STATUTORY INSTRUMENTS

2025 No. 1197

CUSTOMS

TRADE

The Export Control (Amendment) (No. 2) Regulations 2025

Made - - - -	*13th November 2025*
Laid before Parliament	*17th November 2025*
Coming into force - -	*16th December 2025*

The Secretary of State makes these Regulations in exercise of the powers conferred by sections 1(1) and (3), 2(1) and (3), 4(1) and (3), 5(2), (4), (5) and (7) of the Export Control Act 2002(**a**), Article 15(1) of Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items (Recast)(**b**) and Article 24(1)(a) and (b) and (3)(b)(i) of Regulation (EU) 2019/125 of the European Parliament and of the Council of 16 January 2019 concerning trade in certain goods which could be used for capital punishment, torture or other cruel, inhuman or degrading treatment or punishment (codification)(**c**).

PART 1
PRELIMINARY

Citation, commencement and extent

1.—(1) These Regulations may be cited as the Export Control (Amendment) (No. 2) Regulations 2025.

(2) These Regulations come into force on 16th December 2025.

(3) Parts 1 and 2 extend to England and Wales, Scotland and Northern Ireland.

(4) Parts 3 and 4 extend to England and Wales, and Scotland.

(**a**) 2002 c. 28; see section 11 for defined terms used in these provisions. Sections 1, 2, 4 and 5 were amended by article 6(2)(c) of the Treaty of Lisbon (Changes in Terminology) Order 2011 (S.I. 2011/1043); sections 5 and 11 were amended by regulation 2 of the Trade etc. in Dual-Use Items and Firearms etc. (Amendment) (EU Exit) Regulations 2019 (S.I. 2019/771), as amended by regulation 9 of the Export Control (Amendment) (EU Exit) Regulations 2020 (S.I. 2020/1502).

(**b**) EUR 2009/428; Article 15 was substituted by regulation 3(15) of the Trade etc. in Dual-Use Items and Firearms etc. (Amendment) (EU Exit) Regulations 2019 (S.I. 2019/771), as substituted by regulation 2(3) of the Trade etc. in Dual-Use Items and Firearms etc. (Amendment) (EU Exit) (No. 2) Regulations 2019 (S.I. 2019/806).

(**c**) EUR 2019/125; Article 24 was substituted by regulation 2(24) of the Trade in Torture etc. Goods (Amendment) (EU Exit) Regulations 2020 (S.I. 2020/1479).

PART 2

AMENDMENTS TO THE EXPORT CONTROL ORDER 2008

Amendments to the Export Control Order 2008

2. The Export Control Order 2008(**a**) is amended in accordance with regulations 3 to 5.

Amendments to Schedule 2 (Military Goods, Software and Technology)

3.—(1) Schedule 2 (Military Goods, Software and Technology) is amended as follows.

(2) After the definition of "Spacecraft", insert—

""sub-orbital craft" means a craft having an enclosure designed for the transport of people or cargo which is designed to:

a. operate above the stratosphere;

b. perform a non-orbital trajectory; and

c. land back on Earth with the people or cargo intact;".

(3) In entry ML7.h., for the Technical Notes substitute—

"*Technical Notes:*
For the purposes of ML7.h.:

1. 'Biopolymers' are biological macromolecules as follows:

a. Enzymes for specific chemical or biochemical reactions;

b. 'Anti-idiotypic', 'monoclonal' or 'polyclonal' 'antibodies';

c. Specially designed or specially processed 'receptors'.

2. 'Anti-idiotypic antibodies' means antibodies which bind to the specific antigen binding sites of other antibodies.

3. 'Monoclonal antibodies' means proteins which bind to one antigenic site and are produced by a single clone of cells.

4. 'Polyclonal antibodies' means a mixture of proteins which bind to the specific antigen and are produced by more than one clone of cells.

5. 'Receptors' means biological macromolecular structures capable of binding ligands, the binding of which affects physiological functions.".

(4) At the end of entry ML10.i., for "." substitute ";".

(**a**) S.I. 2008/3231; Schedule 2 was substituted by article 2(8) and the Schedule to the Export Control (Amendment) Order 2017 (S.I. 2017/85); relevant amending instruments are S.I. 2009/1305, 2151, 2969, 2010/121, 615, 2007, 2011/825, 1304, 2010, 2925, 2012/1910, 2013/3182, 2014/1069, 2357, 2015/940, 1546, 1586, 2016/503, 787, 2017/83, 85, 697, 2018/108, 165, 939, 2019/137, 989, 1159, 1236, 2020/1502, 2021/586, 2022/491, 1042, 1300, 2023/302, 695, 1048, 2024/346 and 2025/532.

Amendments to Schedule 3 (UK Controlled Dual-Use Goods, Software and Technology)

4.—(1) Schedule 3 (UK controlled dual-use goods, software and technology) is amended as follows.

(2) Omit the following definitions—

(a) "circuit element";

(b) "digital computer", including the Note to that definition;

(c) "discrete component";

(d) "electronic assemblies";

(e) "Process Design Kit".

(3) Omit the entries PL9013 to PL9015, including the headings, Notes and Technical Notes to those entries.

Amendments to Schedule 4 (Countries and Destinations Subject to Stricter Export or Trade Controls)

5.—(1) Schedule 4 (Countries and Destinations Subject to Stricter Export or Trade Controls) is amended as follows.

(2) In Part 2 (embargoed and subject to transit control for military goods), omit—

(a) "Armenia";

(b) "Azerbaijan".

(3) In Part 4 (subject to transit control for category B goods), at the appropriate place, insert—

(a) "Armenia";

(b) "Azerbaijan".

PART 3

AMENDMENTS TO COUNCIL REGULATION (EC) NO 428/2009

Amendments to Council Regulation (EC) No 428/2009

6. Annex I (list of dual-use items) to Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community Regime for the control of exports, transfer, brokering and transit of dual-use items (Recast)(**a**) is amended in accordance with regulations 7 to 13.

Amendments to Category 1 - Special Materials and Related Equipment

7.—(1) The section headed Category 1 - Special Materials and Related Equipment is amended as follows.

(2) In the section headed 1B Test, Inspection and Production Equipment, in paragraph 2 of the Technical Notes to entry 1B228, for "contractor" substitute "contactor".

(3) In the section headed 1C Materials, after entry 1C450, insert—

"1C513 'High-entropy alloy' or 'refractory metal and alloy' powders, not specified in 1C002, having a surface modified with 'inoculants'.

Technical Notes:

(**a**) EUR 2009/428; relevant amending instruments are S.I. 2022/410, 2023/302, 695 and 1048, 2024/346 and 2025/532.

For the purposes of 1C513:

1. *'High-entropy alloys' are alloys having at least 5 principal metallic elements, each having concentration within the range of 5 to 35 atomic percent, from the following list: Al, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zr, Nb, Mo, Hf, Ta or W.*

2. *'Inoculants' are additives that promote grain nucleation and increase the total area of grain boundaries to inhibit solidification defects.*

3. *'Refractory metals and alloys' are metals and alloys of niobium, molybdenum, tungsten and tantalum.*".

Amendments to Category 2 - Materials Processing

8.—(1) The section headed Category 2 - Materials Processing is amended as follows.

(2) In the section headed 2B Test, Inspection and Production Equipment, after entry 2B352, insert—

"2B510 Additive manufacturing equipment, designed to produce metal or metal alloy components, having all of the following, and specially designed components therefor:

a. Having at least one of the following consolidation sources:

1. "Lasers";

2. Electron beam; or

3. Electric arc;

b. Having a controlled process atmosphere of any of the following:

1. Inert gas; or

2. Vacuum (equal to or less than 100 Pa);

c. Having any of the following 'in-process monitoring' equipment in a 'coaxial configuration' or 'paraxial configuration':

1. Imaging camera with a peak response in the wavelength range exceeding 380 nm but not exceeding 14 000 nm;

2. Pyrometer designed to measure temperatures greater than 1 273,15 K (1 000°C); or

3. Radiometer or spectrometer with a peak response in the wavelength range exceeding 380 nm but not exceeding 3 000 nm; and

d. A closed loop control system designed to modify the consolidation source parameters, build path, or equipment settings during the build cycle in response to feedback from 'in-process monitoring' equipment specified in 2B510.c.

Technical Notes:
For the purposes of 2B510:

1. *'In-process monitoring', also known as in-situ process monitoring, pertains to the observation and measurement of the additive manufacturing process including electromagnetic or thermal emissions from the melt pool.*

2. *'Co-axial configuration', also known as on-axis or inline configuration, pertains to one or more sensors that are mounted in an optical path shared by the "laser" consolidation source.*

3. *'Paraxial configuration' pertains to one or more sensors that are physically mounted onto or integrated into the "laser", electron beam or electric arc consolidation source component.*

4. *For both 'co-axial configuration' and 'paraxial configuration', the field of view of the sensor(s) is fixed to the moving reference frame of the consolidation source and moves in the same scan trajectories of the consolidation source throughout the build process.*".

(3) In the section headed 2D Software, in entry 2D001.a., for "2A001 or 2B001 to 2B009" substitute "2A001, 2B001 to 2B009 or 2B510".

(4) In the section headed 2E Technology, after the Technical Note to the table (Deposition techniques) that appears after entry 2E301, insert—

"2E503 "Technology", as follows:

g. "Technology", not specified elsewhere, for the "development" or "production" of 'coating systems' having all of the following:

1. Designed to protect ceramic "matrix" "composite" materials specified in 1C007 from corrosion; and

2. Designed to operate at temperatures exceeding 1 373,15 K (1 100°C).

Technical Note:
For the purposes of 2E503.g.,'coating systems' consist of one or more layers (e.g., bond, interlayer, top coat) of material deposited on the substrate.".

Amendments to Category 3 - Electronics

9.—(1) The section headed Category 3 - Electronics is amended as follows.

(2) In the section headed 3A Systems, Equipment and Components—

(a) in Note 1, for "or 3A001.b.12.," substitute "3A001.b.12. or 3A501.a.15.";

(b) after the Technical Note to 3A001.a.2., insert—

"*N.B.:*

For cryogenic CMOS integrated circuits not specified in 3A001.a.2., see 3A501.a.15.";

(c) after the Note to entry 3A001.a.7., for the N.B. substitute—

"*N.B.1.:*

For integrated circuits having field programmable logic devices that are combined with an analogue-to-digital converter, see 3A001.a.14.

N.B.2.:

For "electronic assemblies", modules or equipment, containing one or more 'user configurable' Field Programmable Logic Devices (FPLDs), see 3A502.i.";

(d) after entry 3A001.a.9., insert—

"*N.B.:*

For integrated circuits, having one or more digital processing units having a 'Total Processing Performance' ('TPP') of 6 000 or more, see 3A501.a.16.";

(e) after entry 3A234, insert—

"3A501 Electronic items, as follows:

a. General purpose integrated circuits, as follows:

15. Complementary Metal Oxide Semiconductor (CMOS) integrated circuits, not specified in 3A001.a.2., designed to operate at an ambient temperature equal to or less (better) than 4,5 K (-268,65°C).

Technical Note:
For the purposes of 3A501.a.15., CMOS integrated circuits are also referred to as cryogenic CMOS or cryoCMOS integrated circuits.

16. Integrated circuits having one or more digital processing units having a 'Total Processing Performance' ('TPP') of 6 000 or more.

N.B.:
For "digital computers" and "electronic assemblies" containing integrated circuits specified in 3A501.a.16., see 4A507.

Technical Notes:
For the purposes of 3A501.a.16.:

1. 'Total processing performance' ('TPP') is 2 x 'MacTOPS' x 'bit length of the operation', aggregated over all processing units on the integrated circuit.

a. 'MacTOPS' is the theoretical peak number of tera (10^{12}) operations per second for multiply-accumulate computation, D=AxB+C).

b. The 2 in the 'TPP' formula is based on the industry convention of counting one multiply-accumulate computation, D=AxB+C, as 2 operations for the purpose of datasheets. Therefore, 2 x MacTOPS may correspond to the reported TOPS or FLOPS on a datasheet.

c. 'Bit length of the operation' for a multiply-accumulate computation is the largest bit-length of the inputs to the multiply operation.

d. Aggregate the TPPs for each processing unit on the integrated circuit to arrive at a total. 'TPP' = TPP1 + TPP2 +... + TPPn (where n is the number of processing units on the integrated circuit).

2. The rate of 'MacTOPS' is to be calculated at its maximum value theoretically possible. The rate of 'MacTOPS' is assumed to be the highest value the manufacturer claims in a manual or brochure for the integrated circuit. For example, the 'TPP' threshold of 6 000 can be met with 750 tera integer operations (or 2 x 375 'MacTOPS') at 8 bits or 300 tera FLOPS (or 2 x 150 'MacTOPS') at 16 bits. If the IC is designed for MAC computation with multiple bit lengths that achieve different 'TPP' values, the highest 'TPP' value should be evaluated against parameters in 3A501.a.16.

3. For integrated circuits, specified in 3A501.a.16., that provide processing of both sparse and dense matrices, the 'TPP' values are the values for processing of dense matrices (e.g., without sparsity).

b. Microwave or millimetre wave items as follows:

13. Parametric signal amplifiers having all of the following:

a. Designed for operation at an ambient temperature below 1 K (-272,15ºC);

b. Designed for operation at any frequency from 2 GHz up to and including 15 GHz; and

c. A noise figure less (better) than 0,015 dB at any frequency from 2 GHz up to and including 15 GHz at 1 K (-272,15ºC);

Note:
Parametric signal amplifiers include Travelling Wave Parametric Amplifiers (TWPAs).

Technical Note:
For the purposes of 3A501.b.13., parametric signal amplifiers may also be referred to as Quantum-Limited Amplifiers (QLAs).

3A502 General purpose "electronic assemblies", modules and equipment, as follows:

i. “Electronic assemblies”, modules or equipment, containing one or more 'user configurable' Field Programmable Logic Devices (FPLDs) and having an ‘aggregate lookup table input count' of greater than or equal to 1 800 000.

N.B.:

For items having FPLDs that are combined with an Analogue-to-Digital Converter (ADC), rated for extended operating temperatures or are radiation hardened, or have cryptographic functionality, see 3A002.h., 4A001.a., and 5A002.a. respectively.

Technical Notes:
For the purposes of 3A502.i.:

1. 'User configurable' means a user can configure or modify the logic cells or interconnects between logic cells within the FPLD logic fabric to prescribe the specific function that the 3A502.i. item performs.

2. 'Aggregate lookup table input count' is the sum of the number of independent inputs available to each programmable Lookup Table (LUT), as accumulated across all physical LUTs contained within a FPLD or other programmable item. An example is: a circuit board containing 2 FPGAs, each having 150 000 programmable LUTs with 6 inputs, would have an 'aggregate lookup table input count' of 2 x 150 000 x 6 = 1 800 000.

3A504 Cryogenic cooling systems and components, as follows:

a. Systems rated to provide a cooling power greater than or equal to 600 μW at or below a temperature of 0,1 K (-273,05°C) for a period of greater than 48 hours;

b. Two-stage pulse tube cryocoolers rated to maintain a temperature below 4 K (-269,15°C) and provide a cooling power greater than or equal to 1,5 W at or below a temperature of 4,2 K (-268,95°C).".

(3) In the section headed 3B Test, Inspection and Production Equipment—

(a) after entry 3B001.a., insert—

"*N.B.:*

For equipment designed for epitaxial growth of silicon (Si) or silicon germanium (SiGe), see 3B501.a.4.";

(b) after entry 3B001.f.1., insert—

"*N.B.:*

SEE ALSO 3B501.f.";

(c) after entry 3B001.g., insert—

"*N.B.:*

SEE ALSO 3B501.l.";

(d) after entry 3B002, insert—

"3B501 Equipment for the manufacturing of semiconductor devices or materials, as follows and specially designed components and accessories therefor:

a. Equipment designed for epitaxial growth as follows:

1. Not used;

2. Not used;

3. Not used;

4. Equipment designed for epitaxial growth of silicon (Si) or silicon germanium (SiGe), and having all of the following:

a. At least one preclean chamber designed to provide a surface preparation means to clean the surface of the wafer; and

b. An epitaxial deposition chamber designed to operate at a temperature below 958 K (685°C);

Note:
3B501.a.4. includes Atomic Layer Epitaxy (ALE) equipment.

b. Not used;

c. Not used;

d. Not used;

e. Not used;

f. Lithography equipment as follows:

1. Align and expose step and repeat (direct step on wafer) or step and scan (scanner) lithography equipment for wafer processing, not specified in 3B001.f., using photo-optical or X-ray methods, and having any of the following:

a. A light source wavelength shorter than 193 nm; or

b. Having all of the following:

1. A light source wavelength equal to or longer than 193 nm;

2. Capable of producing a pattern with a 'Minimum Resolvable Feature size' ('MRF') of 45 nm or less; and

3. A maximum 'dedicated chuck overlay' value of less than or equal to 1,5 nm;

Technical Notes:
For the purposes of 3B501.f.1.b.:

1. The 'Minimum Resolvable Feature size' ('MRF') is calculated by the following formula:

$$'MRF' = \frac{(an\ exposure\ light\ source\ wavelength\ in\ nm) \times (K\ factor)}{maximum\ numerical\ aperture}$$

where the K factor = 0,25

'MRF' is also known as resolution.

2. *'Dedicated chuck overlay' is the alignment accuracy of a new pattern to an existing pattern printed on a wafer by the same lithographic system.*
'Dedicated chuck overlay' is also known as single machine overlay.

N.B.:
SEE ALSO 3B001.f.1.

g. Not used;

h. Not used;

i. Not used;

j. Not used;

k. Equipment designed for dry etching having any of the following:

1. Equipment designed or modified for isotropic dry etching, having a largest 'silicon germanium-to-silicon (SiGe:Si) etch selectivity' of greater than or equal to 100:1; or

2. Equipment designed or modified for anisotropic dry etching, having all of the following:

a. Radio Frequency (RF) power source(s) with at least one pulsed RF output;

b. One or more fast gas switching valve(s) with switching time less than 300 ms; and

c. Electrostatic chuck with 20 or more individually controllable variable temperature elements;

Note 1.:
3B501.k. includes etching by 'radicals', ions, sequential reactions or non-sequential reactions.

Note 2.:
3B501.k. includes etching using RF pulse excited plasma, pulsed duty cycle excited plasma, pulsed voltage on electrodes modified plasma, cyclic injection and purging of gases combined with a plasma, plasma atomic layer etching or plasma quasiatomic layer etching.

Technical Notes:
For the purposes of 3B501.k.:

1. *'Silicon germanium-to-silicon (SiGe:Si) etch selectivity' is measured for a Ge concentration of greater than or equal to 30% ($Si_{0,7}$ $Ge_{0,3}$).*

2. *'Radical' is defined as an atom, molecule or ion that has an unpaired electron in an open electron shell configuration.*

l. 'Extreme Ultraviolet' ('EUV') masks and 'EUV' reticles, designed for integrated circuits, not specified in 3B001.g., and having a mask "substrate blank" specified in 3B001.j.;

Technical Notes:

1. For the purposes of 3B501.l., masks or reticles with a mounted pellicle are considered masks and reticles.

2. For the purposes of 3B501.l., 'Extreme Ultraviolet' ('EUV') means electromagnetic spectrum wavelengths greater than 5 nm and less than 124 nm.

m. 'Pellicles' specially designed for 'Extreme Ultraviolet' ('EUV') lithography;

Technical Notes:

1. For the purposes of 3B501.m., a 'pellicle' is a membrane integrated with a frame, designed to protect a mask or reticle from particle contamination.

2. For the purposes of 3B501.m., 'Extreme Ultraviolet' ('EUV') means electromagnetic spectrum wavelengths greater than 5 nm and less than 124 nm.

n. Semiconductor manufacturing deposition equipment as follows:

1. Atomic Layer Deposition (ALD) equipment as follows:

a. Equipment designed for the deposition of tungsten to fill an entire interconnect or in a channel less than 40 nm wide;

b. Equipment designed for 'area selective deposition' of a metal or metal nitride sidewall barrier using an organometallic compound precursor;

Technical Note:
For the purposes of 3B501.n.1.b., 'area selective deposition' refers to the deposition of material on the sidewall but not the bottom of a feature.

c. Equipment designed for the deposition of a 'work function metal' composed of titanium aluminium carbide (TiAlC) and having a work function greater than 4 eV, and having all of the following:

1. More than one metal source of which one is functioning as an aluminium precursor source; and

2. A precursor vessel designed to operate at a temperature greater than or equal to 303,15 K (30°C);

Technical Note:

For the purposes of 3B501.n.1.c., 'work function metal' is a material that controls the threshold voltage of a transistor.

2. Equipment designed for cobalt electroplating or cobalt electroless-plating deposition processes;

3. Equipment designed for Chemical Vapour Deposition (CVD) of cobalt fill metal;

4. Equipment designed for 'selective bottom-up' Chemical Vapour Deposition (CVD) of tungsten fill metal;

   Technical Note:
   For the purposes of 3B501.n.4., 'selective bottom-up' refers to the preferential deposition of material on the bottom relative to the sidewall.

5. Equipment designed for void-free plasma enhanced deposition of a layer with a dielectric constant less than 3,3, in 'gaps' having an 'aspect ratio' equal to or greater than 1:1 and a width less than 25 nm;

   Technical Notes:
   For the purposes of 3B501.n.5.:

   1. A 'gap' is the space between metal lines.

   2. The 'aspect ratio' (depth : width) is defined as the ratio of the depth to the width of the gap between the metal lines.

6. Equipment designed for the deposition of a ruthenium layer using an organometallic compound precursor, while maintaining the wafer substrate at a temperature greater than 293,15 K (20°C) and less than 773,15 K (500°C);

7. Equipment designed for multistep processing in multiple chambers and maintaining high vacuum or inert environment during transfer between process steps, as follows:

   a. Equipment designed to fabricate a metal contact by performing all of the following processes:

      1. Surface treatment plasma process using hydrogen, hydrogen and nitrogen, or ammonia, while maintaining the wafer substrate at a temperature greater than 373,15 K (100°C) and less than 773,15 K (500°C);

      2. Surface treatment plasma process using oxygen or ozone, while maintaining the wafer substrate at a temperature greater than 313,15 K (40°C) and less than 773,15 K (500°C); and

3. Deposition of a tungsten layer while maintaining the wafer substrate at a temperature greater than 373,15 K (100°C) and less than 773,15 K (500°C);

b. Equipment designed to fabricate a metal contact by performing all of the following processes:

1. Surface treatment plasma process using a remote plasma generator and an ion filter; and

2. Deposition of a cobalt layer selectively onto copper using an organometallic compound precursor;

c. Equipment designed to fabricate a metal contact by performing all of the following processes:

1. Deposition of a titanium nitride or tungsten carbide layer, using an organometallic compound precursor, while maintaining the wafer substrate at a temperature greater than 293,15 K (20°C) and less than 773,15 K (500°C);

2. Deposition of a cobalt layer using a physical sputter deposition technique and having a process pressure greater than $1,33x10^{-1}$ Pa (1 mTorr) and less than $1,33x10^{1}$ Pa (100 mTorr), while maintaining the wafer substrate at temperature less than 773,15 K (500°C); and

3. Deposition of a cobalt layer using an organometallic compound precursor and having a process pressure greater than $1,33x10^{2}$ Pa (1 Torr) and less than $1,33x10^{4}$ Pa (100 Torr), while maintaining the wafer substrate at temperature greater than 293,15 K (20°C) and less than 773,15 K (500°C);

d. Equipment designed to fabricate copper interconnects by performing all of the following processes:

1. Deposition of a cobalt or ruthenium layer using an organometallic compound precursor and having a process pressure greater than $1,33x10^{2}$ Pa (1 Torr) and less than $1,33x10^{4}$ Pa (100 Torr), while maintaining the wafer substrate at a temperature greater than 293,15 K (20°C) and less than 773,15 K (500°C); and

2. Deposition of a copper layer using a physical vapour deposition technique having a process pressure greater than $1,33x10^{-1}$ Pa (1 mTorr) and less than $1,33x10^{1}$ Pa (100 mTorr), while maintaining the wafer substrate at a temperature less than 773,15 K (500°C);

8. Equipment designed to fabricate a metal contact by multistep processing within a single chamber by performing all of the following:

a. Deposition of a tungsten layer, using an organometallic compound precursor, while maintaining the wafer substrate temperature greater than 373,15 K (100°C) and less than 773,15 K (500°C); and

b. Surface treatment plasma process using hydrogen, hydrogen and nitrogen, or ammonia (NH_3).

3B503 Scanning Electron Microscope (SEM) equipment designed for imaging semiconductor devices or integrated circuits, having all of the following:

a. Stage placement accuracy less (better) than 30 nm;

b. Stage positioning measurement performed using laser interferometry;

c. Position calibration within a Field-Of-View (FOV) based on laser interferometer length-scale measurement;

d. Collection and storage of images having more than 2 x 10^8 pixels;

e. FOV overlap of less than 5% in vertical and horizontal directions;

f. Stitching overlap of FOV less than 50 nm; and

g. Accelerating voltage more than 21 kV;

Note 1.:
3B503 includes SEM equipment designed for chip design recovery.

Note 2.:
3B503 does not control SEM equipment designed to accept a Semiconductor Equipment and Materials International (SEMI) standard wafer carrier, such as a 200 mm or larger Front Opening Unified Pod (FOUP).

3B504 Cryogenic wafer probing equipment having all of the following:

a. Designed to test devices at temperatures less than or equal to 4,5 K (-268,65°C); and

b. Designed to accommodate wafer diameters greater than or equal to 100 mm.”.

(4) In the section headed 3C Materials—

(a) in entry 3C001, for "in PL9013.b. in Schedule 3 to the Export Control Order 2008," substitute "in 3C507,";

(b) in the N.B. to entry 3C005.b., for "'substrate'" substitute ""substrate"";

(c) after entry 3C006, insert—

"3C507 Epitaxial materials consisting of a "substrate" having at least one epitaxially grown layer of any of the following:

a. Silicon having an isotopic impurity less than 0,08% of silicon isotopes other than silicon-28 or silicon-30; or

b. Germanium having an isotopic impurity less than 0,08% of germanium isotopes other than germanium-70, germanium-72, germanium-74, or germanium-76.

3C508 Fluorides, hydrides, or chlorides of silicon or germanium, containing any of the following:

a. Silicon having an isotopic impurity less than 0,08% of silicon isotopes other than silicon-28 or silicon-30; or

b. Germanium having an isotopic impurity less than 0,08% of germanium isotopes other than germanium-70, germanium-72, germanium-74, or germanium-76.

3C509 Silicon, silicon oxides, germanium or germanium oxides, containing any of the following:

a. Silicon having an isotopic impurity less than 0,08% of silicon isotopes other than silicon-28 or silicon-30; or

b. Germanium having an isotopic impurity less than 0,08% of germanium isotopes other than germanium-70, germanium-72, germanium-74, or germanium-76.

Note:
3C509 includes "substrates", lumps, ingots, boules and preforms.".

(5) In the section headed 3D Software—

(a) in entry 3D001, after "3A002.h.", insert ", 3A501.b.13.";

(b) in entry 3D002, for "3B001.a. to f., 3B002 or 3A225" substitute "3A225, 3B001.a. to 3B001.f., 3B002, 3B501.a.4., 3B501.f.1., 3B501.k. or 3B501.n.";

(c) after entry 3D225, insert—

"3D507 "Software" designed to extract 'GDSII' or equivalent standard layout data and perform layer-to-layer alignment from Scanning Electron Microscope (SEM) images, and generate multi-layer 'GDSII' data or the circuit netlist.

Technical Note:
For the purposes of 3D507, 'GDSII' ('Graphic Design System II') is a database file format for data exchange of integrated circuit artwork or integrated circuit layout artwork.".

(6) In the section headed 3E Technology, after entry 3E225, insert—

"3E505 "Technology" according to the General Technology Note for the "development"or "production" of integrated circuits or devices, using "Gate-All-Around Field-Effect Transistor" ("GAAFET") structures.

Note 1.:
3E505 includes 'process recipes'.

Note 2.:
3E505 does not control tool qualification or maintenance.

Note 3.:
3E505 does not control 'Process Design Kits' ('PDKs') unless they include libraries implementing functions or technologies for items specified in 3A001 or 3A501.

Technical Notes:

1. For the purposes of 3E505, a 'process recipe' is a set of conditions and parameters for a particular process step.

2. For the purposes 3E505, a 'Process Design Kit' ('PDK') is a software tool provided by a semiconductor manufacturer to ensure that the required design practices and rules are taken into account in order to successfully produce a specific integrated circuit design in a specific semiconductor process, in accordance with technological and manufacturing constraints (each semiconductor manufacturing process has its particular 'PDK').".

Amendments to Category 4 - Computers

10.—(1) The section headed Category 4 - Computers is amended as follows.

(2) In the section headed 4A Systems, Equipment and Components, after entry 4A102, insert—

"4A506 Quantum computers and related "electronic assemblies" and components therefor, as follows:

a. Quantum computers as follows:

1. Quantum computers supporting 34 or more, but fewer than 100, 'fully controlled', 'connected' and 'working' 'physical qubits', and having a 'C-NOT error' of less than or equal to 10^{-4};

2. Quantum computers supporting 100 or more, but fewer than 200, 'fully controlled', 'connected' and 'working' 'physical qubits', and having a 'C-NOT error' of less than or equal to 10^{-3};

3. Quantum computers supporting 200 or more, but fewer than 350, 'fully controlled', 'connected' and 'working' 'physical qubits', and having a 'C-NOT error' of less than or equal to 2×10^{-3};

4. Quantum computers supporting 350 or more, but fewer than 500, 'fully controlled', 'connected' and 'working' 'physical qubits', and having a 'C-NOT error' of less than or equal to 3×10^{-3};

5. Quantum computers supporting 500 or more, but fewer than 700, 'fully controlled', 'connected' and 'working' 'physical', and having a 'C-NOT error' of less than or equal to 4 x 10^{-3};

6. Quantum computers supporting 700 or more, but fewer than 1 100, 'fully controlled', 'connected' and 'working' 'physical qubits', and having a 'C-NOT error' of less than or equal to 5 x 10^{-3};

7. Quantum computers supporting 1 100 or more, but fewer than 2 000, 'fully controlled', 'connected' and 'working' 'physical qubits', and having a 'C-NOT error' of less than or equal to 6 x 10^{-3};

8. Quantum computers supporting 2 000 or more 'fully controlled', 'connected' and 'working' 'physical qubits';

b. Qubit devices and qubit circuits, containing or supporting arrays of 'physical qubits', and specially designed for items specified in 4A506.a.;

c. Quantum control components and quantum measurement devices, specially designed for items specified in 4A506.a.;

Note 1.:
4A506 controls circuit model (or gate-based) and one-way (or measurement-based) quantum computers. This entry does not apply to adiabatic (or annealing) quantum computers.

Note 2.:
Items specified in 4A506 may not necessarily physically contain any qubits. For example, quantum computers based on photonic schemes do not permanently contain a physical item that can be identified as a qubit. Instead, the photonic qubits are generated while the computer is operating and then later discarded.

Note 3.:
Items specified in 4A506.b. include semiconductor, superconducting, and photonic qubit chips and chip arrays; surface ion trap arrays; other qubit confinement technologies; and coherent interconnects between such items.

Note 4.:
4A506.c. controls items designed for calibrating, initialising, manipulating or measuring the resident qubits of a quantum computer.

Technical Notes:
For the purposes of 4A506:

1. A 'physical qubit' is a two-level quantum system used to represent the elementary unit of quantum logic by means of manipulations and measurements that are not error corrected. 'Physical qubits' are distinguished from logical qubits, in that logical qubits are error corrected qubits comprised of many 'physical qubits'.

2. 'Fully controlled' means the 'physical qubit' can be calibrated, initialised, gated, and read out, as necessary.

3. *'Connected' means that two-qubit gate operations can be performed between any arbitrary pair of the available 'working' 'physical qubits'. This does not necessarily entail all-to-all connectivity.*

4. *'Working' means that the 'physical qubit' performs universal quantum computational work according to the system specifications for qubit operational fidelity.*

5. *Supporting 34 or more 'fully controlled', 'connected', 'working' 'physical qubits' refers to the capability of a quantum computer to confine, control, measure and process the quantum information embodied in 34 or more 'physical qubits'.*

6. *'C-NOT error' is the average physical gate error for the nearest neighbour two-'physical qubit' Controlled-NOT (C-NOT) gates.*

4A507 Computers, "electronic assemblies" and components containing one or more integrated circuits specified in 3A501.a.16.

Note:
4A507 includes "digital computers" and hybrid computers.".

(3) In the section headed 4D Software—

(a) in entry 4D001.a., for "4A001 to 4A004, or 4D" substitute "4A001 to 4A005, 4A507 or 4D";

(b) at the end of entry 4D001.b.2., insert—

"3. Items specified in 4A506.b. or 4A506.c.".

(4) In the section headed 4E Technology—

(a) in entry 4E001.a., for "4A" substitute "4A001, 4A003, 4A004, 4A005, 4A101, 4A102, 4A507";

(b) at the end of entry 4E001.b.2., insert—

"3. Items specified in 4A506.b. or 4A506.c.".

Amendments to Category 6 - Sensors and Lasers

11. In the section headed 6A Systems, Equipment and Components, in the Technical Note to Note 3.b.1. to entry 6A003.b.4., after "'Instantaneous Field of View (IFOV)", insert "".

Amendments to Category 7 - Navigation and Avionics

12. In the section headed 7A Systems, Equipment and Components, in entry 7A105.a., for "unmanned aerial vehicles" substitute ""Unmanned Aerial Vehicles" ("UAVs") capable of a range of 300 km,".

Amendments to Category 9 - Aerospace and Propulsion

13. In the section headed 9A Systems, Equipment and Components—

(a) omit the Technical Note to entry 9A008.a.;

(b) in entry 9A112, for "aerial vehicles", in each place those words occur, substitute "Aerial Vehicles";

(c) in entry 9A115.a., for "unmanned aerial vehicle", in both places those words occur, substitute ""Unmanned Aerial Vehicle" ("UAV")";

(d) in entry 9A118, for "unmanned aerial vehicles" substitute ""Unmanned Aerial Vehicles ("UAVs") capable of a range of 300 km";

(e) in entry 9A119, for "unmanned aerial vehicles" substitute ""Unmanned Aerial Vehicles ("UAVs")";

(f) in entry 9A350, for "unmanned aerial vehicles", in both places those words occur, substitute ""Unmanned Aerial Vehicles ("UAVs")".

PART 4

AMENDMENTS TO REGULATION (EU) 2019/125

Amendments to Regulation (EU) 2019/125

14. Regulation (EU) 2019/125 of the European Parliament and of the Council of 16 January 2019 concerning trade in certain goods which could be used for capital punishment, torture or other cruel, inhuman or degrading treatment or punishment (codification) is amended in accordance with regulations 15 to 17.

Amendment to Article 2 (Definitions)

15. In Article 2 (Definitions), at the end, insert the following definition—

""ordinary handcuffs" means handcuffs which meet all the following conditions:

(i) their overall dimension including chain, measured from the outer edge of one cuff to the outer edge of the other cuff, is between 150 and 280 mm when both cuffs are locked;

(ii) the inside circumference of each cuff is a maximum of 165 mm when the ratchet is engaged at the last notch entering the locking mechanism;

(iii) the inside circumference of each cuff is a minimum of 200 mm when the ratchet is engaged at the first notch entering the locking mechanism; and

(iv) the cuffs have not been modified to cause physical pain or suffering.".

Amendments to Annex II (list of goods referred to in Articles 3 and 4)

16. In Annex II (list of goods referred to in Articles 3 and 4), after the Introductory Note, Notes and the NB, for the table substitute—

"**Commodity code**	**Description**
1. Goods designed for the execution of human beings, as follows:	
ex 4421 99 ex 8208 90 00	1.1. Gallows, guillotines, and blades for guillotines.
ex 8543 70 90 ex 9401 79 00 ex 9401 80 00 ex 9402 10 00	1.2. Electric chairs for the purpose of execution of human beings.

ex 9406 20 00 ex 9406 90 38 ex 9406 90 90	1.3. Airtight vaults, made of e.g., steel and glass, designed for the purpose of execution of human beings by the administration of a lethal gas or substance.
ex 8413 81 00 ex 9018 90 50 ex 9018 90 60 ex 9018 90 84	1.4. Automatic drug injection systems designed for the purpose of execution of human beings by the administration of a lethal chemical substance.
2. Goods which are not suitable for use by law enforcement authorities to restrain human beings, as follows:	
ex 8543 70 90	2.1. Electric shock devices which are intended to be worn on the body by a restrained individual, such as belts, sleeves, and cuffs, designed for restraining human beings by the administration of electric shocks.
ex 7326 90 98 ex 7616 99 90 ex 8301 50 00 ex 3926 90 97 ex 4203 30 00 ex 4203 40 00 ex 4205 00 90 ex 4017 00 00	2.2. Thumb-cuffs, finger-cuffs, thumbscrews, and finger-screws. Note: This item includes both serrated and non-serrated cuffs and screws.
ex 7326 90 98 ex 7616 99 90 ex 8301 50 00 ex 3926 90 97 ex 4203 30 00 ex 4203 40 00 ex 4205 00 90 ex 6217 10 00 ex 6307 90 98 ex 4017 00 00	2.3. Bar fetters, weighted leg restraints and gang chains comprising bar fetters or weighted leg restraints. Notes: 1. Bar fetters are shackles or ankle rings fitted with a locking mechanism, linked by a rigid bar which is typically made of metal. 2. This item includes bar fetters and weighted leg restraints which are linked to ordinary handcuffs by means of a chain.
ex 7326 90 98 ex 7616 99 90 ex 8301 50 00 ex 3926 90 97 ex 4203 30 00 ex 4203 40 00 ex 4205 00 90 ex 6217 10 00 ex 6307 90 98 ex 7315 81 00 ex 7315 82 00 ex 7315 89 00 ex 4017 00 00	2.4. Gang chains. Note: Gang chains comprise multiple pairs of handcuffs, leg cuffs, belly chains, or a combination of these, attached to a single chain (often made of metal), restraining several people together in a chain.
ex 7326 90 98 ex 7616 99 90	2.5. Leg irons. Note:

ex 7315 81 00 ex 7315 82 00 ex 7315 89 00	Leg irons are non-adjustable metal rings or other non-adjustable metal restraints that are fixed around a prisoner's ankles, normally by means of a bolt or screw arrangement. They can be hinged or unhinged and are normally linked with a chain. (They are distinct from leg cuffs which can be adjusted on a detainee's ankle (Annex III, 1.3.)).
ex 7326 90 98 ex 7616 99 90 ex 8301 50 00 ex 3926 90 97 ex 4203 30 00 ex 4203 40 00 ex 4205 00 90 ex 6217 10 00 ex 6307 90 98 ex 4017 00 00	2.6. Cuffs for restraining human beings, designed to be anchored to a wall, floor or ceiling.
ex 9401 61 00 ex 9401 69 00 ex 9401 71 00 ex 9401 79 00 ex 9401 80 00 ex 9402 10 00	2.7. Restraint chairs: chairs fitted with shackles or other devices to restrain a human being. Note: This item does not prohibit chairs only fitted with straps or belts.
ex 9402 90 00 ex 9403 20 80 ex 9403 50 00 ex 9403 60 00 ex 9403 89 00	2.8. Shackle boards and shackle beds: boards and beds fitted with shackles or other devices to restrain a human being. Note: This item does not prohibit boards and beds only fitted with straps or belts.
ex 9402 90 00 ex 9403 50 00 ex 9403 60 00 ex 9403 70 00 ex 9403 89 00	2.9. Cage beds: beds comprising a cage (four sides and a ceiling) or similar structure enclosing a human being within the confines of the bed, the ceiling or one or more of the sides of which are fitted with metal or other bars, and which can only be opened from outside.
ex 9402 90 00 ex 9403 20 20 ex 9403 50 00 ex 9403 60 90 ex 9403 70 00 ex 9403 89 00	2.10. Net beds: beds comprising a cage (four sides and a ceiling) or similar structure enclosing a human being within the confines of the bed, the ceiling or one or more sides of which are fitted with nets, and which can only be opened from outside.
ex 6505 00 10 ex 6505 00 90 ex 6506 91 00 ex 6506 99 10 ex 6506 99 90 ex 6217 10 00 ex 6307 90 98	2.11. Hoods and blindfolds solely designed for law enforcement purposes to block the vision and/or enclose the face of a person/detainee, including such hoods and blindfolds when linked by a chain to ordinary handcuffs or other restraints. Note: This item does not include spit hoods which are controlled in Annex III 1.4.

3. Portable devices which are not suitable for use by law enforcement authorities for the purpose of riot control or self-protection, as follows:	
ex 9304 00 00	3.1. Batons or truncheons made of metal or other material having a shaft with metal spikes.
ex 7326 90 98 ex 4205 00 90 ex 6602 00 00 ex 7326 90 98 ex 7806 00 80 ex 4203 29 90 ex 4015 19 00	3.2. Weighted batons or batons encased in thick leather or rubber with additional weighting designed to increase kinetic impact to the target, and weighted gloves or other similar devices. Note: 1. Weighted baton: A flat device consisting of metal (spring steel) encased in thick leather or rubber and used for slapping or striking a person; or a short baton consisting of spring steel encased in leather, sometimes weighted at one end with lead shot, and used for striking a person. 2. Weighted gloves are usually made of leather and have powdered steel or lead sewn into the material over the knuckle, fingers, or back of the hand.
ex 4421 91 00 ex 4421 99 99 ex 3926 90 97 ex 6602 00 00	3.3. Lathis. Note: Lathis are long flexible batons (over 1m long), traditionally made of wood or bamboo but also polycarbonate of the kind used as a weapon by police officers.
ex 3926 90 97 ex 7326 90 98	3.4. Shields with metal spikes.
ex 3926 20 00 ex 7326 90 98 ex 7616 99 90 ex 4017 00 00	3.5. Body armour with spikes or serrations made of metal or other hard material. Note: This item does not control body armours with load-bearing systems featuring parts made of metal or other hard material used to attach or carry equipment.
4. Whips as follows:	
ex 6602 00 00	4.1. Whips comprising multiple lashes or thongs, such as knouts or cats o'nine tails.
ex 6602 00 00	4.2. Whips having one or more lashes or thongs fitted with barbs, hooks, spikes, metal wire or similar objects enhancing the impact of the lash or thong.
ex 6602 00 00	4.3. Sjamboks. Note: This item alludes to a type of heavy whip, traditionally made of leather, or of other materials, such as plastic. This item does not cover instruments traditionally used for herding animals.

5. Weapons and equipment disseminating incapacitating or irritating chemicals or impact projectiles and related ammunition which are not suitable for use by law enforcement authorities for the purpose of riot control or self-protection.	
ex 8424 20 00 ex 8424 89 70 ex 9304 00 00	5.1. Fixed equipment for the dissemination of incapacitating or irritating chemical substances in enclosed spaces, which can be attached to a wall or to a ceiling inside a building, comprises a canister of irritating or incapacitating chemical agents and is activated using a remote-control system. Note: This item alludes to equipment or devices of the kind used in prisons and other places of detention. It does not prohibit fixed equipment designed for the dissemination of blinding substances (such as water vapour or fog), that do not cause direct physical harm, used in commercial or private enclosed spaces for the purpose of burglary prevention.
ex 9301 10 00 ex 9301 20 00 ex 9301 90 00 ex 9302 00 00 ex 9303 10 00 ex 9303 20 10 ex 9303 20 95 ex 9303 30 00 ex 9303 90 00 ex 9304 00 00 ex 9306 21 00 ex 9306 29 00 ex 9306 30 10 ex 9306 30 30 ex 9306 30 90 ex 9306 90 10 ex 9306 90 90	5.2. Equipment and explosive projectiles for dispensing injurious quantities of riot control agents from aerial platforms. Note: This item does not control smoke grenades and does not control aerial platforms as such. This item includes equipment where the mode of dispersal is inherently inaccurate, or the equipment or projectiles are able to disperse amounts of riot control agent that are injurious.”.

Amendments to Annex III (list of goods referred to in Article 11)

17. In Annex III (list of goods referred to in Article 11), after the Introductory Note and Notes, for the table substitute—

“**Commodity code**	**Description**
1. Goods designed for restraining human beings, as follows:	
ex 7326 90 98 ex 7616 99 90 ex 8301 50 00 ex 3926 90 97 ex 4203 30 00 ex 4203 40 00 ex 4205 00 90 ex 6217 10 00	1.1. Shackles. Notes: 1. Shackles are restraints consisting of two cuffs or rings fitted with a locking mechanism, with a connecting chain or bar. 2. This item does not control the leg restraints and gang chains prohibited by item 2.3 and 2.4 of Annex II. 3. This item does not control ordinary handcuffs.

ex 6307 90 98 ex 7315 81 00 ex 7315 82 00 ex 7315 89 00 ex 4017 00 00	
ex 7326 90 98 ex 7616 99 90 ex 8301 50 00 ex 3926 90 97 ex 4203 30 00 ex 4203 40 00 ex 4205 00 90 ex 6217 10 00 ex 6307 90 98 ex 4017 00 00	1.2. Individual cuffs or rings fitted with a locking mechanism, having an inside circumference exceeding 165 mm when the ratchet is engaged at the last notch entering the locking mechanism. Note: This item includes neck restraints and other individual cuffs or rings fitted with a locking mechanism, which are linked to ordinary handcuffs by means of a chain.
ex 7326 90 98 ex 7616 99 90 ex 8301 50 00 ex 3926 90 97 ex 4203 30 00 ex 4203 40 00 ex 4205 00 90 ex 6217 10 00 ex 6307 90 98 ex 7315 81 00 ex 7315 82 00 ex 7315 89 00 ex 4017 00 00	1.3. Leg cuffs. Notes: 1. Leg cuffs are restraints consisting of two cuffs, usually made of metal, fastened around the ankles, and attached by a chain to allow the detainee some movement. The cuff size is usually larger than those ordinary handcuffs and is adjustable. 2. This item does not control leg restraints and gang chains prohibited by items 2.3., 2.4., 2.5. and 2.6. of Annex II.
ex 6505 00 10 ex 6505 00 90 ex 6506 91 00 ex 6506 99 10 ex 6506 99 90	1.4. Spit hoods: hoods, including hoods made of netting, comprising a cover of the mouth which prevents spitting. Note: This item includes spit hoods which are linked to ordinary handcuffs by means of a chain.
2. Weapons and devices designed for the purpose of law enforcement including riot control or self-protection, as follows:	
ex 8543 70 90 ex 9304 00 00	2.1. Portable electric discharge weapons that can target only one individual each time an electric shock is administered, including but not limited to electric shock batons, electric shock shields, stun guns and electric shock dart guns. Notes: 1. This item does not control electric shock belts and other devices falling within item 2.1. of Annex II. 2. This item does not control individual electronic shock devices when accompanying their user for the user's own personal protection.
ex 8543 90 00 ex 9305 99 00	2.2. Kits containing all essential components for assembly of portable electric discharge weapons controlled by item 2.1.

	Note: The following goods are considered to be essential components: — the unit producing an electric shock, — the switch, whether or not on a remote control, and — the electrodes or, where applicable, the wires through which the electrical shock is to be administered.
ex 8543 70 90 ex 9304 00 00	2.3. Fixed or mountable electric discharge weapons that cover a wide area and can target multiple individuals with electrical shocks.
ex 9303 90 00 ex 9304 00 00 ex 9306 30 90 ex 9306 90 90	2.4. Single shot kinetic impact projectile (KIP) launchers and associated kinetic impact projectiles. Note: This item includes projectiles commonly known as rubber or plastic bullets or impact rounds, chemical irritant impact projectiles and beanbags. They come in different shapes and sizes, include large and small balls or cylinders, and can be made of rubber, PVC, dense foam, or wood. This item does not control equipment controlled by entries ML1, 2 and 12 of Schedule 2 to the Export Control Order 2008.
ex 9301 10 00 ex 9301 20 00 ex 9301 90 00 ex 9302 00 00 ex 9303 10 00 ex 9303 20 10 ex 9303 20 95 ex 9303 30 00 ex 9303 90 00 ex 9304 00 00	2.5. Launchers and dissemination devices including multiple barrel launchers. Note: This item includes multiple-barrel launchers that typically have between 2 and 36 barrels, and can be stand-alone or mounted onto vehicles, unmanned ground vehicles, or seafaring vessels. The launchers can be manually operated or operated by remote control, allowing for individual, sequential, or simultaneous firing of kinetic impact munitions or chemical irritants, resulting in rapid fire or bursts of fire. This item does not control equipment controlled by entries ML1 and ML 2 of Schedule 2 to the Export Control Order 2008.
ex 9306 21 00 ex 9306 29 00 ex 9306 30 10 ex 9306 30 30 ex 9306 30 90 ex 9306 90 10 ex 9306 90 90	2.6. Ammunition containing multiple kinetic impact projectiles. Note: This item includes ammunition that can be made from rubber, plastic, or wood, and can vary in terms of their size, number, and shape. The number included in each can range from a small number of large balls or blocks to hundreds of small pellets. This item does not control equipment controlled by entries ML1 and ML 2 of Schedule 2 to the Export Control Order 2008.
3. Weapons and equipment disseminating incapacitating or irritating chemicals for use by law enforcement authorities for the purpose of riot control or self-protection, as follows:	
ex 8424 20 00 ex 8424 89 70 ex 9304 00 00	3.1. Portable weapons and equipment which either administer a dose of an incapacitating or irritating chemical substance that targets one individual or disseminate a dose of such

	substance affecting a small area, e.g. in the form of a spray fog or cloud, when the chemical substance is administered or disseminated. Notes: 1. This item does not control equipment controlled by entry ML7(e) of Schedule 2 to the Export Control Order 2008. 2. This item does not control individual portable equipment, even if containing a chemical substance, when accompanying their user for the user's own personal protection. 3. In addition to relevant chemical substances, such as riot control agents or PAVA, the goods controlled by items 3.3., 3.4. and 3.7. shall be deemed to be incapacitating or irritating chemical substances.
ex 2939 79 90	3.2. Pelargonic acid vanillylamide (PAVA) (CAS RN 2444-46-4). Note: This item does not control equipment controlled by entry ML7(e) of Schedule 2 to the Export Control Order 2008.
ex 3301 90 30 ex 1302 19 70	3.3. Oleoresin capsicum (OC) (CAS RN 8023-77-6). Note: This item does not control equipment controlled by entry ML7(e) of Schedule 2 to the Export Control Order 2008.
ex 3301 90 30 ex 3302 10 90 ex 3302 90 10 ex 3302 90 90 ex 3824 99 92	3.4. Mixtures containing at least 0.3 % by weight of PAVA or OC and a solvent (such as ethanol,1-propanol or hexane), which could be administered as such as incapacitating or irritating agents, in particular in aerosols and in liquid form, or used for manufacturing of incapacitating or irritating agents. Notes: 1. This item does not control sauces and preparations therefor, soups or preparations therefor and mixed condiments or seasonings, provided that PAVA or OC is not the only constituent flavour in them. 2. This item does not control medicinal products for which a marketing authorisation has been granted in accordance with the Human Medicines Regulations 2012([a]).
ex 8424 20 00 ex 8424 89 70 ex 9304 00 00	3.5. Fixed or mountable equipment for the dissemination of incapacitating or irritating chemical agents that covers a wide area and is not designed to be attached to a wall or to a ceiling inside a building. Notes: 1. This item does not control equipment controlled by entry ML7(e) of Schedule 2 to the Export Control Order 2008. 2. This item also controls water cannons. 3. In addition to relevant chemical substances, such as riot control agents or PAVA, the goods controlled by items

	3.3. and 3.4. shall be deemed to be incapacitating or irritating chemical substances.
ex 9306 21 00 ex 9306 29 00 ex 9306 30 10 ex 9306 30 30 ex 9306 30 90 ex 9306 90 10 ex 9306 90 90	3.6. Large calibre projectiles containing riot control agents. Note: This item includes projectiles containing riot control agents, notably OC and PAVA with a calibre above 56mm.
ex 2934 99 90 ex 2930 90 95 ex 2933 99 20 ex 2921 29 00 ex 2830 90 85 ex 3824 99 92 ex 3824 99 93 ex 3824 99 96	3.7. Malodorant chemical mixtures formulated to produce a foul and deeply unpleasant smell for riot control purposes provided they are non-injurious and have no long-lasting health effects. Notes: 1. This item is defined as being a mixture solely designed for law enforcement purposes containing at least one of the following range of chemicals formulated to produce a foul and deeply unpleasant smell and that can be dispersed by hand-held spray, grenades, launched projectiles, drones, and water cannon: 1. Thioacetone (CAS code 4756-05-2) 2. Allicin (CAS code 539-86-6) 3. Skatole (CAS code 83-34-1) 4. Cadaverine (CAS code 462-94-2) 5. Putrescine (CAS code 110-60-1) 6. Ammonium hydrosulfide (CAS code 12124-99-1) 7. Ethanethiol (CAS code 75-08-1) 8. Propanethiol (CAS code 107-03-9) 9. Isobutylthiol (CAS code 513-44-0) 10. Butanethiol (CAS code 109-79-5). 2. This item does not control malodorant chemical mixtures that are not intended for law enforcement purposes.
(a) S.I. 2012/1916. Regulation 2 defines “medicinal product”. Regulation 8(1), as amended by regulation 7(a)(vi) of the Human Medicines (Amendments relating to the Windsor Framework) Regulations 2024 (S.I. 2024/832) defines “marketing authorisation”.”.	

Chris Bryant
Minister of State
Department for Business and Trade

13th November 2025

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations amend the Export Control Order 2008 (S.I. 2008/3231) ("the 2008 Order"), assimilated Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items (Recast) (EUR 2009/428) ("the assimilated Dual-Use Regulation") and assimilated Regulation (EU) 2019/125 of the European Parliament and of the Council of 16 January 2019 concerning trade in certain goods which could be used for capital punishment, torture or other cruel, inhuman or degrading treatment or punishment (codification) (EUR 2019/125) ("the assimilated Torture Goods Regulation").

Part 2 of these Regulations amends the 2008 Order. Regulation 3 amends the provisions in Schedule 2 to the 2008 Order relating to military goods, software and technology. The amendments reflect updates to controls on the exports of conventional weapons agreed through the multilateral export control regime known as the Wassenaar Arrangements and corrects typographical errors made by S.I. 2025/532. Regulation 4 removes items from the list of UK controlled dual-use goods, software and technology set out in Schedule 3 to the 2008 Order, to remove duplication of controls in Great Britain in the assimilated Dual-Use Regulation further to the amendments made by Part 3 of these Regulations, and in Northern Ireland further to controls introduced by the EU. Regulation 5 moves Azerbaijan and Armenia from the list of countries and destinations embargoed and subject to transit control for military goods, to the list of destinations subject to transit control for Category B goods in Schedule 4 to the 2008 Order, to reflect the lifting of the UK arms embargo on these countries.

Part 3 amends Annex I to the assimilated Dual-Use Regulation, which lists dual-use goods, software and technology subject to export controls. Regulations 7 to 10 amend the dual-use list, in line with UK's commitment with like-minded international partners. Regulation 11 corrects a typographical error made by S.I. 2025/532. Regulations 12 and 13 amend the dual-use list in line with the UK's commitments as a member of the multilateral export control regimes, the Missile Technology Control Regime and the Wassenaar Arrangements.

Part 4 amends Annexes II and III to the assimilated Torture Goods Regulation, which lists certain goods which could be used for capital punishment, torture or other cruel, inhuman or degrading treatment or punishment, which are subject to export controls. These amendments broadly align with similar changes made by the EU to Regulation (EU) 2019/125 (OJ L 030 31.1.2019, p.1).

A full impact assessment has not been produced for this instrument as no, or no significant impact on the private, voluntary or public sectors is foreseen.

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