmanned submersible boats capable of transmitting and receiving data using optical fiber
- (ii) Equipment which is used to recover objects at depths exceeding 250 meters having a cargo unloading capability exceeding 5 mega newtons and which fall under any of the following
 - (a) Equipment having an automatic ship position maintaining device which is capable of maintaining the position of the ship within a range of 20 meters from a point set by the navigation device
 - (b) Equipment which is capable of maintaining a position within a range of 10 meters from a preset point at depths exceeding 1,000 meters
- (iii) Surface ships which fall under any of the following
 - (a) Air-cushion vehicles which fall under any the following
 1. Among side wall type vehicles (limited to those with attached flexible skirts on the periphery of the ship's hull) designed so that the maximum value of the speed when full, and when the significant wave height is 1.25 meters or more, and the speed of which exceeds 30 knots, those for which the cushioning pressure exceeds 3,830 pascals and the ratio of light load displacement relative to full load displacement is less than 70 %
 2. Side wall type vehicles which are designed so that the maximum value of the speed when full when the significant wave height is 3.25 meters or more, exceeds 40 knots
 - (b) Among hydrofoil ships which are designed so that the maximum value of the speed when full when significant wave height is 3.25 meters or more exceeds 40 knots, those which have a device to automatically control the hydrofoil by measuring the condition of the waves and other data
 - (c) Vessels which are designed so that they are capable of reducing wave creation resistance by reducing the area of the water line which falls under any of the following.
 1. Vessels in which full load displacement exceeds 500 tons and which are designed so that the maximum value of the speed when full when the significant wave height is 3.25 meters or more exceeds 35 knots
 2. Vessels for which full load displacement exceeds 1,500 tons and which are designed so that the maximum value of speed when full when the significant wave height is 4 meters or more exceeds 25 knots
- (iv) Components or auxiliaries for submersible vessels which fall under any of the following

- (a) Components for submersible vessels which are designed so that they are capable of being used at depths exceeding 1,000 meters which fall under any of the following
 - 1. Pressure-resistant containers or pressure-resistant shells in which maximum internal dimensions exceed 1.5 meters
 - 2. Direct current propulsion electric motors or thrusters
 - 3. Umbilical cables or connectors which use tension members made of optical fiber and synthetic materials
- (b) Among automatic control devices which are designed so that they are capable of being used in submersible vessels which use navigation data and which are servo control systems, those that fall under the following 1. and 2.
 - 1. Automatic control devices which are capable of being used for submersible vessels which fall under item (i), (b) or Article 14, item (ix)
 - 2. Automatic control devices which fall under any of the following
 - i. Automatic control devices which are capable of moving submersible vessels inside a water column having a radius of 10 meters having a preset center point in the water
 - ii. Automatic control devices which are capable of holding a submersible vessel inside a water column having a radius of 10 meters having a preset center point in the water
 - iii. Automatic control devices which are capable of holding a small submersible vessel to within 10 meters of a cable when moving along a cable which is at the bottom of the sea or beneath the sea
- (c) Among automatic control devices which are designed so that they are capable of being used in submersible vessels, which use navigation data and which are servo control systems, those that fall under 1. and 2. (excluding those falling under (b))
 - 1. Automatic control devices which are designed so that they are capable of being used in submersible vessels and which fall under item (i), (a)
 - 2. Automatic control devices that fall under any of the following
 - i. Automatic control devices which are capable of moving submersible vessels inside a water column having a radius of 10 meters having a preset center point in the water
 - ii. Automatic control devices which are capable of holding submersible vessels within a water column having a radius of 10 meters having a present center point in the water
 - iii. Automatic control devices which are capable of holding submersible vessels inside a water column within 10 meters from the cable when moving along a cable which is on the sea floor or beneath the sea
- (d) Lead-through hardware or optical fiber connectors used to draw optical

- fiber inside the hull of a ship
- (e) Observation devices for underwater use that fall under any of the following
 - 1. Underwater television devices which are designed so that they are capable of being mounted onto submersible vessels for remote control and with a resolution in air exceeding 800
 - 2. Observation devices for underwater use which are designed so that they are capable of being used in submersible vessels for remote control and having a function which reduces the effect of backscattering
 - (v) Underwater cameras or auxiliaries thereof which fall under any of the following
 - (a) Television cameras that fall under any of the following
 - 1. Television cameras with a resolution in air exceeding 1,100
 - 2. Television cameras with a built-in image reinforcing tube listed in Article 9, item (iii), (b), 1. having more than 150,000 effective pixels for its solid-state image sensors
 - (b) Cameras which are designed or manufactured so that they are capable of being used at depths exceeding 150 meters (limited to those using film with a width of 35 millimeters or more) which fall under any of the following
 - 1. Cameras which are capable of recording the depth, position and other measurement data on film
 - 2. Cameras having a function which automatically compensates for the back focal distance
 - 3. Cameras having an automatic control device which is designed so that its housing is capable of being used at depths exceeding 1,000 meters
 - (c) Cameras which are capable of recording images electronically and which are capable of recording more than 50 images
 - (d) Lighting systems which fall under any of the following
 - 1. Among lighting systems which use the strobo method, in which energy per flash exceeds 300 joules, those that are capable of emitting light in excess of five times per second
 - 2. Lighting systems which use argon arcs which are designed so that they are capable of being used at depths exceeding 1,000 meters
 - (vi) Underwater robots (excluding maneuvering robots and sequence robots) which fall under any of the following
 - (a) Underwater robots which control use of information from a sensor which measures the force or torque applied to an external object or the distance to tactual sense with the external object
 - (b) Underwater robots which use titanium alloy or fiber reinforced composite materials as structural materials and which are capable of being operated under a force of more than 250 newtons or at a torque greater than 250

newtons

- (vii) Remote control manipulators (limited to those which are articulated) which are designed so that they are capable of being mounted on submersible vessels which fall under any of the following
 - (a) Remote control manipulators which use information from a sensor which measures the force applied to an external object or the torque or the tactual sense upon the external object.
 - (b) Remote control manipulators which control the use of a master-slave system with a degree of freedom of motion of 5 or more
- (viii) Power units which are capable of being used when they are cut off from the air that fall under any of the following
 - (a) Brayton cycle engines or Rankine cycle engines having a device that falls under any of the following
 1. Equipment which is designed so that it is capable of removing carbon monoxide, carbon dioxide as well as particles from the exhaust air which is circulating
 2. Equipment designed so that it is capable of utilizing monoatomic gases
 3. Soundproofing devices or enclosures designed so that they are capable of reducing underwater noise at frequencies of less than 10 kilohertz or equipment which is designed so that it is capable of mitigating collisions
 4. Equipment designed so that it is capable of compressing reaction products or recycling them as fuel, storing the reaction products and discharging the reaction products at pressures of more than 100 kilopascals.
 - (b) Diesel engines having equipment that falls under all of the following 1. through 4.
 1. Equipment designed so that it is capable of removing carbon monoxide, carbon dioxide and fine particles from exhaust air which is circulating
 2. Equipment which is designed so that it is capable of utilizing monoatomic gases
 3. Soundproofing devices or enclosures which are designed so that they are capable of reducing underwater noise at frequencies of less than 10 kilohertz or equipment which is designed so that it is capable of mitigating collisions
 4. Equipment which is designed so that it is capable of discharging combustion products intermittently
 - (c) Fuel cells with an output exceeding 2 kilowatts and having a device that falls under any of the following
 1. Soundproofing devices or enclosures which are designed so that they are capable of reducing underwater noise at frequencies of less than 10

- kilohertz or equipment designed so that it is capable of mitigating collisions
 - 2. Equipment which is designed so that it is capable of compressing reaction products or recycling them as fuel, which are capable of storing the reaction products and discharging reaction products at pressures greater than 100 kilopascals
 - (d) Sterling cycle engines having equipment which falls under any of the following 1. and 2.
 - 1. Soundproofing devices or enclosures which are designed so that they are capable of reducing underwater noise at frequencies of less than 10 kilohertz or equipment which is designed so that it is capable of mitigating collisions
 - 2. Equipment which is designed so that it is capable of discharging reaction products at pressures greater than 100 kilopascals
- (ix) Components for surface ships which fall under item (iii), and which fall under any of the following
 - (a) Flexible skirts, seals or fingers which fall under any of the following
 - 1. Among flexible skirts, seals or fingers which are designed so that they are capable of being used in air-cushion vehicles which fall under item (iii), (a), 1. in which cushioning pressure is 3,830 pascals or more, those which are capable of being used when the significant wave height is 1.25 meters or more
 - 2. Among flexible skirts, seals or fingers which are designed so that they are capable of being used in air-cushion vehicles which fall under item (iii), (a), 2. and in which cushioning pressure is greater than 6,224 pascals, those which are designed so that they are capable of being used when the significant wave height is 3.25 meters or more
 - (b) Levitation fans which are designed so that they are capable of being used on air-cushion vehicles which fall under item (iii), (a) in which rated output exceeds 400 kilowatts
 - (c) Totally submersible hydrofoils which are designed so that they are capable of being used in hydrofoil ships which fall under item (iii), (b) which are designed to reduce capitation damage
 - (d) Automatic stabilizing control devices which utilize the shaking of the ship's hull, wave conditions and other measurement data
 - (e) Super capitation propellers, semi-submersible propellers or surface propellers, the rated output of which exceeds 7.5 megawatts
 - (f) Double reversing propeller devices, the rated output of which exceeds 15 megawatts
 - (g) Equipment having a function which rectifies the stream which faces the propeller

- (h) Decelerators the K value of which is indicated in the standards of the American Gear Industry Association and exceeds 300
- (i) Transmission shaft equipment which uses composite materials which are capable of transmitting output greater than 1 megawatt
- (x) Vessel components which fall under any of the following
 - (a) Variable pitch propellers or hubs thereof with a rated output exceeding 30 megawatts
 - (b) Internal liquid-cooling type electric propulsion engines in which output exceeds 2.5 megawatts
 - (c) Superconductive propulsion engines or electric propulsion engines using a permanent magnet having an output greater than 0.1 megawatts
 - (d) Power transmission shaft equipment using a composite material which is capable of transmitting output exceeding 2 megawatts
 - (e) Among screw propeller devices which are designed so that air from the propeller is capable of being discharged or so that air is capable of being supplied to the propeller, those with a rated output exceeding 2.5 megawatts
 - (f) Among soundproofing devices which are capable of being used on vessels in which the displacement is greater than 1,000 tons which reduces sound or vibration at frequencies of less than 500 hertz generated from diesel engines, diesel generators, gas turbine engines, gas turbine generators, propulsion electric motors, reducers, those made of a composite sound insulating base the intermediate mass weight of which exceeds 30 % of the weight of the device installed on it
 - (g) Equipment which uses a divergent nozzle or which uses technology relating to a straightening vane to upgrade the driving force of the screw propeller or to reduce underwater noise in which the output exceeds 2.5 megawatts
- (xi) A rotation current water tank designed to measure noise coming from the stream around a model propeller in a sound field, with a background noise of less than 100 decibels within a frequency range of 0 hertz or more and 500 hertz or less when the standard sound pressure is 1 micropascal and the frequency width is 1 hertz
- (xii) Buoyant materials which fall under the following (a) and (b)
 - (a) Buoyant materials designed so they are capable of being used at depths exceeding 1,000 meters
 - (b) Buoyant materials the density of which is less than 561 kilograms per cubic meter
- (xiii) Closed-circuit or semi-closed circuit self-contained diving equipment

Article 12 Goods with specifications prescribed by the Ordinance of the Ministry

of Economy, Trade and Industry in row 13 of appended table 1 of the Export Order shall fall under any of the following.

- (i) Gas turbine engines for aircraft which fall under any of the following
 - (a) Gas turbine engines for aircraft using technology (excluding programs) required for design or manufacture of items which fall under any of (a) through (j) in Article 25, paragraph (3), item (ii) or technology required for design or manufacture of items which fall under the items of Article 27, paragraph (5) (excluding those designed for use in airframes approved in Japan or by the regional government organizations listed in the appended table 2 and which are approved by the same regional government organizations)
 - (b) Gas turbine engines which are designed for use in aircraft designed so that the cruising time at speeds greater than Mach 1 exceeds 30 minutes
- (ii) Gas turbines for vessels that fall under the following (a) and (b) or components thereof
 - (a) Gas turbines for vessels, the continuous rated output of which under standard conditions determined by international standardization organizations is greater than 24,245 kilowatts
 - (b) Gas turbines for vessels, with a fuel consumption per kilowatt of 0.219 kilograms or more at ranges where the continuous rated output under international standards is 35 % or more and 100 % or less
- (iii) Among components of gas turbine engines using technology (excluding programs) required for designing or manufacturing those which fall under any of Article 25, paragraph (3), item (ii), (a) through (j) or technology required for designing or manufacturing those which fall under the items of Article 27, paragraph (5), those designed for use in gas turbine engines which fall under any of the following.
 - (a) Components which fall under item (i)
 - (b) Components for which the region where they were designed or manufactured is Japan or a region outside the regions indicated in appended table 2 or not specified
- (iv) Spacecrafts for aerospace or spacecrafts for launching thereof
- (v) Internally stored liquid rocket propulsion units which fall under the next item
- (vi) Components of liquid rocket propulsion units which fall under any of the following
 - (a) Very low temperature cooling systems, Dewar vessels, heat pipes and other very low temperature systems which are designed for use in spacecrafts for aerospace or for spacecrafts for launching thereto and with a liquid loss at very low temperatures of less than 30 % per year
 - (b) Among very low temperature containers or closed cycle cooling systems

- for use at temperatures of -173 degrees centigrade or less, those which are designed for use in spacecrafts for aerospace, spacecrafts for launch or aircraft which are capable of cruising at speeds exceeding Mach 3
- (c) Storage containers or supply systems for hydrogen slush
 - (d) Gas generators or expander cycle turbine drive units for turbine pumps or components thereof with a discharge pressure of more than 17.5 megapascals or for turbine pumps therefor
 - (e) Propulsion generators or nozzles therefor having a thrust exceeding 10.6 megapascals
 - (f) Propellant storage equipment which utilizes capillary action or flexible bladders
 - (g) Liquid fuel injection devices in which individual orifice areas are 0.114 square millimeters or less
 - (h) Among thrust chambers or exit cones which are formed integrally of a single piece using a composite material of carbon and carbon fiber, and the density of which is exceeding 1.4 grams per cubic centimeter, those the tensile strength of which is exceeding 48 megapascals
- (vii) Solid rocket propulsion units which fall under any of the following
- (a) Solid rocket propulsion units, the specific impulse of which is more than 2.4 kilonewtons second per kilogram when the outlet pressure is brought to atmospheric pressure at sea level and the effective thrust capacity is greater than 1.1 meganewtons or when the pressure inside the combustor is 7 megapascals
 - (b) Solid rocket propulsion units in which stage mass fraction exceeds 88 % and in which propellant solid ratio exceeds 86 %
 - (c) Solid rocket propulsion units internally stored which fall under the next item
 - (d) Solid rocket propulsion units used to join the insulating material and propellant which use direct bonding motor design methods to obtain a mechanical joining strength which is greater than the strength of the propellant or to make a barrier for the chemical migration between the solid propellant and the insulating material of the motor case
- (viii) Components for solid rocket propulsion units which fall under any of the following
- (a) Components which join insulating material and propellant and which use liners to obtain a mechanical bonding strength which is greater than the strength of the propellant and to make a barrier against chemical migration between the solid propellant and the insulating material for the motor case
 - (b) Motor cases which use composite materials made using the filament winding method having a diameter greater than 0.61 meters or in which

- structural efficiency ratio is greater than 25 km
- (c) Nozzles the thrust of which is greater than 45 kilonewtons or in which nozzle throat erosion ratio is less than 0.075 millimeters per second
 - (d) Movable nozzle or secondary injection propulsion direction control equipments which fall under any of the following
 1. Those in which absolute value for the deflection range in the thrust vector is exceeding 5 degrees
 2. Those in which angular velocity when changing the thrust vector is greater than 20 degrees per second
 3. Those in which angular acceleration when changing the thrust vector is greater than 40 degrees per second squared
 - (ix) Hybrid rocket propulsion units which fall under any of the following
 - (a) Those total thrust capacity of which is greater than 1.1 meganewtons second
 - (b) Those the thrust of which when the outlet is in a vacuum is greater than 220 kilonewtons
 - (x) Components for spacecrafts used for launching or propulsion equipment thereof or spacecrafts for aerospace use which fall under any of the following
 - (a) Components of spacecrafts used for launching (limited to those other than nose cones, the weight of which exceeds 10 kilograms) metal matrix composite materials which fall under Article 4, item (xii) or Article 4, item (xv), organic composite materials, ceramic matrices or intermetallic compound reinforcing materials
 - (b) Among components of propulsion equipment of spacecrafts used for launching which are designed for use in propulsion equipment that falls under any of item (v), item (vii) or the preceding item, those using metal matrix composites, organic composites, ceramic matrices or intermetallic compound reinforcing materials which fall under Article 4, item (xii) or Article 4, item (xv) (excluding those listed in item (vi) or item (viii))
 - (c) Components for spacecraft for aerospace use which are used to control dynamic response for structures or to actively control torsion
 - (d) Among liquid pulse rocket engines in which the thrust weight ratio is 1 kilonewton per kilogram or more, those the response time of which is less than 0.030 seconds
 - (x)-2 Unmanned aerial vehicles which fall under the following (a) or (b) (excluding model aircraft used for entertainment or sports)
 - (a) Unmanned aerial vehicles having autonomic aviation control capability and flight capability through use of an autopilot based on an inertial navigation device
 - (b) Unmanned aerial vehicles having a function which enables human control of flight exceeding a visible range using remote control based on a

- television monitor.
- (xi) Equipment or tools (including molds) used to manufacture blades, vanes or dip shrouds by gas turbine casting which fall under any of the following
 - (a) Equipment for unidirectional solidification or for casting of single crystals
 - (b) Ceramic cores or shells
 - (xii) Equipment for design of gas turbines or gas turbine components which use technology required for manufacture of items which fall under any of Article 25, paragraph (3), item (ii), (a) through (j) (excluding programs), or use technology required for design and manufacture of items which fall under the items of Article 27, paragraph (5) and real time controlling devices, measuring instruments (including sensors) or devices which collect and analyze data automatically
 - (xiii) Devices for manufacturing brush seals for gas turbine engines or test equipment or components thereof whose peripheral speed when tipped exceeds 335 meters per second and are designed so that they are capable of being operated at temperatures exceeding 500 degrees centigrade
 - (xiv) Tools used for solid phase joining of wing and disk parts of gas turbine engines made of intermetallic compounds, super alloys or titanium
 - (xv) Devices for real-time control, measuring instruments (including sensors) or devices which collect and analyze data automatically which are designed for use in wind tunnels or devices which fall under any of the following
 - (a) Wind tunnels which are capable of creating conditions for velocities of Mach 1.2 or more
 - (b) Equipment which is capable of simulating flow environments exceeding Mach 5
 - (c) Wind tunnels or equipment which are capable of simulating the flow for a Reynolds number exceeding 25,000,000. However, this does not include test models which are restricted to two-dimensional sections
 - (xvi) Acoustic vibration test equipment which falls under all of the following (a) through (c)
 - (a) Acoustic vibration test machines the sound pressure of which when the standard sound pressure is 20 micropascals is greater than 160 decibels
 - (b) Acoustic vibration test machines, the rated output of which is greater than 4 kilowatts
 - (c) Acoustic vibration test machines in which the laboratory temperature exceeds 1,000 degrees centigrade
 - (xvii) Equipment used to test rocket motors using non-destructive examination technology
 - (xviii) Converters which are designed so that they are capable of directly measuring the wall friction of a flow in which temperatures at stagnation point are greater than 560 degrees centigrade

- (xix) Among components which are used for the rotating parts of gas turbine engines, and manufactured using powder metallurgy, tools which are used to manufacture components which are capable of being used at temperatures of 600 degrees centigrade or more when stress is applied which have a limit tensile strength of more than 60 %

Article 13 (1) Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry with row 14 (i) of appended table 1 of the Export Order shall fall under any of the following.

- (i) Aluminum powder, the particles of which are globular with a diameter of 60 micrometers or less and with an aluminum purity of 99 % or more
- (ii) Iron powder with a particle diameter of 3 micrometers or less (limited to those manufactured using a method which reduces iron oxide using hydrogen) and with an iron purity of 99 % or more

(2) Goods specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 14 (ii) of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Substances having low explosives or high explosives as their major components which fall under any of the following
 - (a) Anidine triamine nitrate
 - (b) Titanium subhydride with a chemically correct mixture ratio of 0.65 or more and 1.68 or less
 - (c) Dinitroglycolyl
 - (d) 3-nitro-1,2,4-triazole-5-one
 - (e) Hydrazine nitrate
 - (f) Hydrazine perchlorate
 - (g) Ammonium Nitrate
 - (h) Ammonium Perchlorate
 - (i) 2-(5-cyanotetrazolate) pentamine cobalt (111) perchlorate
 - (j) Cis-bis (5-nitrotetrazolate) tetra amino cobalt(III) perchlorate
 - (k) Amino dinitrobenzofuroxan
 - (l) Diamino dinitrobenzofuroxane
- (ii) Substances which are additives or precursors to low explosives or high explosives which fall under any of the following
 - (a) Azide methyl methyl oxetane or polymers thereof
 - (b) Basic copper salicylate
 - (c) Lead salicylate
 - (d) Bis (2,2-dinitropropyl) formal
 - (e) Bis (2,2-dinitropropyl) acetal
 - (f) Bis (2,fluoro-2,2-dinitroethyl) formal
 - (g) Bis (2-hydroxyethyl) glycol amide

- (h) Bis (2-methyl aziridinyl) methyl amino phosphine oxide
- (i) Bis azide methyl oxetane or polymers thereof
- (j) Bis chloromethyl oxetane
- (k) Butadiene nitrile oxide
- (l) 1,2,3-butanetriol trinitrate
- (m) Dinitro azetidine tertiary butyl salt
- (n) High energy monomers having a nitro group, azide group, nitrate group, nitraza group or a difluoro amino group
- (o) Poly-2,2,3,3,4,4-hexafluoro pentane-1,5-diol formal
- (p) Poly-2,4,4,5,5,6,6-heptafluoro-2-trifluoro methyl-3-oxaheptane-1,7-diol formal
- (q) Derivatives of polymers of glycidyl azide
- (r) Hexabenzylhexaazaisowurtzitane
- (s) Ultra fine powdered ferric oxide in which the surface area exceeds 250 square meters per gram and in which average particle diameter is 0.003 micrometers or less
- (t) Beta lead resorcinatate resorcinol acid
- (u) Lead stannate
- (v) Lead maleate
- (w) Lead citrate
- (x) Chelate of beta lead resorcinatate or lead-copper lead salicylate
- (y) Polymers of nitrate methyl methyl oxetane or 3-nitrate methyl-3-methyl oxetane
- (z) 3-nitraza-1,5-pentane diisocyanate
- (aa) Coupling agents for organic metal which are additive for propellant
- (bb) Polycyano difluoroamino ethylene oxide
- (cc) Polymers of polyglycidyl nitrate or nitrate methyl oxylane
- (dd) Polynitro ortho carbonate
- (ee) Propylene imine
- (ff) Tetraacetyl benzyl hexaazoisoultrane
- (gg) Cyanoethylated polyamine (excluding those listed in Article 3, item (vii), (s)) or cyanoethylated polyamine salts
- (hh) Cyanoethylated poly amine with added glycydol (excluding those listed in Article 3, item (vii), (r))
- (ii) Derivatives of tris-1-(2-methyl) aziridinyl phosphine oxide
- (jj) Additives of 1,2,3-tris (1,2-bis (difluoro amine) ethoxy) propane or tris binoxypropane
- (kk) 1,3,5-trichlorobenzene
- (ll) 1,2,4-butane triol
- (mm) 1,3,5,7-tetraacetyl-1,3,5,7-tetraazocyclooctane
- (nn) 1,4,5,8-tetraazadecaline

- (oo) Polyepichlorohydrin, polyepichlorohydrin diol or polyepichlorohydrin triol having a low-molecular weight (molecular weight of 10,000 or less) and alcohol functional groups
- (3) Goods with specifications prescribed by the Ordinance of the Ministry, Trade and Industry in row 14 (iii) of the appended table 1 of the Export Order which are diesel engines with an output of 37.3 kilowatts or more in which parts were made of non-magnetic materials weighting more than 75 % of the total weight, or components thereof.
- (4) Deleted
- (5) Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 14 (v) of the appended table 1 of the Export Order shall fall under any of the following.
- (i) Closed-circuit type self-contained diving equipment or components thereof
 - (ii) Semi-closed circuit type self-contained diving equipment or components thereof
 - (iii) Components for self-contained diving equipment, those designed for use in converting open circuit type self-contained diving equipment to closed circuit self-contained diving equipment or semi-closed circuit self-contained diving equipment
- (6) Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 14 (vii) of appended table 1 of the Export Order shall be robots (excluding maneuvering robots and sequence robots; hereinafter the same shall apply in this paragraph) or controller or end effectors used for robots, and those which fall under the following or components thereof (excluding end effectors for robots).
- (i) Robots which are designed so that they are capable of using pressure oil in which ignition point is exceeding 566 degrees centigrade
 - (ii) Those which are designed to prevent the effect of electromagnetic pulses
- (7) Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 14 (viii) of appended table 1 of the Export Order shall be electric braking shutters that have a shutter speed of less than 100 microseconds and utilize photochromic action or electro-optical effect (excluding those designed for cameras).
- (8) Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 14 (ix) of appended table 1 of the Export Order shall fall under any of the following.
- (i) Bromobenzyl cyanide
 - (ii) Chlorobenzal malononitrile
 - (iii) Chloroacetophenone
 - (iv) Dibenzo (b,f)-1,4-oxazabine
 - (v) Diphenyl chloroarsine

- (vi) Diphenyl amine chloroarsine
- (vii) Diphenyl cyanoarsine
- (viii) Equipment for application, protection, location or identification of substances which fall under any of the preceding items, or components thereof

Article 14 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 15 of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Molded goods (including semi-manufactured goods) using fibers that fall under Article 4, item (xv), (c) or (d) and whose matrix is a organic matter
- (ii) Radio wave absorbers or conductive polymers that fall under any of the following:
 - (a) Absorbers designed to be used as radio wave absorbers and that have a frequency exceeding 200 megahertz and less than 3 terahertz. However, this shall exclude those falling under any of the following, into and not mixed into coating materials
 1. Non-magnetic fibrous absorbers
 2. Absorbers (excluding those which are plate shaped) that do not absorb radio waves through magnetic loss
 3. Plate shaped absorbers that fall under all of the following i. through iii.
 - i. Absorbers made of any of the following
 - a. Absorbers that use plastic foams containing carbon or organic matter and fall under 1 or 2
 - 1 Absorbers having radio wave reflectivity, measured for frequencies other than the frequency range of plus/minus 15% centered on the radio wave frequency for which absorption is a maximum, of 5% or more of the electric wave reflectivity of a metal plate.
 - 2 Absorbent that can not be used under exceeding 177 degrees centigrade
 - b. Absorbers that use ceramics and fall under the following 1 and 2
 - 1 Absorbers having radio wave reflectivity, measured for frequencies other than the frequency range of plus/minus 15% centered on the radio wave frequency for which absorption is a maximum, of 20% or more of the electric wave reflectivity of a metal plate.
 - 2 Absorbers that can not be used at temperatures exceeding 527 degrees centigrade
 - ii. Absorbers with a tensile strength less than 7 meganewtons per square meter
 - iii. Absorbers with a compression strength less than 14 meganewtons per square meter
- 4. Absorbers made of sintered ferrites that fall under the following i. and ii.

- i. Absorbers with the specific gravity exceeding 4.4
 - ii. Absorbers that can not be used under temperatures exceeding 275 degrees centigrade
- (b) Among optically non-transparent absorbers designed for the use as radio wave absorbers with the frequency exceeding 150 terahertz and less than 370 terahertz, those that do not transmit visible light
- (c) Among absorbers that are conductive polymers with volume conductivity exceeding 10 kilosiemens per meter or surface electrical resistivity less than 100 ohms, those comprising any of the following polymers
 - 1. Polyaniline
 - 2. Polypyrole
 - 3. Polythiophene
 - 4. Polyphenylene vinylene
 - 5. Polyethylene vinylene
- (iii) Pre-separated neptunium 237 with a weight exceeding 1 gram
- (iv) Deleted
- (v) Digitally controlled radio receivers with exceeding 1,000 channels (excluding those designed for the use in public cellular wireless communication) or components or accessories thereof that fall under all of the following (a) through (c)
 - (a) Receivers capable of automatically scanning the electromagnetic spectrum
 - (b) Receivers capable of specifying the type of signals received and waves transmitted
 - (c) Receivers in which the time required for frequency switching is less than 1 millisecond
- (vi) Among underwater acoustic equipment utilizing acoustic waves (including ultrasound) or components thereof and that fall under any of the following
 - (a) Hydrophones that fall under any of the following
 - 1. Hydrophones that incorporate flexible sensors
 - 2. Hydrophones that incorporate devices consisting of flexible sensors less than 20 millimeters in diameter or length connected at intervals less than 20 millimeters
 - 3. Hydrophones that have any of the following detecting elements
 - i. Optical fibers
 - ii. Piezoelectric polymer membrane (excluding vinylidene fluoride resin and copolymers thereof)
 - iii. Flexible piezoelectric composite materials
 - 4. Hydrophones designed for the use at water depths exceeding 1,000 meters
 - 5. Hydrophones that have the function of compensating for the effects of

acceleration and designed for the use at water depths exceeding 35 meters

- (b) Towed hydrophone arrays that fall under any of the following
 - 1. Arrays in which the hydrophone group interval (referring to the distance between the centers of two adjacent hydrophone groups; hereinafter the same shall apply in this item) is less than 12.5 meters or those wherein the interval can be altered to less than 12.5 meters
 - 2. Arrays designed to be capable of use at water depths exceeding 35 meters or that can be so modified
 - 3. Arrays having a heading sensor that falls under Article 9, item (i), (b), 3.
 - 4. Arrays having array hoses reinforced in the long axis direction
 - 5. Arrays with diameter less than 40 millimeters
 - 6. Arrays capable of processing by multiplexing the hydrophone group signals and designed to be capable of use at water depths exceeding 35 meters or those having a depth sounding device that can be adjusted or removed to make the array capable of use at water depth exceeding 35 meters
 - 7. Arrays that have hydrophones that fall under (a) or Article 9, item (i), (b), 1.
- (c) Among signal processors designed for towed hydrophone arrays and capable of being reprogrammed by the user, those which are capable of real-time processing of process or correlation of the time domain or the frequency domain (including spectral analysis, digital filtering or beam formation)
- (d) Ocean bottom or harbor/bay cable systems that fall under any of the following
 - 1. Cable systems that incorporate hydrophones that fall under (a) or Article 9, item (i), (b), 1.
 - 2. Cable systems that can process by multiplexing hydrophone group signals and that fall under the following i. and ii.
 - i. Cable systems designed to be capable of use at water depths exceeding 35 meters or those having a depth sounding device that can be adjusted or removed to be used at water depths exceeding 35 meters to make the array capable of use at water depth exceeding 35 meters
 - ii. Cable systems that can be converted into a towed hydrophone array
- (e) Among signal processors reprogrammable by the user and designed for the use in ocean bottom or a harbor/ bay cable system, which are capable of real-time processing of process or correlation of the time domain or the frequency domain (include spectrum analysis, digital filtering or beam formation)
- (f) Among underwater acoustic equipment having transmission functions and

- an operating frequency range of 30 hertz or more and 2 kilohertz or less, those with the sound pressure levels exceeding 210 decibels
- (vii) Solid optical detectors designed for space applications (excluding those that use germanium or silicon) with the maximum sensitivity within the range exceeding 1,200 nano meters to 30,000 nano meters or less
 - (viii) Radars that fall under any of the following or components thereof
 - (a) Radars that utilize data processing technology that can identify a target automatically, from the characteristics of the target waveforms or images (excluding secondary monitor radars, automobile radars designed for collision prevention, and display equipment for air traffic control in which image resolution is 12 pixels or less per 1 meter or weather radar)
 - (b) Pulse radar cross-section area measuring devices with pulse duration transmitted of 100 nanoseconds or less
 - (ix) Untethered submersible vessels that fall under any of the following
 - (a) Manned submersible vessels that fall under any of the following
 - 1. Submersible vessels designed to be capable of independent submerged travel submerged and that possess a load lifting capability of the following i. and ii.
 - i. 10% or more of the weight-in-air of the said submersible vessel
 - ii. 15 kilonewtons or more
 - 2. Submersible vessels designed for the use at water depths exceeding 1,000 meters
 - 3. Submersible vessels that fall under all of following i. through iv
 - i. Submersible vessels designed for 4 or more passengers
 - ii. Submersible vessels designed to be capable of independent submerged travel for 10 hours or more
 - iii. Submersible vessels capable of traveling submerged for a distance of 50 nautical miles or more
 - iv. Submersible vessels with a length of 21 meters or less
 - (b) Unmanned submersible vessels that fall under any of the following
 - 1. Unmanned submersible vessels designed to automatically determine their own course over all types of seafloor terrain
 - 2. Unmanned submersible vessels capable of transmitting and receiving data or command by acoustic waves
 - 3. Unmanned submersible vessels capable of transmitting and receiving data or commands by optical fiber exceeding 1,000 meters in length
 - (x) Sound proofing devices or magnetic bearings capable of being used for vessels with whose displacement 1,000 tons or more, and that fall under the following (a) and (b)
 - (a) Sound proofing devices or magnetic bearings designed for the use in transmission gears

- (b) Sound proofing devices or magnetic bearings that have electronic controllers that actively provide soundproofing by directly generating counter vibrations against the source of the vibration
- (xi) Ramjet engines, scramjet engines, combined cycle engines, or components thereof

Article 14-2 Goods with specifications prescribed by the Ordinance of the Ministry of Economy, Trade and Industry in row 16 (i) of the appended table 1 of the Export Order shall fall under any of the following.

- (i) Nickel alloys or titanium alloys that fall under the following (a) and (b)
 - (a) Alloys especially designed to be used at a temperature exceeding 300 degrees centigrade
 - (b) Alloys shaped as any of blocks, bars, characteristic shapes, plates or tubes
- (ii) Liquids that can be used as hydraulic oil, which contain ester composed of phosphoric acid and cresol, phosphoric acid, Tris (dimethylphenyl) or Tri-nbutyl phosphate
- (iii) Fibers falling under any of the following
 - (a) Organic fibers (excluding natural fibers and polyethylene fibers)
 - (b) Carbon fibers
 - (c) Inorganic fibers
- (iv) Roller bearings especially designed to be used at a temperature exceeding 300 degrees centigrade, or components thereof
- (v) Machine tools and other devices that fall under any of the following, or components thereof
 - (a) Machine tools (limited to those capable of processing metals, ceramics and composite materials) to which an electronic controller can be attached and which fall under any of the following
 1. Tools in which the precision of positioning of the rectilinear axes is less than 0.01 millimeters when measured by the measurement method specified by International Standard ISO 230-2:1988
 2. Tools having 1 axis capable of controlling contour
 - (b) Tools and devices especially designed to perform mirror finish (excluding those capable of numerical control)
 - (c) Measurement equipment (including machine tools with a measurement function), with 3 or more measurement axes
- (vi) Secondary cells especially designed to perform charge and discharge by moving lithium-ion between the positive electrode and the negative electrode
- (vii) Digital waveform digitizers
- (viii) Electronic packaging robots
- (ix) Digital computers of which Adjusted Peak Performance exceeds 0.5 Weighted TeraFLOPS, or components thereof

- (x) Telecommunication transmission equipment falling under any of the following, or components thereof
 - (a) Wireless transmitters
 - (b) Wireless receivers
- (xi) Phased array antennas
- (xii) Communication jamming equipment especially designed to interfere with or inhibit wireless communication systems and block, reduce or induce communications, or components thereof
- (xiii) Equipment capable of detecting the position of objects by observing interferences of radio waves or other electromagnetic waves, without transmitting radio waves or other electromagnetic waves
- (xiv) Optical detectors, or coolers or components thereof, or equipment which uses optical detectors
- (xv) Optical fibers for use in sensors
- (xvi) Laser oscillators or components thereof
- (xvii) Magnetometers, underwater electric field sensors or magnetic field gradiometers, or components thereof
- (xviii) Gravimeters
- (xix) Radars or components thereof
- (xx) Accelerometers or components thereof
- (xxi) Gyroscopes or components thereof
- (xxii) Inertial navigation systems and other systems utilizing inertia force, or components thereof
- (xxiii) Gyro-astro compasses, devices that derive position or orientation by means of automatically tracking celestial bodies or satellites., equipment for receiving radio waves from satellite navigational systems or components thereof, or aircraft altimeters
- (xxiv) Underwater cameras or auxiliaries thereof, which fall under any of the following
 - (a) Underwater television cameras
 - (b) Underwater television devices which are designed so that they are capable of being mounted onto surface ships or submersible vessels for remote control
 - (c) Cameras or lighting systems especially designed or modified for use under water
- (xxv) Power units which are capable of being used when they are cut off from the air, which fall under any of the following
 - (a) Brayton cycle engines
 - (b) Diesel engines
 - (c) Fuel cells
 - (d) Sterling cycle engines

- (xxvi) Open circuit type self-contained diving equipment or components thereof
- (xxvii) Gas turbine engines or components thereof
- (xxviii) Rocket propulsion units (excluding those using toy fireworks prescribed in Article 1-5, item (i) of the Ordinance for Enforcement of the Explosives Control Act (Ordinance of the Ministry of International Trade and Industry No. 88 of 1950)) or components thereof
- (xxix) Equipment for the manufacture of the goods listed in any of the preceding two items, which falls under any of the following, or components thereof
 - (a) Vacuum induction furnaces or induction furnaces utilizing non-volatile gases
 - (b) Welding equipment using electron beams
- (xxx) Aircrafts or components thereof
- (xxxii) Vibration test equipment, wind tunnels, environmental test equipment or components thereof that can be used for the development or testing of rockets or aircrafts
- (xxxiii) Flash X-ray generators (excluding those for medical use)

(Foreign Exchange Order, pertaining to the Appended Table)

Article 15 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 2 (i) of the appended table of the Foreign Exchange Order (hereinafter referred to as "Foreign Exchange Order") shall fall under any of the following.

- (i) The technology pertaining to the design, manufacture or use of goods that fall under any of Article 1, item (i) through item (v), item (vi) (limited to the devices of mold processing of nuclear fuels), item (vii), item (viii), (a), item (x), (a), item (x)-2, or item (x)-3
- (ii) Among programs designed for the use of goods that fall under any of Article 1, item (xi), item (xvii), item (xviii), (b) or (c), item (xix), item (xx), item (xxi), (a) or (b), 1. or 3. or item (xxxv) or item (xxxvi), or technologies (excluding programs) pertaining to the design, manufacture, or use of such programs, those necessary to attain or exceed the functions or characteristics of the goods
- (iii) Among programs designed for the design, manufacture or use of goods that fall under Article 1, item (xiv), or technologies (excluding programs) pertaining to the design, manufacture, or use of those programs, the technology necessary to attain or exceed the functions or characteristic of those goods
- (iv) Among technologies (excluding programs) pertaining to the design, manufacture, or use of goods that fall under any of Article 1, item (viii), (b), item (ix), item (x), (b), item (xi), item (xiv), from item (xvii) through item

(xxiv), from item (xxvi) through (xxviii), from item (xxx) through item (l), item (lii), from item (liv) through item (lviii), or item (lx), the technology necessary to attain or exceed the functions or characteristics of those goods

(v) The technology (excluding programs) pertaining to the design, manufacture or use of goods that fall under any of Article 1, item (vi) (limited to the device for separation lithium isotopes), item (xxv), item (xxix), item (liii) or item (lix)

(2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 2 (ii) of the appended table of the Foreign Exchange Order shall be, among those pertaining to programs that enable a device to function as numerically-controlled coordinate measuring equipment with 5 or more axes capable of contour control or the technology (excluding programs) for design, manufacture or use of those programs, technology necessary for enabling the numerical-control of 5 or more axes capable of contour control.

Article 15-2 The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 3 (ii) of the appended table of the Foreign Exchange Order shall be, among those pertaining to the design, manufacture, or use of goods that fall under Article 2, item (ii), technology necessary to attain or exceed the functions or characteristics of the goods.

Article 15-3 The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 3-2 (ii) of the appended table of the Foreign Exchange Order shall be, among those pertaining to the design or manufacture of goods that fall under Article 2-2, paragraph (2), technology necessary to attain or exceed the functions or characteristics of the goods.

Article 16 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 4 (i) of the appended table of the Foreign Exchange Order shall be, among those pertaining to the design, manufacture, or use of goods that fall under Article 3, technology that falls under any of the following and is necessary to attain or exceed the functions or characteristics of the said goods.

- (i) Programs designed for the use of rockets capable of transporting a payload of 500 kilograms or more over a distance of 300 kilometers or more or equipment or tools (including molds; hereinafter the same shall apply in this Article) for manufacturing goods that fall under Article 3, item (ii), (b) or test equipment therefor, or the components thereof, or goods that fall under any of (a), 2. or (b), 4. through 6. of the same item, or technology (excluding programs) pertaining to the use, manufacturing or design of those programs.
- (ii) Programs designed for the use of rockets capable of carrying a payload of

- 500 kilograms or more a distance of 300 kilometers or more, and which can adjust the functions of two or more goods (limited to those that fall under Article 3, item (ii), (a), or (b)) or the technology (excluding programs) pertaining to the design, manufacture or use thereof
- (iii) Programs designed for the design, manufacture or use of equipment or tools for manufacturing the goods that fall under Article 3, item (ii), (a), the test equipment therefor or the components thereof, or technology (excluding programs) pertaining to the design, manufacture or use of those programs
 - (iv) The technology (excluding programs) pertaining to the design, manufacture or use of rockets capable of carrying a payload of 500 kilograms or more for over 300 kilometers, or manufacturing devices or tools, test equipment, or components therefor or goods that fall under Article 3, item (ii)
 - (v) Programs designed for the use of equipment for manufacturing goods that fall under any of Article 3, item (iii), (b) through (i) or tools or test equipment therefor or components thereof or goods that fall under any of (a), (b), (g) or (h) of the same item, or item (iv) through item (vi), item (xi), item (xvii) through item (xix), item (xxi), (a), item (xxii) or item (xxv) or technology (excluding programs) pertaining to the design, manufacture or use of those programs
 - (vi) The technology (excluding programs) pertaining to the design, manufacture or use of rockets or unmanned aircraft that are capable of carrying a payload over a distance of 300 kilometers or more (excluding those capable of carrying a payload of 500 kilograms or more) or the goods that fall under any of Article 3, item (iii) through item (xxvii)
 - (vii) The technology (excluding programs) pertaining to programs designed for the design of the goods that fall under Article 3, item (iii), (b), (c), (e) or (f), or item (iv), or the design, manufacture, or use of those programs
 - (viii) Programs designed for the use of goods that fall under any of Article 3, item (viii) through item (x)-2
 - (ix) Programs designed for the design, manufacture, or use of goods that fall under any of Article 3, item (xiii) through item (xv) or item (xxvi) or technology (excluding programs) pertaining to the design, manufacture, or use of those programs
 - (x) Programs designed for the design or manufacture of goods that fall under Article 3, item (xvii), (a) or (f) or item (xvii)-2 or technology (excluding programs) pertaining to the design, manufacture, or use of those programs
 - (xi) Programs designed for the design of rockets capable of carrying a payload of 500 kilograms or more over a distance of 300 kilometers or more, or goods that fall under Article 3, item (ii), (a) (limited to those capable of being used for rockets capable of transporting a payload of 500 kilograms or more) or goods that fall under (b) of the same item, or technology (excluding

- programs) for the design, manufacture, or use of those programs
- (xii) Programs that are designed for the use of rockets capable of carrying a payload over a distance of 300 kilometers and are capable of adjusting the functions of 2 or more goods (limited to those that fall under Article 3, item (ii), (a)) (excluding those that fall under item (ii))
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 4 (ii) of the appended table of the Foreign Exchange Order, shall be technology (excluding programs) pertaining to the design of rocket avionics equipment or components thereof and used for preventing the impact of electromagnetic pulses or electromagnetic interference.
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 4 (iii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) The technology (excluding programs) that integrates data pertaining to flight control, guidance or propulsion into the flight control device, in order to optimize the flight path of rockets capable of carrying a payload of 500 kilograms or more over a distance of 300 kilometers or more
- (ii) Programs that enable the determination of the position of an airframe over its entire route during flight by processing the data recorded during flight (limited to programs that can be used for rockets or unmanned aerial vehicles that are capable of carrying a payload for over 300 kilometers) or technology (excluding programs) pertaining to the design, manufacture, or use of those programs
- (4) The technology specified by the Ordinance of Ministry of Economy, Trade and Industry in row 4 (iv) of the appended table of the Foreign Exchange Order shall be technology pertaining to the use of autoclaves, and the data or procedures to provide for the environment inside the autoclaves (limited to those that use goods that fall under Article 3, item (xvi)).
- (5) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 4 (v) of the appended table of the Foreign Exchange Order shall be technology used to fix onto substrates substances formed by thermal decomposition of raw gas (limited to execution within the temperature range from 1,300 degrees centigrade to 2,900 degrees centigrade inclusive and the range of absolute pressure from 130 pascals to 20,000 pascals inclusive).

Article 17 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) Programs designed for the design or manufacture of items that fall under any of Article 4, item (iv) through item (vi)
- (ii) The technology (excluding programs) necessary for the design or

- manufacture of items that fall under Article 4, item (ii), item (xii), (c), 1. or (d) or item (xv), (c) or (d)
- (iii) The technology (excluding programs) necessary for the design or manufacture of items that fall under any of Article 4, item (i), (b) or (c) or item (iii) through item (xvi) (excluding those falling under the preceding item)
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (ii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Programs designed to use an item that falls under any of Article 4, item (iv) through item (vi)
- (ii) The technology (excluding programs) pertaining to the use of an item that falls under Article 4, item (ii) or item (xii), (c), 1. or (d) or Article 14, item (i) (limited to those pertaining to repairs)
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (iii) of the appended of the Foreign Exchange Order table shall be technology (excluding programs) pertaining to the design or manufacture of ceramic materials or ceramics (excluding composites) that fall under any of the following.
- (i) Ceramic materials that fall under all of the following (a) through (c)
- (a) Ceramic materials consisting of any of the following
1. Single or composite oxides of zirconium and silicon or aluminum composite oxides
 2. Single nitrides of boron (limited to cubic crystalline boron)
 3. Single or composite carbides of silicon or boron
 4. Single or composite nitrides of silicon
- (b) Items in which the ratio of the content of metal impurities as a part of the total weight is less than following numeric values
1. 0.1% with respect to single oxides or single carbides
 2. 0.5% with respect to composite compounds or single nitrides
- (c) Ceramic materials that fall under any of the following
1. Among zirconium oxides, having particles the diameter of which is 1 micrometer or less, and wherein the total weight of particles exceeding 5 micrometers in diameter is 10% or less of total weight
 2. Those having particles the average diameter of which is 5 micrometers or less and wherein the total particle weight of particles exceeding 10 micrometers in diameter is 10% or less of total weight (excluding those that fall under 1.)
 3. Platelets having ratio of length to thickness exceeding 5 and ratio of length to diameter exceeding 10, and having whiskers the diameter of which is less than 2 micrometers and fibers the diameter of which is

less than 10 micrometers

- (ii) Ceramic made of substances in the preceding item (excluding grinding materials)
- (4) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (iv) of the appended table of the Foreign Exchange Order shall be technology (excluding programs) pertaining to the design or manufacture of polybenzothiazole or polybenzoxazole.
- (5) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (v) of the appended table of the Foreign Exchange Order shall be technology (excluding programs) pertaining to the design or manufacture of rubber-like fluorine compounds including vinyl ether monomers.
- (6) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (vi) of the appended table of the Foreign Exchange Order shall be technology (excluding programs) pertaining to the manufacture of aromatic polyamide fiber.
- (7) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (vii) of the appended table of the Foreign Exchange Order shall be program for the design of composite materials using organic matter, metals or carbon as a matrix.
- (8) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 5 (viii) of the appended table of the Foreign Exchange Order shall be technology (excluding programs) pertaining to the use of radio wave absorbers or conductive polymers that fall under Article 14, item (ii) (limited to those pertaining to installation, maintenance or repair).

Article 18 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 6 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or manufacture of items that fall under Article 5, item (ii), (b), 3. or (d), item (iii), item (v) or any of the following
 - (a) Among machine tools with 2 or more axes capable of controlling contours, those capable of lathe turning, and in which the precision of positioning of the rectilinear axes is 0.0036 millimeters or less when measured by the measurement method specified by International Standard ISO 230-2:1997
 - (b) Machine tools capable of milling or boring that fall under any of the following
 - 1. Machine tools with 3 rectilinear axes capable of controlling contour, and with 1 axis capable of controlling contour, and in which the precision of positioning of the rectilinear axes is 0.0036 millimeters or less when measured by the measurement method specified by International

Standard ISO 230-2:1997

2. Machine tools with 5 or more axes capable of controlling contour, and in which the precision of positioning of the rectilinear axes is 0.0036 millimeters or less when measured by the measurement method specified by International Standard ISO 230-2:1997
 - (ii) In addition to what is listed in the preceding item, the technology (excluding programs) necessary for the design or manufacture of the goods that fall under Article 5
 - (iii) Programs designed for the design or manufacture of items that fall under item (i), (a) or (b), Article 5, item (ii), (b), 3. or (d), item (iii) or item (v), or the technology (excluding programs) necessary for the design of those programs
 - (iv) In addition to what is listed in the preceding item, programs designed for the design or manufacture of goods that fall under Article 5, or the technology (excluding programs) necessary for the design of those programs
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 6 (ii) of the appended table of the Foreign Exchange Order shall be programs designed for the use of items that fall under Article 5 or the technology (excluding programs) necessary for the design of those programs.
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 6 (iii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
 - (i) Programs that enable a device to function as numerically-controlled coordinate measuring equipment with 5 or more axes capable of controlling contour or the technology (excluding programs) necessary for the design of those programs
 - (ii) The technology (excluding programs) pertaining to the design of interactive computer graphics to prepare or modify the part programs in numerically-controlled coordinate measuring equipment
 - (iii) The technology (excluding programs) pertaining to the design of the programs that convert design data given to numerically-controlled coordinate measuring equipment into commands for machine tools
 - (iv) The technology (excluding programs) pertaining to the design of programs that integrate into the numerically-controlled coordinate measuring equipment an expert system that supports decision-making
 - (v) The technology (excluding programs) pertaining to the coating method listed in the second column of the appended table 3 and the coatings listed in the fourth column of the same table and executed in respect to substrates listed in the third column in the same table
- (4) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 6 (iv) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) pertaining to the design of tools (including molds) for processing metals by super-plastic molding, diffusion bonding or direct pressure hydraulic press
- (ii) Data for processing metals that fall under any of the following
 - (a) Data pertaining to processing by super-plastic molding of aluminum alloys, titanium alloys or super alloys, and to the surface treatment, deformation rate, temperature or pressure of processed materials
 - (b) Data pertaining to processing by diffusion bonding of super alloys or titanium alloys, and to the surface treatment, deformation rate, temperature or pressure of processed materials
 - (c) Data pertaining to processing of aluminum alloys or titanium alloys by direct pressure hydraulic press and to the pressure or cycle times thereof
 - (d) Data pertaining to reduction of the porosity inside cast product of titanium alloy, aluminum alloy or super alloy by applying the same pressure from all directions at a temperature exceeding 102 degrees centigrade and pertaining to the temperature, pressure or cycle time thereof
- (5) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 6 (v) of the appended table shall be technology (excluding programs) pertaining to the design or manufacture of hydraulic stretch molding devices (including the mold thereof) for manufacture of aircraft materials.
- (6) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 6 (vi) of the appended table of the Foreign Exchange Order shall be technology (excluding programs) pertaining to auxiliaries for numerically-controlled coordinate measuring equipment that converts the design data given to the numerically-controlled equipment into the commands for the machine tools.

Article 19 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 7 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or manufacture of items that fall under Article 6, item (xvi) or item (xvii), (a), 2
- (ii) The technology (excluding programs) necessary for the design or manufacture of items that fall under Article 6 (excluding those falling under item (xvi) or item (xvii), (a), 2. of the same Article), and do not fall under any of the following
 - (a) The technology necessary for manufacturing items that fall under item (xvi)-2 of the same Article
 - (b) Among technologies that fall under any of item (i), (c) through (k) of the

same Article, the technology necessary for the design or manufacture of integrated circuits that fall under the following 1. and 2.

1. Integrated circuits whose minimum line width which is 0.5 micrometers or more
 2. Integrated circuits that do not possess multilayered structure (excluding those in which both the number of polycrystalline silicon layers and the number of metal layers are three or less)
- (iii) Programs designed for the design or manufacture of circuits that fall under Article 6, item (xvi) or item (xvii), (a), 2.
- (iv) Programs designed for the design of integrated circuits that fall under Article 6, item (xvi)-2
- (v) Programs designed for the design or manufacture of integrated circuits that fall under Article 6 (excluding those that fall under any of the preceding two items or item (i) or item (xvii) through item (xxi) of the same Article)
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 7 (ii) of the appended table of the Foreign Exchange Order shall be programs designed for the use of items that fall under any of Article 6, item (xvii), (a) through (f) or (h).
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 7 (iii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Physical simulation programs for establishing the conditions of the lithography process, etching process or film forming process to transfer mask patterns to conductors, insulators or semiconductors
 - (ii) The technology (excluding programs) pertaining to the design or manufacture of substrates of integrated circuits whose insulators are made of silicon dioxide and that have silicon-on-insulator structure.
 - (iii) The technology (excluding programs) necessary for the design or manufacture of, among microprocessors, microcomputers, or microcontrollers, wherein the bit count of the access width of logic-operations is 32 or more, those having a composite theoretical performance of 530 Mtops per second or more (depending on the types listed in the middle column in the appended table 1, the performance of each shall be listed in the right column of the same table). However, among integrated circuits that fall under any of Article 6, item (i), (c) through (k), the technology necessary for the design or manufacture of those that fall under the following (a) and (b) shall be excluded.
 - (a) Microprocessors, microcomputers, or microcontrollers with whose minimum line width 0.5 micrometers or more
 - (b) Microprocessors, microcomputers, or microcontrollers that do not possess multilayered structures (excluding those in which both the number of

- polycrystalline silicon layers and the number of metal layers are 3 or less)
- (4) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 7 (iv) of the appended table of the Foreign Exchange Order shall be technology (excluding programs) pertaining to the design or manufacture of electronic elements using superconductive materials.
- (5) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 7 (v) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Physical simulation programs for establishing the conditions of the lithography processes, etching process or film forming process to transfer mask patterns to conductors, insulators and semiconductors
 - (ii) The technology (excluding programs) pertaining to the design or manufacture of vacuum microelectronics devices
 - (iii) The technology (excluding programs) pertaining to the design or manufacture of hetero-junction microchips (excluding high electron mobility transistors or hetero-junction bipolar transistors whose operating frequency is less than 31.8 gigahertz)
 - (iv) The technology (excluding programs) pertaining to the design or manufacture of substrates used as components of electronic devices that use thin films made of diamond or silicon carbide
 - (v) The technology (excluding programs) pertaining to the design or manufacture of electron tubes whose operating frequency is 31.8 gigahertz or more

Article 20 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 8 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or manufacture of items falling under Article 7, item (i), (b) or item (iii), (c) of the same Article
- (ii) In addition to what is listed in the preceding item, technology (excluding programs) necessary for the design or manufacture of goods that fall under the items of Article 7
- (iii) Programs designed for the design or manufacture of items falling under Article 7, item (i), (b) or item (iii), (c) of the same Article or technology (excluding programs) necessary for the design or manufacture of those programs
- (iv) The technology (excluding programs) necessary for the use of the programs in the preceding item
- (v) In addition to what is listed in item (iii), programs designed for the design or manufacture of goods that fall under the items of Article 7, or technology

- (excluding programs) necessary for the design, manufacture, or use of those programs
- (vi) The technology (excluding programs) necessary for the use of items falling under Article 7
 - (vii) Programs designed for the use of items that fall under Article 7 or technology (excluding programs) necessary for the design, manufacture or use of those programs
 - (viii) Programs designed to support technology (excluding programs) that falls under any items from item (i) through the preceding item
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 8 (ii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) The technology (excluding programs) necessary for the design or manufacture of items that fall under any of the following
 - (a) Digital computers Adjusted Peak Performance exceeds 0.04 Weighted TeraFLOPS and is 0.1 Weighted TeraFLOPS or less
 - (b) Digital computers whose Adjusted Peak Performance exceeds 0.1 Weighted TeraFLOPS and is 0.75 Weighted TeraFLOPS or less
 - (ii) The technology (excluding programs) necessary for the design or manufacture of components designed to improve the functions digital computers, which components, by aggregating calculation elements achieve Adjusted Peak Performance that exceeds 0.04 Weighted TeraFLOPS and is 0.75 Weighted TeraFLOPS or less
 - (iii) The technology (excluding programs) necessary for programs designed for the design or manufacture of items that fall under any of the following or the design or manufacture of those programs
 - (a) Digital computers whose Adjusted Peak Performance exceeds 0.04 Weighted TeraFLOPS and is 0.1 Weighted TeraFLOPS or less
 - (b) Digital computers whose Adjusted Peak Performance exceeds 0.1 Weighted TeraFLOPS and is 0.75 Weighted TeraFLOPS or less
 - (iv) The technology (excluding programs) necessary for the use of the programs in the preceding item
 - (v) Programs designed for the design or manufacture of components designed to improve the functions of digital computers which components, by aggregating calculation elements, achieve Adjusted Peak Performance that exceeds 0.04 Weighted TeraFLOPS and is 0.75 Weighted TeraFLOPS or less or the technology (excluding programs) necessary for the design, manufacture or use of those programs
 - (vi) Programs designed to support technologies (excluding programs) that fall under item (i) through the preceding item
 - (vii) Programs that fall under any of the following or the technology (excluding

- programs) necessary for the design, manufacture or use of those programs
- (a) Operating systems, programming development tools, or compilers that are designed for devices having parallel processing functions and are source code
- (b) Deleted
- (viii) Programs designed to support the technology (excluding programs) in the preceding item
- (ix) Programs having equivalent functions to goods that fall under any of Article 8, item (ix), item (x), item (xii) or item (xiii) or programs that are capable of simulating the said functions
- (x) Programs to verify programs in the preceding item
- (xi) Programs designed for the design, manufacture or use of those falling under any of preceding two items
- (xii) The technology (excluding programs) necessary for the design, manufacture or use of items falling under any of preceding three items or programs designed to support them

Article 21 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 9 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or manufacture of items that fall under Article 8, item (ii), (a), 2. or item (vi)
- (ii) The technology (excluding programs) necessary for the design or manufacture of items that fall under any of Article 8, item (i), item (ii), item (iv) through item (vii), item (viii)-2, item (ix), item (x), item (xii) or item (xiii) (excluding those falling under the preceding item)
- (iii) The technology (excluding programs) necessary for the use of items that fall under any of Article 8, item (ix), item (x), item (xii) or item (xiii)
- (iv) The technology (excluding programs) necessary for the use (excluding those pertaining to operations) of items that fall under any of Article 8, item (i), item (ii), item (iv) through item (vii) or item (viii)-2
- (v) Programs designed for the design or manufacture of items that fall under Article 8, item (ii), (a), 2.
- (vi) Programs designed for the design or manufacture of items that fall under (excluding those falling under the preceding item) any of Article 8, item (i), item (ii), item (iv) through item (vii), or item (viii)-2
- (vii) Programs designed for the design or manufacture of items that fall under Article 8, item (ix), item (x), item (xii) or item (xiii)
- (viii) Programs designed for the use of items that fall under any of Article 8, item (i), item (ii), and item (iv) through item (vii) or item (viii)-2
- (viii)-2 Programs designed for the use of items that fall under any of Article 8,

- item (ix), item (x), item (xii) or item (xiii)
- (ix) Programs to realize the functions of goods that fall under any of Article 8, item (ix), item (x), item (xii) or item (xiii) or programs that are capable of simulating the said functions
- (x) Programs used for verification of items that fall under the preceding item
- (xi) The technology (excluding programs) necessary for the design or manufacture of the programs in item (v)
- (xi)-2 The technology (excluding programs) necessary for the use of the program in item (v) (excluding those pertaining to operations)
- (xii) The technology (excluding programs) necessary for the design or manufacture of the programs in item (vii), item (viii)-2, item (ix) or item (x)
- (xii)-2 The technology (excluding programs) necessary for the use of programs in item (vii), item (viii)-2, item (ix) or item (x)
- (xiii) The technology (excluding programs) necessary for the design, manufacture or use (excluding those that pertains to operations) of the programs in item (vi) or item (viii)
- (xiv) Programs designed to support the technology in item (i) or item (xi)
- (xv) Programs designed to support the technology from item (ii) through item (iv) or item (xi)-2 through item (xiii)
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 9 (ii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
 - (i) Deleted
 - (ii) Programs designed to provide the functions equivalent to those of goods that fall under any of Article 8, item (i), item (ii), item (iv) through item (vii) or item (viii)-2.
 - (iii) Programs designed for the design, manufacture or use of equipment the routing selection method of which is a dynamic routing method (excluding those expressed in machine language)
 - (iii)-2 Programs for the design of transmission communication devices or electronic interchanging devices that fall under (a); (b), 1. or 5.; (c) or (d), 1., or the technology (excluding programs) necessary for the design or manufacture of those falling under any of the following
 - (a) Those that use a digital transmission scheme and are designed to be capable of using at total transmission rate that exceeds 15 gigabits per second (referring to signals bits per unit time at maximum multiplexing level (including information bits and added bits, such as for line coding and overhead))
 - (b) Those that use laser oscillators and that fall under any of the following
 - 1. Those that utilize laser beams whose wave length exceeds 1,750 nanometers

2. Those that have the function of amplifying laser beams and that use optical fibers of praseodymium-doped fluorides
 3. Those that use a coherent transmission method
 4. Those that use light wavelength multiplex technology and wherein whose number of optical carrier waves per window exceeds 8
 5. Those that use an analog transmission method whose bandwidth exceeds 2.5 gigahertz (excluding devices for TV broadcasting (including cable TV broadcasting))
- (c) Those having an optical switching function
 - (d) Wireless transmitters or wireless receivers that fall under any of the following
 1. Wireless transmitters or receivers that use quadrature amplitude modulation technology that exceeds the value of 256
 2. Those that can be used at frequencies that exceed 31.8 gigahertz (excluding frequency bands allocated for wireless communication by the International Telecommunication Union (excluding the frequency bands allocated for radio determinations))
 - (e) Those having common channel signaling functions that operate in non compliant networks
 - (iv) The technology (excluding programs) necessary for the design, manufacture or use (excluding those pertaining to operations) of programs that fall under any of the preceding three items
 - (v) The technology (excluding programs) necessary for the design or manufacture of transmission communication devices designed to be mounted on satellites
 - (vi) Technology (excluding programs) pertaining to the design or use of communication technology that uses lasers and receives or tracks signals automatically and is also capable of communicating outside the atmosphere or under water
 - (vii) Deleted
 - (viii) Deleted
 - (ix) Deleted
 - (x) Deleted
 - (xi) The technology (excluding programs) pertaining to the design of the wireless base station receiver used for digital cellular wireless communication and signal reception functions of which is capable of modifying in order to enable multiband, multiple channels, multimode, multi-coding algorithms or multiprotocol operation by switching programs
 - (xii) Deleted
 - (xiii) Deleted
 - (xiv) The technology (excluding programs) pertaining to the design of

transmission communication devices using the spectrum diffusion technology (including frequency hopping)

- (xv) Programs designed to support technology (excluding programs) that falls under any of item (iii)-2, item (iv) through item (vi), item (xi) or the preceding item

Article 22 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 10 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design of items that fall under Article 9
- (ii) The technology (excluding programs) necessary for the manufacture of items that fall under Article 9, item (i), (a), 1. or (b), 3., item (iii), (a), (b) or (e) or (f), item (iv), item (v), (a), item (viii), (a), item (ix), (c) or (d), item (xi), (b) or item (xiii), (d), (h) or (k)
- (iii) The technology (excluding programs) necessary for manufacture of items that fall under Article 9 (excluding those falling under the preceding item)
- (iv) Programs designed for the design or manufacture of items that fall under Article 9, item (ix), (c) or (d) or item (xiii), (d), (h) or (k) or technology (excluding programs) necessary for the design of those programs
- (v) Programs designed for the design or manufacture of items that fall under Article 9, item (ix) through item (x) or item (xiii) (excluding those falling under the preceding item)
- (vi) The technology (excluding programs) necessary for the design of the programs of the preceding item

(2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 10 (ii) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) Programs designed for the use of items that fall under Article 9, item (iv) or Article 13 or Article 14, item (viii), (b).
- (ii) The technology (excluding programs) necessary for the design of the programs in the preceding item
- (iii) Programs that fall under any of the following
 - (a) Programs for magnetometer or magnetic field gradiometer calibrating equipment and designed to be mounted on vehicles, vessels, aircraft or satellites or other spacecrafts for space development
 - (b) Programs designed to detect magnetic abnormalities on vehicles, vessels, aircraft, satellites or other spacecrafts for space development
 - (c) Programs designed to compensate for the impact of movement on gravimeters or gravity gradiometer
 - (d) Air traffic control programs that fall under any of the following.

1. Air traffic control programs capable of processing and displaying 150 or more system tracks at the same time
 2. Air traffic control programs capable of receiving target data from 5 or more primary radars
- (iv) The technology (excluding programs) necessary for the design of the programs in the preceding item
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 10 (iii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Technology (excluding programs) necessary for the manufacture, among optical coatings, the diameter or long axis length of which is 500 millimeters or more and the loss due to absorption and scatter of which is less than 0.005, those having uniformity of 99.5% or more
 - (ii) Technology (excluding programs) pertaining to lathe turning using single point diamond tools and for finishing such that the root-mean-square of surface precision for curved surface areas exceeding 0.5 square meters is less than 10 nanometers
- (4) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 10 (iv) of the appended table Foreign Exchange Order shall be technology (excluding programs) necessary for the design, manufacture or use of test equipment for extra high output laser oscillators.
- (5) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 10 (vi) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Programs for manufacturing radomes that fall under following (a) and (b)
 - (a) Radomes designed to protect phased array antennas that are capable of scanning electronically
 - (b) Radomes that produce antenna patterns with the output ratio of main beam peak value to average side lobes exceeding 40 decibels
 - (ii) The technology (excluding programs) necessary for the design of the programs of the preceding item
- (6) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 10 (vii) of the appended table of the Foreign Exchange Order shall be technology necessary for the design, manufacture or use of devices to perform tests of the durability of substances against laser beams output by extra-high-output laser oscillators or the targets used for the test.

Article 23 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 11 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or

- manufacture of items that fall under Article 10
- (ii) Programs designed for the design or manufacture of items that fall under Article 10
 - (iii) The technology (excluding programs) necessary for the design of the programs in the preceding item
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 11 (ii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Programs for using an attitude direction reference system (excluding those using the gimbal method), inertial navigation systems, and other inertial systems (limited to those with source code) or technology (excluding programs) necessary for the design of those programs
 - (ii) Technology (excluding programs) necessary for the use of items that fall under any of Article 10, item (i) through item (iii)-2 or item (iv) (limited to those pertaining to repairs or overhauls)
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 11 (iii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) The technology (excluding programs) pertaining to the design or manufacture of inertial navigation systems or gyro-astro compasses for celestial navigation that incorporate items that fall under Article 10, item (i) or item (ii)
 - (ii) The technology (excluding programs) pertaining to the design of the programs that fall under each item of Article 27, paragraph (3) or paragraph (4)
- (4) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 11 (iv) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Programs for the use of avionics equipment that integrates sensor data and uses an expert system (limited to those with source code) or technology (excluding programs) necessary for the design of those programs
 - (ii) Programs for the design of items that fall under any of the following (limited to those with source code)
 - (a) Digital air traffic controllers for optimizing air flight routes
 - (b) Equipment to integrate propulsion control and flight control
 - (c) Operation equipment using fly-by-wire method or fly-by-light method
 - (d) Active flight controllers having a fault tolerance function or a self-reconfiguring function
 - (e) Automatic direction detectors for aircraft stations
 - (f) Air data equipment that uses the static data of airframe surface as a reference

- (g) Raster type head-up displays or three-dimensional displays
- (iii) The technology (excluding programs) necessary for the design of the programs of the preceding item
- (iv) The technology (excluding programs) pertaining to the design or manufacture of items that fall under any of the following
 - (a) Automatic direction detectors for aircraft stations designed for the use with frequencies exceeding 5 megahertz
 - (b) Air data equipment that uses static data on the airframe surface as a reference
 - (c) Raster type head-up display or three-dimensional display for aircraft
 - (d) Electric actuators designed for flight control
 - (e) Flight control optical sensor array designed for conducting active flight control
- (v) The technology pertaining to the design of active flight controllers that falls under any of the following
 - (a) The technology (excluding programs) that integrates multiple computers mounted on an airframe, in order to execute the control rules in real time
 - (b) The technology (excluding programs) that compensates for the control rule according to fluctuations in the relative position of sensors or the dynamic load of the airframe
 - (c) The technology (excluding programs) that controls equipments or data redundancy by computers for detection or tolerance of failures, separation or reconfiguring of fault locations
 - (d) Technology (excluding programs) that autonomously performs flight control in real time by reconfiguring force and moment control in flight
 - (e) Technology that integrates the data of digital flight control, navigation, and propulsion control into a digital flight traffic controller in order to optimize flight routes (excluding technology for flight instrument devices that integrate only programs and very high frequency omnidirectional range, distance measurement devices, instrument landing devices or microwave landing devices.)
 - (f) Technology (excluding programs) pertaining to full authority digital flight control (excluding technology pertaining to full authority digital engine control) or equipment for multi-sensor mission control that uses an expert system
 - (g) CAD programs designed for an active flight controller that uses technology that falls under any of (a) through (f)
 - (h) Technology (excluding programs) necessary for the design of the program in (g)
- (vi) The technology (excluding programs) pertaining to devices for helicopters that falls under any of the following or a CAD programs designed for items

that fall under (a) or (b)

- (a) Flight control devices for multi-spindle fly-by-wire systems or fly-by-light systems that integrate 2 or more functions among those that fall under the following
 1. Collective control function
 2. Cyclic control function
 3. Yaw control function
- (b) Devices that control counter torque or direction and by a means of a circulation control method
- (c) Rotors that use blades of variable shape in order to control each aerofoil blade separately
- (vii) The technology (excluding programs) necessary for the design of the programs of the preceding item

Article 24 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 12 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology necessary for the design or manufacture of items that fall under Article 11, item (i), (b), item (iv), (b), item (vi), item (viii) or item (x), (f) or (g)
- (ii) The technology necessary for the design or manufacture of items that fall under Article 11 (excluding those falling under the preceding item)
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 12 (ii) of the appended table of the Foreign Exchange Order shall be technology pertaining to programs designed for the use of the goods that fall under Article 11 or Article 14, item (ix) or item (x), or the use of goods (limited to those pertaining to repairs or overhauls) that fall under any of Article 11, item (i) through item (iii), or any of item (iv), (b) or (c), item (viii), item (ix), (e) through (i) or Article 10 or Article 14, item (ix) or item (x).
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 12 (iii) of the appended table of the Foreign Exchange Order shall be technology pertaining to the design or manufacture or use (limited to those pertaining to repairs or overhauls) of propellers designed for reducing underwater noise.

Article 25 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 13 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or manufacture of items that fall under any of Article 12, item (i), (b), item (iv) through item (x) or item (xi) through item (xix)

- (ii) Programs designed for the design or manufacture of items that fall under Article 12, item (xi), (b)
 - (iii) The technology (excluding programs) necessary for the design of the programs of the preceding item
 - (iv) Programs designed for the design or manufacture of items that fall under Article 12 (excluding those falling under item (ii))
 - (v) The technology (excluding programs) necessary for the design of the programs in the preceding item
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 13 (ii) of the appended table of the Foreign Exchange Order shall fall under any of the following.
- (i) Programs that are designed for the use of equipment for full authority digital engine control of items that fall under Article 12, and that fall under any of the following
 - (a) Programs for use in equipment for digital control of propulsion equipment or test equipment therefor
 - (b) Programs used for fault-tolerance functions of equipment for full authority digital engine control of propulsion equipment or test equipment therefor
 - (ii) The technology (excluding programs) necessary for the design of the programs in the preceding item
 - (iii) Programs that fall under any of the following
 - (a) Programs for two dimensional or three dimensional viscous flow verified by the data of wind tunnel tests or flight tests and that model the flow inside engines
 - (b) Programs for testing aerial vehicle gas turbine engines or components thereof, and designed to collect, process and analyze the data in real time and also execute feedback control during testing
 - (c) Programs designed to control unidirectional solidification or single crystal casting
 - (d) Programs necessary for the use of equipments for active control of chip clearance of a blade (excluding those incorporated into the goods that do not fall under the goods listed in the middle column in the appended table 1 of the Export Order, those necessary for maintenance work accompanying calibration or repair or those necessary for revision to enabler active control of chip clearance)
 - (iv) The technology (excluding programs) necessary for the design of the programs in the preceding item
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 13 (iii) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) pertaining to use of gas turbine engines or components thereof that fall under any of Article 12, item (i), (b), item (iv) through item (x) or item (xi) through item (xix) (limited to those pertaining to repairs or overhauls)
- (ii) The technology (excluding programs) necessary for the design or manufacture of components of gas turbine engines that fall under any of the following or programs for the design thereof
 - (a) Multi stage dome type combustors average temperature at the outlet of exceeds 1,540 degrees centigrade or combustors whose that use heat shielding combustor liners, non-metallic liners or non-metallic shells
 - (b) Components manufactured from metallic matrix composite materials, ceramic matrix, inter-metallic compounds or inter-metallic reinforcing materials that fall under Article 4, item (xii) or components manufactured from the composite materials that fall under item (xv) of the same Article using the resin that falls under item (xiii) of the same Article
 - (c) Non-cooling type blades, vanes, chip shrouds or other components that can be used in a gas path at 1,050 degrees centigrade or more
 - (d) Cooling type blades, vanes, chip shrouds that can be used in a gas flow path at 1,370 degrees centigrade or more (excluding those that fall under Article 27, paragraph (5), item (i))
 - (e) Components that join a wing part and a disk part of turbine blade using a solid phase bonding method
 - (f) Components that use a diffusion bonding method that falls under Article 18, item (iv)
 - (g) Rotation part components that are designed for damage tolerance and that use powdered metallurgical materials (limited to those that fall under Article 4, item (vii), (b))
 - (h) Equipments for providing gas turbine engines or composite cycle engines with full authority digital engine control or sensors therefor or components thereof
 - (i) Components that make flow path shapes adjustable (excluding inlet guide vanes, variable pitch fans or compressor variable stators or bleed valves) or control devices thereof, and those for goods that fall under any of the following (excluding those for reverse thrust)
 - 1. Gas generator turbines
 - 2. Fan turbines or power turbines
 - 3. Propelling nozzle
 - (j) Hollow fan blades without a support in the middle of a span thereof
 - (k) Components subjected to boring of openings that fall under any of the following by laser beam machining, water jet machining, electrolysis machining or electrical discharge machining

1. Components the hole depth of which exceeds 4 times the diameter and the diameter of which is less than 0.76 millimeters and the boring angle of which is 25 degrees or less
 2. Components the hole depth of which exceeds 5 times the diameter and the diameter of which is less than 0.4 millimeters and the boring angle of which exceeds 25 degrees
- (4) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 13 (iv) of the appended table of the Foreign Exchange Order shall fall under any of the following, or under programs for the design thereof.
- (i) Technology (excluding programs) necessary for the design or manufacture of, among wind tunnel models that use sensors that do not impede flow conditions, those capable of transmitting data from sensors to data collecting devices
 - (ii) Technology (excluding programs) necessary for the design or manufacture of propeller blades or prop fans that use composite materials and that are capable of absorbing loads that exceeds 2,000 kilowatts at speeds exceeding Mach 0.55
 - (iii) Technology (excluding programs) necessary for the design or manufacture of power transmission devices for aircraft that use helicopters or tilt rotors or tilt wings
- (5) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 13 (v) of the appended table of the Foreign Exchange Order shall fall under any of the following or the programs for the design thereof.
- (i) The technology (excluding programs) pertaining to the design or manufacture of reciprocating diesel engines for vehicles that fall under all of the following (a) through (c)
 - (a) Diesel engines with the engine volume of 1.2 cubic meters or less
 - (b) Diesel engines with a gross shaft power exceeding 750 kilowatts
 - (c) Diesel engines for which the gross brake power expressed in kilowatts divided by the engine volume expressed in cubic meters exceeds 700
 - (ii) Technology (excluding programs) necessary for the manufacture of the components of high-output diesel engines (this shall mean diesel engines in which the rated rotational speed is 2,300 or more revolutions per minute (RPM) and in which the brake average effective pressure is 1.8 megapascals or more when the RPM is 2,300; hereinafter the same shall apply in this Article), that fall under any of the following
 - (a) Technology necessary for the manufacture of engines all components of which, from the following 1. through 3., are made of ceramics that fall under Article 4, item (xii) (excluding those all components of which, other

than the said components are made of materials other than the said ceramics)

1. Cylinder liners
2. Pistons
3. Cylinder heads

(b) The technology necessary for the manufacture of turbochargers, the compressor of which falls under all of following 1. through 3.

1. Turbosuperchargers Compressors the pressure ratio per stage of which is 4 or more
2. Turbosuperchargers Compressors the flow volume per minute of which is 30 kilograms or more and 130 kilograms or less
3. Turbosuperchargers Compressors flow area of compressors of which or that of its turbine parts can be modified

(c) Technology necessary for the manufacture of, among fuel injection devices designed so as to use any of the fuels the dynamic viscosity of which at 37.8 degrees centigrade is 0.5 centistokes or more and 2.5 centistokes or less, those that fall under the following 1. and 2.

1. Fuel injection devices in which the injection amount exceeds 230 cubic millimeters per cylinder injection
2. Fuel injection devices that are controlled electronically so that adjuster characteristics can be automatically switched in order to obtain the same torque characteristics in response to fuel characteristics

(iii) Technology (excluding programs) necessary for the design or manufacture of high output diesel engines the wall surface temperature of which exceeds 450 degrees centigrade measured at the top dead center of the piston top ring and that use solid, gas phase or liquid lubricants on cylinder wall surfaces

Article 26 The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 14 of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or manufacture of items that fall under Article 13
- (ii) Programs designed for the design, manufacture or use of items that fall under Article 13 or technology (excluding programs) necessary for the design, manufacture or use of those programs

Article 27 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 15 (i) of the appended table of the Foreign Exchange Order shall fall under any of the following.

- (i) The technology (excluding programs) necessary for the design or manufacture of items that fall under any of Article 14, item (i) through item

- (iii)
- (ii) The technology (excluding programs) necessary for the design or manufacture of items that fall under Article 14, item (vi) or item (vii)
- (iii) The technology necessary for the design or manufacture of items that fall under Article 14, item (v), item (viii) or item (xi)
- (iv) The technology necessary for the design or manufacture of items that fall under Article 14, item (ix) or item (x)
- (v) The technology (excluding programs) necessary for the design of programs designed for the design or manufacture of items that fall under item (iii)
- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 15 (iii) of the appended table of the Foreign Exchange Order shall be programs that fall under any of the following or the technology necessary for the design or manufacture of those programs.
 - (i) Programs designed for carrying out acoustic beam molding for real time processing of sound data received by using towed hydrophone arrays
 - (ii) Source code for executing real time processing of sound data received by using towed hydrophone arrays
 - (iii) Programs designed for carrying out acoustic beam molding for real time processing of sound data received by using ocean bottom or harbor/port cable systems
 - (iv) Source code for executing real time processing of sound data received by using ocean bottom or harbor/ bay cable systems
- (3) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 15 (iv) of the appended table of the Foreign Exchange Order shall fall under any of the following.
 - (i) Programs designed so that these systems can fall under Article 10, item (iii), item (iii)-2 or item (iii)-3 due to their using inertial navigation systems or other inertial systems
 - (ii) Programs that enable devices to fall under Article 10, item (iii), item (iii)-2 or item (iii)-3 due to their using inertial navigation systems or other inertial systems and continuously integrating inertial navigation data and navigation data that falls under any of the following (limited to those with source code)
 - (a) Speed data from radars that utilize Doppler effects
 - (b) Navigation data from GPS or Glonass
 - (c) Data from database reference navigation equipment
- (4) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 15 (v) of the appended table of the Foreign Exchange Order, shall be programs designed so that the devices can fall under Article 10, item (iv) due to its using in Gyro-astro compasses, or devices that derive position or orientation by means of automatically tracking celestial bodies or

satellites.

- (5) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 15 (vi) of the appended table of the Foreign Exchange Order shall be technology necessary for the design or manufacture of gas turbine engine components that fall under any of the following.
- (i) Gas turbine blades, vanes or chip shrouds cast by unidirectional solidification or single crystal alloy methods, the stress breakage time of which is 400 hours or more when a load that generates a 200 megapascals stress is applied in the vertical direction to the crystal surface at 1,000 degrees centigrade
 - (ii) Components that use organic composite materials and are designed for use at exceeding 315 degrees centigrade

Article 28 (1) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 16 (i) of the appended table of the Foreign Exchange Order shall be technology exclusively pertaining to the design, manufacture or use of goods prescribed in Article 14-2.

- (2) The technology specified by the Ordinance of the Ministry of Economy, Trade and Industry in row 16 (ii) of the appended table of the Foreign Exchange Order shall be technology exclusively pertaining to the design, manufacture or use of goods that fall under Class 25 through Class 40, Class 54 through 59, Class 63, Class 68 through Class 93, or Class 95 of the appended table of Custom Tariff Act (Act No. 54 of 1910).

Supplementary Provisions

This Ordinance of the Ministry shall come into effect as from November 14, 1991.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 12 of March 27, 1992]

This Ordinance of the Ministry shall come into effect as from April 1, 1992.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 85 of December 9, 1992]

- (1) This Ordinance of the Ministry shall come into effect as from December 31, 1992.
- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force

shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 30 of June 18, 1993]

This Ordinance of the Ministry shall come into effect as from July 16, 1993; provided, however, that the revised provisions of Article 3 and Article 16, paragraph (2) shall come into effect as from July 1, 1993.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 85 of December 1, 1993]

- (1) The provision of Article 1 in this Ordinance of the Ministry shall come into effect as from the date of promulgation, and the provisions of Article 2 shall come into effect as from December 22, 1993.
- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 3 of January 28, 1994]

This Ordinance of the Ministry shall come into effect as from the date of promulgation.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 10 of March 14, 1994]

- (1) This Ordinance of the Ministry shall come into effect as from March 28, 1994; provided, however, that the revised provisions of Article 2, the revised provisions of Article 7 (in item (iii), (d) of the same Article, "equipment that corresponds to any of the following" shall be revised to "equipment the composite theoretical performance of which exceeds 260 mega calculations per seconds by aggregating calculation elements", and except for the part that deletes 1. and 2.) and the revised provisions of Article 8 shall come into effect as from the date of promulgation.
- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International

Trade and Industry No. 49 of June 24, 1994]

- (1) This Ordinance of the Ministry shall come into effect as from July 6, 2004; provided, however, that the revised provisions of Article 7 (limited to the part deleting item (v) and item (vi) of the same Article) and the revised provisions of Article 20 (excluding the part deleting paragraph (1), item (v) through item (ix) of the same Article) shall come into effect as from the date of promulgation.
- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 2 of February 27, 1995]

- (1) This Ordinance of the Ministry shall come into effect as from the date of promulgation.
- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 43 of May 10, 1995]

- (1) This Ordinance of the Ministry shall come into effect as from May 22, 1995.
- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 106 of December 20, 1995]

- (1) This Ordinance of the Ministry shall come into effect as from January 3, 1996; provided, however, that the revised provisions of Article 1, the revised provisions of Article 2-2 (limited to the parts in which "Fresh vaccine ingredients" in paragraph (1), item (i) and item (ii) of the same Article is revised to "vaccine" and "(excluding immune toxin)" is added under "toxin" in item (iii) of the same paragraph), and the revised provisions of Article 5, the revised provisions of Article 15 and the revised provisions of Article 18 shall come into effect as from the date of promulgation.
- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force

shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 18 of March 28, 1996]

This Ordinance of the Ministry shall come into effect as from October 1, 1996.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 60 of August 28, 1996] [Extract]

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from September 13, 1996.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 65 of April 3, 1997]

This Ordinance of the Ministry shall come into effect as from April 29, 1997.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 9 of March 12, 1998]

This Ordinance of the Ministry shall come into effect as from April 1, 1998.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 13 of March 25, 1998]

(Effective Date)

- (1) This Ordinance of the Ministry shall come into effect as from April 1, 1998.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International

Trade and Industry No. 78 of August 26, 1998]

(Effective Date)

- (1) This Ordinance of the Ministry shall come into effect as from the date of promulgation.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 83 of November 5, 1998]

This Ordinance of the Ministry shall come into effect as from November 12, 1998.

Supplementary Provisions [Ordinance of the Ministry of International Trade and Industry No. 64 of June 18, 1999]

(Effective Date)

- (1) This Ordinance of the Ministry shall come into effect as from the date of promulgation; provided, however, that the provisions listed in each of the following those shall come in effect as from the date to be determined for each item.

- (i) The revised provisions of Article 1, the revised provisions of Article 4, item (ix), the revised provisions of Article 5, item (vii), the revised provisions to Article 6, item (xvii), (a) and (f), the revised provisions of Article 9, item (x), (b), the revised provisions of Article 14-2, item (ii), the revised provisions of Article 19, paragraph (3) and paragraph (5), the revised provisions of Article 21, paragraph (1), item (x)-2, item (xi)-2, item (xiii) and item (xv) and paragraph (2), item (iv), item (iv)-2 and item (xi) of the same Article, the revised provisions of the appended table 3: July 2, 1999
- (ii) The revised provisions of Article 2, paragraph (1) and the additional provisions from Article 14-2, item (li)-2 through item (li)-4: July 18, 1999

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

**Supplementary Provisions [Ordinance of the Ministry of International
Trade and Industry No. 115 of June 23, 2000]**

(Effective Date)

- (1) This Ordinance of the Ministry shall come into effect as from July 7, 2000; provided, however, that the following shall come into effect as from the date of promulgation: the revised provisions of Article 1, item (viii), item (ix), item (xi), item (xiv), item (xviii), item (xxi), item (xxii), item (xxiv), (a) and (c), item (xxvii) and item (xxxiii); the revised provisions of item (xxxiv) of the same Article (limited to the part in which "those that are 75 millimeters or more" in (a), 1. and (b), 2. of the same item is revised to "those that exceed 75 millimeters"); the revised provisions of item (xxxv), item (xxxvi), item (xxxviii), item (xl), item (xliv) and also item (lvii) of the same Article, Article 3, item (vii), (e), item (xvi), (a) and (g), item (xx) and item (xxii); the revised provisions of Article 6, item (i) (excluding the part in which "parallel processors" in (c), 3. of the same item is revised to "devices designed for parallel processors"); and the revised provisions of item (ii), (b), item (iv) and item (viii) of the same Article, Article 7, Article 8, Article 9, item (i), (a), Article 12, Article 13, item (v), Article 14, item (v) and item (vi), (a) and (d), Article 14-2, item (lxxiv), Article 19, Article 20 and Article 21; and the revised provisions of Article 25 (limited to the part in which paragraph (3), item (ii), (j) of the same Article is deleted and (k) is changed to (j) and (l) is changed to (k))

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

**Supplementary Provisions [Ordinance of the Ministry of International
Trade and Industry No. 265 of October 31, 2000]**

This Ordinance of the Ministry shall come into effect as from January 6, 2001.

**Supplementary Provisions [Ordinance of the Ministry of International
Trade and Industry No. 408 of December 27, 2000]**

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from the date of promulgation.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 163 of May 16, 2001]

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from the date or promulgation; provided, however, that Article 1, item (x), (b), Article 2-2, Article 4, Article 5, item (ii), (b), item (viii) and item (x), Article 6, item (ii), item (v), item (xvii) and item (xviii); the revised provisions of Article 9, item (viii) (excluding the part in which "built-in devices" in (b), 6. of the same item is revised to "built-in video cameras"); the revised provisions of Article 10, Article 21, paragraph (2), item (iii)-2, (d) and item (xvi) of the comments of the appended table 3 shall come into effect as from May 30, 2001.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 247 of December 28, 2001]

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from April 1, 2002.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 85 of June 14, 2002]

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from July 15, 2002.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to

the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 108 of October 21, 2002]

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from November 1, 2002; provided, however, that the revised provisions of Article 2 shall come into effect as from January 1, 2003.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to any acts committed prior to the enforcement of this Ordinance of the Ministry, provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 52 of April 1, 2003]

This Ordinance of the Ministry shall come into effect as from the date of promulgation.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 159 of December 24, 2003]

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from January 20, 2004.

(Transitional Measures pertaining to Penal Provisions)

- (2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 104 of November 10, 2004]

(Effective date)

- (1) This Ordinance of the Ministry shall come into effect as from January 1, 2005.

(Transitional Measures pertaining to Penal Provisions)

(2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 116 of December 2, 2005]

(Effective date)

(1) This Ordinance of the Ministry shall come into effect as from January 1, 2006.

(Transitional Measures pertaining to Penal Provisions)

(2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 97 of November 17, 2006]

This Ordinance of the Ministry shall come into effect as from January 1, 2007.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 21 of March 26, 2008]

(Effective Date)

(1) This Ordinance of the Ministry shall come into effect as from May 15, 2008.

(Transitional Measures pertaining to Penal Provisions)

(2) With regard to the application of penal provisions to acts committed prior to the enforcement of this Ordinance of the Ministry, the provisions then in force shall remain applicable.

Supplementary Provisions [Ordinance of the Ministry of Economy, Trade and Industry No. 55 of August 27, 2008]

This Ordinance of the Ministry shall come into effect as from November 1, 2008.

Appended Table No. 1 (Re: Art. 19)

	Microprocessors, microcomputers and microcontrollers	Composite theoretical performance
1	Having a single computational element	Theoretical performance of that element

2	Having multiple computational elements, all of which function separately and independently	Greatest theoretical performance of these computational elements
3	Having multiple computational elements, all of which function simultaneously and share a memory device	Value of the greatest theoretical performance of these computational elements, added to the value obtained by multiplying the theoretical performance of each and every other elements by 0.75
4	Deleted	Deleted
5	Having multiple computational elements, all of which function simultaneously but do not share a memory device	<p>Value of the greatest theoretical performance of these computational elements, added to the value obtained by multiplying the theoretical performance of each and every other elements by the following coefficients</p> <p>(a) Computational elements ranked in descending order by theoretical performance from 2nd to 32nd</p> <p>(i) 0.75, when the sum of the maximum data speeds (expressed in megabytes per second; referred to hereinafter in this row 5 simply as "maximum data speed") of all channels to be connected to said computational elements is 20 megabytes or more per second</p> <p>(ii) The value obtained by multiplying 0.75 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second. However, 0.75 for computational elements ranked 2nd through 12th, when the composite theoretical performance of the computational elements exceeds 50 megabytes.</p> <p>(b) Computational elements ranked in descending order by theoretical performance from 33rd to 64th</p> <p>(i) 0.6, when the sum of the maximum data speeds is 20 megabytes or more per second</p> <p>(ii) The value obtained by multiplying 0.6 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second.</p> <p>(c) Computational elements ranked in descending order by theoretical performance from 65th to 256th</p>

		<p>(i) 0.45, when the sum of the maximum data speeds is 20 megabytes or more per second</p> <p>(ii) The value obtained by multiplying 0.45 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second.</p> <p>(d) Computational elements ranked in descending order by theoretical performance below 256th</p> <p>(i) 0.3, when the sum of the maximum data speeds is 20 megabytes or more per second</p> <p>(ii) The value obtained by multiplying 0.3 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second.</p>
6	<p>Having multiple computational elements, all of which function simultaneously and share a memory device, combined with multiple computational elements or a collection of computational elements, which do not share a memory device</p>	<p>Value calculated according to the following procedures</p> <p>(a) For computational elements, all of which function simultaneously and share a memory device, obtain the theoretical performance in accordance with Row 3.</p> <p>(b) The greatest theoretical performance among the values obtained by means of (a) or the theoretical performance of computing elements which do not share a memory device, added to all the values obtained by multiplying the theoretical performances for the each and every others by the coefficients specified below.</p> <p>(i) Computational elements or collections of computational elements ranked in descending order by theoretical performance from 2nd to 32nd</p>

(1) 0.75, when the sum of the maximum data speeds (expressed in megabytes per second; referred to hereinafter in this row 6 simply as "maximum data speed") of all channels to be connected to said computational elements or collections of computational elements is 20 megabytes or more per second

(2) The value obtained by multiplying 0.75 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second.

However, 0.75 for computational elements ranked 2nd through 12th, when the composite theoretical performance of the computational elements or collection of computational elements exceeds 50 megabytes.

(ii) Computational elements or collections of computational elements ranked in descending order by theoretical performance from 33rd to 64th

(1) 0.6, when the sum of the maximum data speeds for all channels to be connected to the computational elements or collections of computational elements is 20 megabytes or more per second

(2) The value obtained by multiplying 0.6 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second.

(iii) Computational elements and collections of computational elements ranked in descending order by theoretical performance from 65th to 256th

(1) 0.45, when the sum of the maximum data speeds for all channels to be connected to the computational elements or collections of computational elements is 20 megabytes per second

(2) The value obtained by multiplying 0.45 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second.

		(iv) Computational elements and collections of computational elements ranked in descending order by theoretical performance below 256th (1) 0.3, when the sum of the maximum data speeds for all channels to be connected to the computational elements or collections of computational elements is 20 megabytes or more per second (2) The value obtained by multiplying 0.3 by the value dividing the sum of the maximum data speeds by 20, when the sum of the maximum data speeds is less than 20 megabytes per second.
7	Having multiple computational elements (other than those governed by Rows 2, 3, 5 or 6)	The theoretical performance of a computational element functioning independently, or the greatest theoretical performance of a combination of computational elements functioning simultaneously. The theoretical performance for a combination of computational elements functioning simultaneously is the value obtained from row 3, 5 or 6.

Appended Table No. 2 (Re: Art. 10, Art. 12)

Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Republic of Korea, Luxembourg, The Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Spain, Slovakia, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States of America

Appended Table No. 3 (Re: Art. 18)

	Coating Method	Base Material	Coating
1	Method of fixing the coating material generated by chemical reaction of raw material gas onto the base material surface.	Superalloy	Aluminum compounds
		Ceramics or low-thermal expansion glasses	Silicon compounds, carbides, dielectric film, diamonds and non-crystalline diamond-like carbon films

	Composite material using carbon and carbon fibers (referred to hereinafter as "carbon-carbon"), ceramic composites and metal matrix composites	Silicon compounds, carbides, refractory metals, and mixtures thereof; dielectric film, aluminum compounds, aluminum alloy compounds and boron nitride
	Tungsten carbide alloys and silicon carbide	Carbides, tungsten, mixtures of carbides and tungsten, and dielectric film
	Molybdenum and molybdenum alloys	Dielectric film
	Beryllium and beryllium alloys	Dielectric film, diamonds and non-crystalline diamond-like carbon films
	Sensor window material	Dielectric film, diamonds and non-crystalline diamond-like carbon films
2	Method of fixing coating material volatilized by electronic beam onto the base material surface	Superalloys
		Silicon alloy compounds, aluminum alloy compounds, chromium-aluminum alloy compounds, improved zirconia, silicon compounds, aluminum compounds and mixtures combining thereof
	Ceramics or low-thermal expansion glasses	Dielectric film
	Alloy steel with corrosion resistance	Chromium-aluminum alloys, improved zirconia and mixtures of chromium-aluminum alloys and improved zirconia
	Carbon-carbon, ceramic composites and metal matrix composites	Silicon compounds, carbides, refractory metals, and mixtures thereof; dielectric film and boron nitride
	Tungsten carbide alloys and silicon carbide	Carbides, tungsten, mixtures of carbides and tungsten, and dielectric film
	Molybdenum and molybdenum alloys	Dielectric film
	Beryllium and beryllium alloys	Dielectric film, boron alloys and beryllium
	Sensor window material	Dielectric film
	Titanium alloys	Boron compounds and nitrides

3	Method of fixing coating material volatilized by electric resistance heating onto the surface of the base material	Ceramics or low-thermal expansion glasses	Dielectric film and non-crystalline diamond-like carbon film
		Carbon-carbon, ceramic composites and metal matrix composites	Dielectric film
		Tungsten carbide alloys and silicon carbide	Dielectric film
		Molybdenum and molybdenum alloys	Dielectric film
		Beryllium and beryllium alloys	Dielectric film
		Sensor window material	Dielectric film and non-crystalline diamond-like carbon film
4	Method of fixing coating material volatilized by laser onto the surface of the base material	Ceramics or low-thermal expansion glasses	Silicon compounds, dielectric film and non-crystalline diamond-like carbon film
		Carbon-carbon, ceramic composites and metal matrix composites	Dielectric film
		Tungsten carbide alloys and silicon carbide	Dielectric film
		Molybdenum and molybdenum alloys	Dielectric film
		Beryllium and beryllium alloys	Dielectric film
		Sensor window material	Dielectric film and non-crystalline diamond-like carbon film
5	Method of fixing coating material volatilized by arc discharge onto the surface of the base material	Superalloys	Silicon alloy compounds, aluminum alloy compounds and chromium-aluminum alloys
		Composite material with polymer or organic compound matrix	Boron compounds, carbides, nitrides and non-crystalline diamond-like carbon film

6	Method of fixing the coating material onto the surface of base metal by placing powdered coating material and the base material into a container and heating to 757 degrees centigrade or more	Carbon-carbon, ceramic composites or metal matrix composites	Silicon compounds, carbides and mixtures of silicon compounds and carbides
		Titanium alloys	Silicon compounds, aluminum compounds and aluminum alloy compounds
		Metals and metal alloys with fireresistance	Silicon compounds and oxides
7	Method using plasma spray coating	Superalloys	Chromium-aluminum alloys, improved zirconia, mixtures of chromium-aluminum alloys and improved zirconia, nickel-graphite alloys capable of being polished, substances containing nickel-chromium-aluminum capable of being polished, and aluminum-silicon polyester alloys and aluminum alloy compounds capable of being polished
		Aluminum alloys	Chromium-aluminum alloys, improved zirconia, silicon compounds and mixtures combining thereof
		Metals and metal alloys with fire resistance	Aluminum compound, silicon compounds and carbides
		Alloy steel with corrosion resistance	Chromium-aluminum alloys, improved zirconia and mixtures of chromium-aluminum alloys and improved zirconia

		Titanium alloys	Carbides, aluminum compounds, silicon compounds, aluminum alloy compounds, nickel-graphite alloys capable of being polished, substances containing nickel-chromium-aluminum capable of being polished, and aluminum-silicon polyester alloys capable of being polished
8	Method of fixing slurried coating material onto the surface of base material	Metals and metal alloys with fire resistance	Molten silicon compounds and molten aluminum compounds
		Carbon-carbon, ceramic composites and metal matrix composites	Silicon compounds, carbides and mixtures of silicon compounds and carbides
9	Method of sputtering	Superalloys	Silicon alloy compounds, aluminum alloy compounds, aluminum compounds containing precious metals, chromium-aluminum alloys, improved zirconia, platinum and mixtures thereof
		Ceramics or low-thermal expansion glasses	Silicon compounds, platinum, mixtures of silicon compounds and platinum, dielectric film and non-crystalline diamond-like carbon film
		Titanium alloys	Boron compounds, nitrides, oxides, silicon compounds, aluminum compounds, aluminum alloy compounds and carbides
		Carbon-carbon, ceramic composites and metal matrix composites	Silicon compounds, carbides, refractory metals and mixtures thereof; dielectric film and boron nitride
		Tungsten carbide alloys and silicon carbide	Carbides, tungsten and mixtures of carbides and tungsten; dielectric film and boron nitride
		Molybdenum and molybdenum alloys	Dielectric film
		Beryllium and beryllium alloys	Boron compounds, dielectric film and beryllium

		Sensor window material	Dielectric film and non-crystalline diamond-like carbon film
		Metals and metal alloys with fire resistance	Aluminum compounds, silicon compounds, oxides and carbides
1	Method of ion implantation	High temperature bearing steel	Chromium, tantalum and niobium additives
0		Titanium alloys	Boron compounds and nitrides
		Beryllium and beryllium alloys	Boron compounds
		Tungsten carbide alloys	Carbides and nitrides