

SCHEDULES

[^{F1}SCHEDULE 2G

Quantum computing and advanced materials goods and technology

Textual Amendments

- F1** Sch. 2G inserted (5.7.2022) by The Republic of Belarus (Sanctions) (EU Exit) (Amendment) Regulations 2022 (S.I. 2022/748), reg. 1(2), Sch.

PART 2

Quantum computing and advanced materials goods

2. Equipment, “electronic assemblies” and components, specially designed for “quantum computers”, quantum electronics, quantum sensors, quantum processing units, qubit circuits, qubit devices or quantum radar systems.

Note 1: “Quantum computers” perform computations that harness the collective properties of quantum states, such as superposition, interference and entanglement.

Note 2: Units, circuits and devices include but are not limited to superconducting circuits, quantum annealing, ion trap, photonic interaction, silicon/spin and cold atoms.

3. “Cryogenic refrigeration systems” designed to maintain temperatures below 1.1 kelvin for 48 hours or more and related cryogenic refrigeration equipment and components as follows:

- (a) pulse tubes;
- (b) cryostats;
- (c) dewars;
- (d) gas handling systems (GHS);
- (e) compressors;
- (f) control units.

Note: “Cryogenic refrigeration systems” include but are not limited to dilution refrigeration, a diabatic demagnetisation refrigerators and laser cooling systems.

4. Ultra-High vacuum (“UHV”) equipment as follows—

- (a) UHV pumps (sublimation, turbomolecular, diffusion, cryogenic, ion-getter);
- (b) UHV pressure gauges.

Note: UHV means 100 nanoPascals (nPa) or lower

5. High quantum efficiency (“QE”) photodetectors and sources with a QE greater than 80% in the wavelength range exceeding 300 nanometers but not exceeding 1700 nanometers.

6. Manufacturing equipment as follows—

Changes to legislation: There are currently no known outstanding effects for the The Republic of Belarus (Sanctions) (EU Exit) Regulations 2019, PART 2. (See end of Document for details)

- (a) additive manufacturing equipment for the production of metal parts;
- (b) additive manufacturing equipment for “energetic materials”, including equipment using ultrasonic extrusion;
- (c) vat photopolymerisation additive manufacturing equipment using stereo lithography (SLA) or direct light processing (DLP).

Note: Paragraph 6(a) only applies to the following systems—

- (i) *powder-bed systems using selective laser melting (SLM), laser cladding, direct metal laser sintering (DMLS) or electron beam melting (ELB), or*
- (ii) *powder-fed systems using laser cladding, direct energy deposition or laser metal deposition.*

7. Metal powders and metal alloy powders specially designed for the additive manufacturing equipment specified in paragraph 6(a).

8. Microscopes, related equipment and detectors, as follows—

- (a) scanning electron microscopes (SEM);
- (b) scanning auger microscopes;
- (c) transmission electron microscopes (TEM);
- (d) atomic force microscopes (AFM);
- (e) scanning force microscopes (SFM);
- (f) equipment and detectors specially designed for use with the microscopes specified in subparagraphs (a) to (e), employing any of the following—
 - (i) X-ray photo spectroscopy (XPS);
 - (ii) energy-dispersive X-ray spectroscopy (EDX, EDS);
 - (iii) electron back scatter detector (EBSD) systems;
 - (iv) electron spectroscopy for chemical analysis (ESCA).

9. “Decapsulation” equipment for semiconductor devices.

Note: “Decapsulation” means the removal of a cap, lid, or encapsulating material from a packaged integrated circuit by mechanical, thermal, or chemical methods.

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10. “Software” specially designed or modified for the “development”, “production” or “use” of the systems, equipment and components specified in paragraphs 2 to 9.

11. “Software” for digital twins (DT) of additive manufactured products or for the determination of the reliability of additive manufactured products.

12. “Technology” “required” for the “development”, “production” or “use” of the systems, equipment, components and software specified in paragraphs 2 to 11.]

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