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COMMISSION

HIGH REPRESENTATIVE
OF THE UNION FOR
FOREIGN AFFAIRS AND
SECURITY POLICY

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ANNEXES 1 to 10

ANNEXES

to the

Joint Proposal for a

Council Regulation

amending Council Regulation (EU) No 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine

ANNEX I

Annex IV to Regulation (EU) No 833/2014, is replaced by the following:

‘**List of natural or legal persons, entities or bodies, referred to in Article 2(7), 2a(7) and 2b(1)**

JSC Sirius

OJSC Stankoinstrument

OAO JSC Chemcomposite

JSC Kalashnikov

JSC Tula Arms Plant

NPK Technologii Maschinostrojenija

OAO Wysokototschnye Kompleksi

OAO Almaz Antey

OAO NPO Bazalt

Admiralty Shipyard JSC

Aleksandrov Scientific Research Technological Institute NITI

Argut OOO

Communication center of the Ministry of Defense

Federal Research Center Boreskov Institute of Catalysis

Federal State Budgetary Enterprise of the Administration of the President of Russia

Federal State Budgetary Enterprise Special Flight Unit Rossiya of the Administration of the President of Russia

Federal State Unitary Enterprise Dukhov Automatics Research Institute (VNIIA)

Foreign Intelligence Service (SVR)

Forensic Center of Nizhniy Novgorod Region Main Directorate of the Ministry of Interior Affairs

International Center for Quantum Optics and Quantum Technologies (the Russian Quantum Center)

Irkut Corporation

Irkut Research and Production Corporation Public Joint Stock Company

Joint Stock Company Scientific Research Institute of Computing Machinery

JSC Central Research Institute of Machine Building (JSC TsNIIMash)

JSC Kazan Helicopter Plant Repair Service

JSC Shipyard Zaliv (Zaliv Shipbuilding yard)

JSC Rocket and Space Centre – Progress

Kamensk-Uralsky Metallurgical Works J.S. Co.

Kazan Helicopter Plant PJSC

Komsomolsk-na-Amur Aviation Production Organization (KNAAPO)

Ministry of Defence RF

Moscow Institute of Physics and Technology

NPO High Precision Systems JSC

NPO Splav JSC

OPK Oboronprom

PJSC Beriev Aircraft Company

PJSC Irkut Corporation

PJSC Kazan Helicopters

POLYUS Research Institute of M.F. Stelmakh Joint Stock Company

Promtech-Dubna, JSC

Public Joint Stock Company United Aircraft Corporation

Radiotechnical and Information Systems (RTI) Concern

Rapart Services LLC

Rosoboronexport OJSC (ROE)

Rostec (Russian Technologies State Corporation)

Rostekh – Azimuth

Russian Aircraft Corporation MiG

Russian Helicopters JSC

SP KVANT (Sovmestnoe Predpriyatie Kvantovye Tekhnologii)

Sukhoi Aviation JSC

Sukhoi Civil Aircraft

Tactical Missiles Corporation JSC

Tupolev JSC

UEC-Saturn

United Aircraft Corporation

JSC AeroKompozit

United Engine Corporation

UEC-Aviadvigatel JSC

United Instrument Manufacturing Corporation

United Shipbuilding Corporation

JSC PO Sevmash

Krasnoye Sormovo Shipyard

Severnaya Shipyard

Shipyard Yantar

UralVagonZavod

Baikal Electronics

Center for Technological Competencies in Radiophtonics

Central Research and Development Institute Tsiklon

Crocus Nano Electronics

Dalzavod Ship-Repair Center

Elara

Electronic Computing and Information Systems

ELPROM

Engineering Center Ltd.

Forss Technology Ltd.

Integral SPB

JSC Element

JSC Pella-Mash

JSC Shipyard Vympel

Kranark LLC

Lev Anatolyevich Yershov (Ershov)

LLC Center

MCST Lebedev

Miass Machine-Building Factory

Microelectronic Research and Development Center Novosibirsk

MPI VOLNA

N.A. Dollezhal Order of Lenin Research and Design Institute of Power Engineering

Nerpa Shipyard

NM-Tekh

Novorossiysk Shipyard JSC

NPO Electronic Systems

NPP Istok

NTC Metrotek

OAO GosNIIkhimanalit

OAO Svetlovskoye Predpriyatiye Era

OJSC TSRY

OOO Elkomtekh (Elkomtex)

OOO Planar

OOO Sertal

Photon Pro LLC

PJSC Zvezda

Amur Shipbuilding Factory PJSC

AO Center of Shipbuilding and Ship Repairing JSC

AO Kronshtadt

Avant Space LLC

Production Association Strela

Radioavtomatika

Research Center Module

Robin Trade Limited

R.Ye. Alekseyev Central Design Bureau for Hydrofoil Ships

Rubin Sever Design Bureau

Russian Space Systems

Rybinsk Shipyard Engineering

Scientific Research Institute of Applied Chemistry

Scientific-Research Institute of Electronics

Scientific Research Institute of Hypersonic Systems

Scientific Research Institute NII Submikron

Sergey IONOV

Serniya Engineering

Severnaya Verf Shipbuilding Factory

Ship Maintenance Center Zvezdochka

State Governmental Scientific Testing Area of Aircraft Systems (GkNIPAS)

State Machine Building Design Bureau Raduga Bereznya

State Scientific Center AO GNTs RF—FEI A.I. Leypunskiy Physico-Energy Institute

State Scientific Research Institute of Machine Building Bakhirev (GosNIImash)

Tomsk Microwave and Photonic Integrated Circuits and Modules Collective Design Center

UAB Pella-Fjord

United Shipbuilding Corporation JSC ‘35th Shipyard’

United Shipbuilding Corporation JSC ‘Astrakhan Shipyard’

United Shipbuilding Corporation JSC ‘Aysberg Central Design Bureau’

United Shipbuilding Corporation JSC ‘Baltic Shipbuilding Factory’

United Shipbuilding Corporation JSC ‘Krasnoye Sormovo Plant OJSC’

United Shipbuilding Corporation JSC SC ‘Zvyozdochka’

United Shipbuilding Corporation ‘Pribaltic Shipbuilding Factory Yantar’

United Shipbuilding Corporation ‘Scientific Research Design Technological Bureau Onega’

United Shipbuilding Corporation ‘Sredne-Nevsky Shipyard’

Ural Scientific Research Institute for Composite Materials

Urals Project Design Bureau Detal

Vega Pilot Plant

Vertikal LLC

Vladislav Vladimirovich Fedorenko

VTK Ltd

Yaroslavl Shipbuilding Factory

ZAO Elmiks-VS

ZAO Sparta

ZAO Svyaz Inzhiniring

46th TSNII Central Scientific Research Institute

Alagir Resistor Factory

All-Russian Research Institute of Optical and Physical Measurements

All-Russian Scientific-Research Institute Etalon JSC

Almaz JSC

Arzam Scientific Production Enterprise Temp Avia

Automated Procurement System for State Defense Orders, LLC

Dolgoprudniy Design Bureau of Automatics (DDBA JSC)

Electronic Computing Technology Scientific-Research Center JSC

Electrosignal JSC

Energiya JSC

Engineering Center Moselectronproekt

Etalon Scientific and Production Association

Evgeny Krayushin

Foreign Trade Association Mashpriborintorg

Ineko LLC

Informakustika JSC

Institute of High Energy Physics

Institute of Theoretical and Experimental Physics

Inteltech PJSC

ISE SO RAN Institute of High-Current Electronics

Kaluga Scientific-Research Institute of Telemechanical Devices JSC

Kulon Scientific-Research Institute JSC

Lutch Design Office JSC

Meteor Plant JSC

Moscow Communications Research Institute JSC

Moscow Order of the Red Banner of Labor Research Radio Engineering Institute JSC

NPO Elektromechaniki JSC

Omsk Production Union Irtysh JSC

Omsk Scientific-Research Institute of Instrument Engineering JSC

Optron, JSC

Pella Shipyard OJSC

Polyot Chelyabinsk Radio Plant JSC

Pskov Distance Communications Equipment Plant

Radiozavod JSC

Razryad JSC

Research Production Association Mars

Ryazan Radio-Plant

Scientific Production Center Vigstar JSC

Scientific Production Enterprise ‘Radiosviaz’

Scientific Research Institute Ferrite-Domen

Scientific Research Institute of Communication Management Systems

Scientific-Production Association and Scientific-Research Institute of Radio- Components

Scientific-Production Enterprise ‘Kant’

Scientific-Production Enterprise ‘Svyaz’

Scientific-Production Enterprise Almaz JSC

Scientific-Production Enterprise Salyut JSC

Scientific-Production Enterprise Volna

Scientific-Production Enterprise Vostok JSC

Scientific-Research Institute ‘Argon’

Scientific-Research Institute and Factory Platan

Scientific-Research Institute of Automated Systems and Communications Complexes Neptune JSC

Special Design and Technical Bureau for Relay Technology

Special Design Bureau Salute JSC

Tactical Missile Company, Joint Stock Company ‘Salute’

Tactical Missile Company, Joint Stock Company ‘State Machine Building Design Bureau ‘Vympel’ By Name I.I.Toropov’

Tactical Missile Company, Joint Stock Company ‘URALELEMENT’

Tactical Missile Company, Joint Stock Company ‘Plant Dagdiesel’

Tactical Missile Company, Joint Stock Company ‘Scientific Research Institute of Marine Heat Engineering’

Tactical Missile Company, Joint Stock Company PA Strela

Tactical Missile Company, Joint Stock Company Plant Kulakov

Tactical Missile Company, Joint Stock Company Ravenstvo

Tactical Missile Company, Joint Stock Company Ravenstvo-service

Tactical Missile Company, Joint Stock Company Saratov Radio Instrument Plant

Tactical Missile Company, Joint Stock Company Severny Press

Tactical Missile Company, Joint-Stock Company ‘Research Center for Automated Design’

Tactical Missile Company, KB Mashinostroeniya

Tactical Missile Company, NPO Electromechanics

Tactical Missile Company, NPO Lightning

Tactical Missile Company, Petrovsky Electromechanical Plant ‘Molot’

Tactical Missile Company, PJSC ‘MBDB ‘ISKRA’’

Tactical Missile Company, PJSC ANPP Temp Avia

Tactical Missile Company, Raduga Design Bureau

Tactical Missile Corporation, ‘Central Design Bureau of Automation’

Tactical Missile Corporation, 711 Aircraft Repair Plant

Tactical Missile Corporation, AO GNPP ‘Region’

Tactical Missile Corporation, AO TMKB ‘Soyuz’

Tactical Missile Corporation, Azov Optical and Mechanical Plant

Tactical Missile Corporation, Concern ‘MPO – Gidropribor’

Tactical Missile Corporation, Joint Stock Company ‘KRASNY GIDROPRESS’

Tactical Missile Corporation, Joint Stock Company Avangard

Tactical Missile Corporation, Joint Stock Company Concern Granit-Electron

Tactical Missile Corporation, Joint Stock Company Elektrotyaga

Tactical Missile Corporation, Joint Stock Company GosNIIMash

Tactical Missile Corporation, RKB Globus

Tactical Missile Corporation, Smolensk Aviation Plant

Tactical Missile Corporation, TRV Engineering

Tactical Missile Corporation, Ural Design Bureau ‘Detal’

Tactical Missile Corporation, Zvezda-Strela Limited Liability Company

Tambov Plant (TZ) ‘October’

United Shipbuilding Corporation ‘Production Association Northern Machine Building Enterprise’

United Shipbuilding Corporation ‘5th Shipyard’

Federal Center for Dual-Use Technology (FTsDT) Soyuz

Turayev Machine Building Design Bureau Soyuz

Zhukovskiy Central Aerohydrodynamics Institute (TsAGI)

Rosatomflot

Lyulki Experimental-Design Bureau

Lyulki Science and Technology Center

AO Aviaagregat

Central Aerohydrodynamic Institute (TsAGI)

Closed Joint Stock Company Turborus (Turborus)

Federal Autonomous Institution Central Institute of Engine-Building N.A. P.I. Baranov; Central Institute of Aviation Motors (CIAM)

Federal State Budgetary Institution National Research Center Institute N.A. N.E. Zhukovsky (Zhukovsky National Research Institute)

Federal State Unitary Enterprise “State Scientific-Research Institute for Aviation Systems” (GosNIIAS)

Joint Stock Company 123 Aviation Repair Plant (123 ARZ)

Joint Stock Company 218 Aviation Repair Plant (218 ARZ)

Joint Stock Company 360 Aviation Repair Plant (360 ARZ)

Joint Stock Company 514 Aviation Repair Plant (514 ARZ)

Joint Stock Company 766 UPTK

Joint Stock Company Aramil Aviation Repair Plant (AARZ)

Joint Stock Company Aviaremont (Aviaremont)

Joint Stock Company Flight Research Institute N.A. M.M. Gromov (FRI Gromov)

Joint Stock Company Metallist Samara (Metallist Samara)

Joint Stock Company Moscow Machine-Building Enterprise named after V. V. Chernyshev (MMP V.V. Chernyshev)

JSC NII Steel

Joint Stock Company Remdizel

Joint Stock Company Special Industrial and Technical Base Zvezdochka (SPTB Zvezdochka)

Joint Stock Company STAR

Joint Stock Company Votkinsk Machine Building Plant

Joint Stock Company Yaroslav Radio Factory

Joint Stock Company Zlatoustovsky Machine Building Plant (JSC Zlatmash)

Limited Liability Company Center for Specialized Production OSK Propulsion (OSK Propulsion)

Lytkarino Machine-Building Plant

Moscow Aviation Institute

Moscow Institute of Thermal Technology

Omsk Motor-Manufacturing Design Bureau

Open Joint Stock Company 170 Flight Support Equipment Repair Plant (170 RZ SOP)

Open Joint Stock Company 20 Aviation Repair Plant (20 ARZ)

Open Joint Stock Company 275 Aviation Repair Plant (275 ARZ)

Open Joint Stock Company 308 Aviation Repair Plant (308 ARZ)

Open Joint Stock Company 32 Repair Plant of Flight Support Equipment (32 RZ SOP)

Open Joint Stock Company 322 Aviation Repair Plant (322 ARZ)

Open Joint Stock Company 325 Aviation Repair Plant (325 ARZ)

Open Joint Stock Company 680 Aircraft Repair Plant (680 ARZ)

Open Joint Stock Company 720 Special Flight Support Equipment Repair Plant (720 RZ SOP)

Open Joint Stock Company Volgograd Radio-Technical Equipment Plant (VZ RTO)

Public Joint Stock Company Agregat (PJSC Agregat)

Salute Gas Turbine Research and Production Center

Scientific-Production Association Vint of Zvezdochka Shipyard (SPU Vint)

Scientific Research Institute of Applied Acoustics (NIIPA)

Siberian Scientific-Research Institute of Aviation N.A. S.A. Chaplygin (SibNIA)

Software Research Institute

Subsidiary Sevastopol Naval Plant of Zvezdochka Shipyard (Sevastopol Naval Plant)

Tula Arms Plant

Russian Institute of Radio Navigation and Time

Federal Technical Regulation and Metrology Agency (Rosstandart)

Federal State Budgetary Institution of Science P.I. K.A. Valiev RAS of the Ministry of Science and Higher Education of Russia (FTIAN)

Federal State Unitary Enterprise All-Russian Research Institute of Physical, Technical and Radio Engineering Measurements (VNIIFTRI)

Institute of Physics Named After P.N. Lebedev of the Russian Academy of Sciences (LPI)

The Institute of Solid-State Physics of the Russian Academy of Sciences (ISSP)

National Research Center Kurchatov Institute (The Kurchatov Institute)

Rzhanov Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Sciences (IPP SB RAS)

UEC-Perm Engines, JSC

Ural Works of Civil Aviation, JSC

Central Design Bureau for Marine Engineering “Rubin”, JSC

"Aeropribor-Voskhod", JSC

Aerospace Equipment Corporation, JSC

Central Research Institute of Automation and Hydraulics (CNIIAG), JSC

Aerospace Systems Design Bureau, JSC

Afanasyev Technomac, JSC

Ak Bars Shipbuilding Corporation, CJSC

AGAT, Gavrilov-Yaminskiy Machine-Building Plant, JSC

Almaz Central Marine Design Bureau, JSC

Joint Stock Company Eleron

AO Rubin

Branch of AO Company Sukhoi Yuri Gagarin Komsomolsk-on-Amur Aircraft Plant

Branch of PAO II – Aviastar

Branch of RSK MiG Nizhny Novgorod Aircraft-Construction Plant Sokol

Chkalov Novosibirsk Aviation Plant

Joint Stock Company All-Russian Scientific-Research Institute Gradient

Joint Stock Company Almatyevsk Radiopribor Plant (JSC AZRP)

Joint Stock Company Experimental-Design Bureau Elektroavtomatika in the name of P.A. Efimov

Joint Stock Company Industrial Controls Design Bureau

Joint Stock Company Kazan Instrument-Engineering and Design Bureau

Joint Stok Company Microtechnology

Phasotron Scientific-Research Institute of Radio-Engineering

Joint Stock Company Radiopribor

Joint Stock Company Ramensk Instrument-Engineering Bureau

Joint Stock Company Research and Production Center SAPSAN

Joint Stock Company Rychag

Joint Stock Company Scientific Production Enterprise Izmeritel

Joint Stock Company Scientific-Production Union for Radioelectronics named after V.I. Shimko

Joint Stock Company Taganrog Communications Scientific-Research Institute

Joint Stock Company Urals Instrument-Engineering Plant

Joint Stock Company Vzlet Engineering Testing Support

Joint Stock Company Zhiguli Radio Plant

Joint Stock Company Bryansk Electromechanical Plant

Public Joint Stock Company Moscow Institute of Electro-Mechanics and Automation

Public Joint Stock Company Stavropol Radio Plant Signal

Public Joint Stock Company Techpribor

Joint Stock Company Ramensky Instrument-Engineering Plant

V.V. Tarasov Avia Avtomatika

Design Bureau of Chemical Machine Building KBKhM

Far Eastern Shipbuilding and Ship Repair Center

Ilyushin Aviation Complex Branch: Myasishcheva Experimental Mechanical Engineering Plant

Institute of Marine Technology Problems Far East Branch Russian Academy of Sciences

Irkutsk Aviation Plant

Joint Stock Company Aerocomposit Ulyanovsk Plant

Joint Stock Company Experimental Design Bureau named after A.S. Yakovlev

Joint Stock Company Federal Research and Production Center Altai

Joint Stock Company “Head Special Design Bureau Prozhektor

Joint Stock Company Ilyushin Aviation Complex

Joint Stock Company Lazurit Central Design Bureau

Joint Stock Company Research and Development Enterprise Protek

Joint Stock Company SPMDB Malachite

Joint Stock Company Votkinsky Zavod

Kalyazinsky Machine Building Factory – Branch of RSK MiG

Main Directorate of Deep-Sea Research of the Ministry of Defense of the Russian Federation

NPP Start

OAO Radiofizika

P.A. Voronin Lukhovitsk Aviation Plant, branch of RSK MiG

Public Joint Stock Company Bryansk Special Design Bureau

Public Joint Stock Company Voronezh Joint Stock Aircraft Company

Radio Technical Institute named after A. L. Mints

Russian Federal Nuclear Center – All-Russian Research Institute of Experimental Physics

Shvabe JSC

Special Technological Center LLC

St. Petersburg Marine Bureau of Machine Building Malakhit

St. Petersburg Naval Design Bureau Almaz

St. Petersburg Shipbuilding Institution Krylov 45

Strategic Control Posts Corporation

V.A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences

Vladimir Design Bureau for Radio Communications OJSC

Voentelecom JSC

A.A. Kharkevich Institute for Information Transmission Problems (IITP), Russian Academy of Sciences (RAS)

Ak Bars Holding

Special Research Bureau for Automation of Marine Researches Far East Branch Russian Academy of Sciences

Systems of Biological Synthesis LLC

Borisfen, JSC

Barnaul cartridge plant, JSC

Concern Avrora Scientific and Production Association, JSC

Bryansk Automobile Plant, JSC

Burevestnik Central Research Institute, JSC

Research Institute of Space Instrumentation, JSC

Arsenal Machine-building plant, OJSC

Central Design Bureau of Automatics, JSC

Zelenodolsk Design Bureau, JSC

Zavod Elecon, JSC

VMP "Avitec", JSC

JSC V. Tikhomirov Scientific Research Institute of Instrument Design

Tulatochmash, JSC

PJSC “I.S. Brook” INEUM

SPE "Krasnoznamenets", JSC

SPA Pribor named after S.S. Golembiovsky, SC

SPA "Impuls", JSC

RusBITech

ROTOR 43

Rostov optical and mechanical plant, PJSC

RATEP, JSC

PLAZ

OKB "Technika"

Ocean Chips

Nudelman Precision Engineering Design Bureau

Angstrem JSC

NPCAP

Novosibirsk Plant of Artificial Fibre

Novosibirsk Cartridge Plant, JSC (alias: SIBFIRE), Новосибирский Патронный Завод

Novator DB

NIMI named after V.V. BAHIREV, JSC

NII Stali JSC

Nevskoe Design Bureau, JSC

Neva Electronica JSC

ENICS

The JSC Makeyev Design Bureau

KURGANPRIBOR, JSC

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ANNEX II

Annex VII to Regulation (EU) No 833/2014 is replaced by the following:

'**List of goods and technology referred to in Articles 2a(1) and 2b(1)**

Part A

General Notes, Acronyms and Abbreviations, and Definitions in Annex I to Regulation (EU) 2021/821 apply to this Annex, with the exception of 'Part I - General Notes, Acronyms and Abbreviations, and Definitions, General Notes to Annex I, point 2.'.

Definitions of Terms used in the Common Military List (CML) of the European Union (2020/C 85/01) apply to this Annex.

Without prejudice to Article 12 of this Regulation, non-controlled items containing one or more components listed in this Annex are not subject to the controls under Articles 2a and 2b of this Regulation.

Without prejudice to Article 12 of this Regulation, non-controlled items containing one or more components listed in this Annex are not subject to the controls under Articles 2a and 2b of this Regulation.

Category I - Electronics

X.A.I.001 Electronic devices and components.

a. "Microprocessor microcircuits", "microcomputer microcircuits", and microcontroller microcircuits having any of the following:

1. A performance speed of 5 GigaFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more;

2. A clock frequency rate exceeding 25 MHz; or

3. More than one data or instruction bus or serial communication port that provides a direct external interconnection between parallel "microprocessor microcircuits" with a transfer rate of 2,5 Mbyte/s;

b. Storage integrated circuits, as follows:

1. Electrically erasable programmable read-only memories (EEPROMs) with a storage capacity;

a. Exceeding 16 Mbits per package for flash memory types; or

b. Exceeding either of the following limits for all other EEPROM types:

1. Exceeding 1 Mbit per package; or

2. Exceeding 256 kbit per package and a maximum access time of less than 80 ns;

2. Static random access memories (SRAMs) with a storage capacity:

a. Exceeding 1 Mbit per package; or

b. Exceeding 256 kbit per package and a maximum access time of less than 25 ns;

c. Analogue-to-digital converters having any of the following:

1. A resolution of 8 bit or more, but less than 12 bit, with an output rate greater than 200 Mega Samples Per Second (MSPS);

2. A resolution of 12 bit with an output rate greater than 105 Mega Samples per Second (MSPS);

3. A resolution of more than 12 bit but equal to or less than 14 bit with an output rate greater than 10 Mega Samples per Second (MSPS); or

4. A resolution of more than 14 bit with an output rate greater than 2,5 Mega Samples Per Second (MSPS);

d. Field programmable logic devices having a maximum number of single-ended digital input/outputs between 200 and 700;

e. Fast Fourier Transform (FFT) processors having a rated execution time for a 1 024 point complex FFT of less than 1 ms;

f. Custom integrated circuits for which the function is unknown, or the control status of the equipment in which the integrated circuits will be used is unknown to the manufacturer, having any of the following:

1. More than 144 terminals; or

2. A typical basic propagation delay time of less than 0,4 ns;

g. Traveling-wave "vacuum electronic devices", pulsed or continuous wave, as follows:

1. Coupled cavity devices, or derivatives thereof;

2. Devices based on helix, folded waveguide, or serpentine waveguide circuits, or derivatives thereof, having any of the following:

a. An "instantaneous bandwidth" of half an octave or more and average power (expressed in kW) times frequency (expressed in GHz) of more than 0,2; or

b. An "instantaneous bandwidth" of less than half an octave; and average power (expressed in kW) times frequency (expressed in GHz) of more than 0,4;

h. Flexible waveguides designed for use at frequencies exceeding 40 GHz;

i. Surface acoustic wave and surface skimming (shallow bulk) acoustic wave devices, having either of the following:

1. A carrier frequency exceeding 1 GHz; or

2. A carrier frequency of 1 GHz or less; and

a. A 'frequency side-lobe rejection' exceeding 55 dB;

b. A product of the maximum delay time and bandwidth (time in μs and bandwidth in MHz) of more than 100; or

c. A dispersive delay of more than 10 μs;

Technical Note: For the purpose of X.A.I.001.i 'Frequency side-lobe rejection' is the maximum rejection value specified in data sheet.

j. ‘Cells’ as follows:

1. ‘Primary cells’ having an ‘energy density’ of 550 Wh/kg or less at 293 K (20°C);

2. ‘Secondary cells’ having an ‘energy density’ of 350 Wh/kg or less at 293 K (20°C);

Note: X.A.I.001.j does not control batteries, including single cell batteries.

Technical Notes:

1. For the purpose of X.A.I.001.j energy density (Wh/kg) is calculated from the nominal voltage multiplied by the nominal capacity in ampere-hours (Ah) divided by the mass in kilograms. If the nominal capacity is not stated, energy density is calculated from the nominal voltage squared then multiplied by the discharge duration in hours divided by the discharge load in Ohms and the mass in kilograms.

2. For the purpose of X.A.I.001.j, a ‘cell’ is defined as an electrochemical device, which has positive and negative electrodes, and electrolyte, and is a source of electrical energy. It is the basic building block of a battery.

3. For the purpose of X.A.I.001.j.1, a ‘primary cell’ is a ‘cell’ that is not designed to be charged by any other source.

4. For the purpose of X.A.I.001.j.2, a ‘secondary cell’ is a ‘cell’ that is designed to be charged by an external electrical source.

k. “Superconductive” electromagnets or solenoids specially designed to be fully charged or discharged in less than one minute, having all of the following:

Note: X.A.I.001.k does not control “superconductive” electromagnets or solenoids designed for Magnetic Resonance Imaging (MRI) medical equipment.

1. Maximum energy delivered during the discharge divided by the duration of the discharge of more than 500 kJ per minute;

2. Inner diameter of the current carrying windings of more than 250 mm; and

3. Rated for a magnetic induction of more than 8T or “overall current density” in the winding of more than 300 A/mm^2;

l. Circuits or systems for electromagnetic energy storage, containing components manufactured from “superconductive” materials specially designed for operation at temperatures below the “critical temperature” of at least one of their “superconductive” constituents, having all of the following:

1. Resonant operating frequencies exceeding 1 MHz;

2. A stored energy density of 1 MJ/m^3 or more; and

3. A discharge time of less than 1 ms;

m. Hydrogen/hydrogen-isotope thyratrons of ceramic-metal construction and rate for a peak current of 500 A or more;

n. Not used;

o. Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels, and solar arrays, which are “space qualified” and not controlled by 3A001.e.4 ([1]).

[1] Ref. Annex I to Regulation (EU) 2021/821

X.A.I.002 General purpose "electronic assemblies", modules and equipment.

a. Electronic test equipment, other than those specified in the CML or in Regulation (EU) 2021/821;

b. Digital instrumentation magnetic tape data recorders having any of the following characteristics;

1. A maximum digital interface transfer rate exceeding 60 Mbit/s and employing helical scan techniques;

2. A maximum digital interface transfer rate exceeding 120 Mbit/s and employing fixed head techniques; or

3. “Space qualified”;

c. Equipment, with a maximum digital interface transfer rate exceeding 60 Mbit/s, designed to convert digital video magnetic tape recorders for use as digital instrumentation data recorders;

d. Non-modular analogue oscilloscopes having a bandwidth of 1 GHz or greater;

e. Modular analogue oscilloscope systems having either of the following characteristics:

1. A mainframe with a bandwidth of 1 GHz or greater; or

2. Plug-in modules with an individual bandwidth of 4 GHz or greater;

f. Analogue sampling oscilloscopes for the analysis of recurring phenomena with an effective bandwidth greater than 4 GHz;

g. Digital oscilloscopes and transient recorders, using analogue-to-digital conversion techniques, capable of storing transients by sequentially sampling single-shot inputs at successive intervals of less than 1 ns (greater than 1 Giga Samples per Second (GSPS)), digitizing to 8 bits or greater resolution and storing 256 or more samples.

Note: X.A.I.002 controls the following specially designed components for analogue oscilloscopes:

1. Plug-in units;

2. External amplifiers;

3. Pre-amplifiers;

4. Sampling devices;

5. Cathode ray tubes.

X.A.I.003 Specific processing equipment, other than those specified in the CML or in Regulation (EU) 2021/821, as follows:

a. Frequency changers and their specially designed components, other than those specified in the CML or in Regulation (EU) 2021/821;

b. Mass spectrometers, other than those specified in the CML or in Regulation (EU) 2021/821;

c. All flash X-ray machines, or components of pulsed power systems designed thereof, including Marx generators, high power pulse shaping networks, high voltage capacitors, and triggers;

d. Pulse amplifiers, other than those specified in the CML or in Regulation (EU) 2021/821;

e. Electronic equipment for time delay generation or time interval measurement, as follows:

1. Digital time delay generators with a resolution of 50 ns or less over time intervals of 1 μs or greater; or

2. Multi-channel (three or more) or modular time interval meter and chronometry equipment with resolution of 50 ns or less over time intervals of 1 μs or greater;

f. Chromatography and spectrometry analytical instruments.

X.B.I.001 Equipment for the manufacture of electronic components or materials, as follows and specially designed components and accessories therefor:

a. Equipment specially designed for the manufacture of electron tubes, optical elements and specially designed components therefor controlled by 3A001 ([2]) or X.A.I.001;

b. Equipment specially designed for the manufacture of semiconductor devices, integrated circuits and "electronic assemblies", as follows, and systems incorporating or having the characteristics of such equipment:

Note: X.B.I.001.b. also controls equipment used or modified for use in the manufacture of other devices, such as imaging devices, electro-optical devices, acoustic-wave devices.

1. Equipment for the processing of materials for the manufacture of devices and components as specified in the heading of X.B.I.001.b, as follows:

Note: X.B.I.001 does not control quartz furnace tubes, furnace liners, paddles, boats (except specially designed caged boats), bubblers, cassettes or crucibles specially designed for the processing equipment controlled by X.B.I.001.b.1.

a. Equipment for producing polycrystalline silicon and materials controlled by 3C001 ([3]);

b. Equipment specially designed for purifying or processing III/V and II/VI semiconductor materials controlled by 3C001, 3C002, 3C003, 3C004, or 3C005 ([4]) except crystal pullers, for which see X.B.I.001.b.1.c below;

c. Crystal pullers and furnaces, as follows:

Note: X.B.I.001.b.1.c does not control diffusion and oxidation furnaces.

2 Ref. Annex I to Regulation (EU) 2021/821
3 Ref. Annex I to Regulation (EU) 2021/821
4 Ref. Annex I to Regulation (EU) 2021/821

1. Annealing or recrystallizing equipment other than constant temperature furnaces employing high rates of energy transfer capable of processing wafers at a rate exceeding 0,005 m^2 per minute;

2. 'Stored program controlled' crystal pullers having any of the following characteristics:

   a. Rechargeable without replacing the crucible container;

   b. Capable of operation at pressures above 2,5 x 10^5 Pa; or

   c. Capable of pulling crystals of a diameter exceeding 100 mm;

d. 'Stored program controlled' equipment for epitaxial growth having any of the following characteristics:

   1. Capable of producing silicon layer with a thickness uniform to less than ± 2,5 % across a distance of 200 mm or more;

   2. Capable of producing a layer of any material other than silicon with a thickness uniformity across the wafer of equal to or better than ± 3,5 %; or

   3. Rotation of individual wafers during processing;

e. Molecular beam epitaxial growth equipment;

f. Magnetically enhanced 'sputtering' equipment with specially designed integral load locks capable of transferring wafers in an isolated vacuum environment;

g. Equipment specially designed for ion implantation, ion-enhanced or photo-enhanced diffusion, having any of the following characteristics:

   1. Patterning capability;

   2. Beam energy (accelerating voltage) exceeding 200 keV;

   3. Optimised to operate at a beam energy (accelerating voltage) of less than 10 keV; or

   4. Capable of high energy oxygen implant into a heated "substrate";

h. 'Stored program controlled' equipment for the selective removal (etching) by means of anisotropic dry methods (e.g., plasma), as follows:

   1. 'Batch types' having either of the following:

      a. End-point detection, other than optical emission spectroscopy types; or

      b. Reactor operational (etching) pressure of 26,66 Pa or less;

   2. 'Single wafer types' having any of the following:

      a. End-point detection, other than optical emission spectroscopy types;

b. Reactor operational (etching) pressure of 26,66 Pa or less; or

c. Cassette-to-cassette and load locks wafer handling;

Notes:

1. 'Batch types' refers to machines not specially designed for production processing of single wafers. Such machines can process two or more wafers simultaneously with common process parameters, e.g., RF power, temperature, etch gas species, flow rates.

2. 'Single wafer types' refers to machines specially designed for production processing of single wafers. These machines may use automatic wafer handling techniques to load a single wafer into the equipment for processing. The definition includes equipment that can load and process several wafers but where the etching parameters, e.g., RF power or end point, can be independently determined for each individual wafer.

i. Chemical vapour deposition (CVD) equipment, e.g., plasma-enhanced CVD (PECVD) or photo-enhanced CVD, for semiconductor device manufacturing, having either of the following capabilities, for deposition of oxides, nitrides, metals or polysilicon:

1. Chemical vapour deposition equipment operating below 10^5 Pa; or

2. PECVD equipment operating either below 60 Pa or having automatic cassette-to-cassette and load lock wafer handling;

Note: X.B.I.001.b.1.i does not control low pressure chemical vapour deposition (LPCVD) systems or reactive 'sputtering' equipment.

j. Electron beam systems specially designed or modified for mask making or semiconductor device processing having any of the following characteristics:

1. Electrostatic beam deflection;

2. Shaped, non-Gaussian beam profile;

3. Digital-to-analogue conversion rate exceeding 3 MHz;

4. Digital-to-analogue conversion accuracy exceeding 12 bit; or

5. Target-to-beam position feedback control precision of 1 μm or finer;

Note: X.B.I.001.b.1.j does not control electron beam deposition systems or general purpose scanning electron microscopes.

k. Surface finishing equipment for the processing of semiconductor wafers as follows:

1. Specially designed equipment for backside processing of wafers thinner than 100 μm and the subsequent separation thereof; or

2. Specially designed equipment for achieving a surface roughness of the active surface of a processed wafer with a two-sigma value of 2 μm or less, total indicator reading (TIR);

Note: X.B.I.001.b.1.k does not control single-side lapping and polishing equipment for wafer surface finishing.

l. Interconnection equipment which includes common single or multiple vacuum chambers specially designed to permit the integration of any equipment controlled by X.B.I.001 into a complete system;

m. 'Stored program controlled' equipment using "lasers" for the repair or trimming of "monolithic integrated circuits" with either of the following characteristics:

1. Positioning accuracy less than ± 1 μm; or

2. Spot size (kerf width) less than 3 μm.

Technical Note: For the purpose of X.B.I.001.b.1, 'sputtering' is an overlay coating process wherein positively charged ions are accelerated by an electric field towards the surface of a target (coating material). The kinetic energy of the impacting ions is sufficient to cause target surface atoms to be released and deposited on the substrate. (Note: Triode, magnetron or radio frequency sputtering to increase adhesion of coating and rate of deposition are ordinary modifications of the process.).

2. Masks, mask substrates, mask-making equipment and image transfer equipment for the manufacture of devices and components as specified in the heading of X.B.I.001, as follows:

Note: The term masks refers to those used in electron beam lithography, X-ray lithography, and ultraviolet lithography, as well as the usual ultraviolet and visible photo-lithography.

a. Finished masks, reticles and designs therefor, except:

1. Finished masks or reticles for the production of integrated circuits not controlled by 3A001 ([5]); or

2. Masks or reticles, having both of the following characteristics:

a. Their design is based on geometries of 2,5 μm or more; and

b. The design does not include special features to alter the intended use by means of production equipment or "software";

[5] Ref. Annex I to Regulation (EU) 2021/821

b. Mask substrates as follows:

1. Hard surface (e.g., chromium, silicon, molybdenum) coated "substrates" (e.g., glass, quartz, sapphire) for the preparation of masks having dimensions exceeding 125 mm x 125 mm; or

2. Substrates specially designed for X-ray masks;

c. Equipment, other than general purpose computers, specially designed for computer aided design (CAD) of semiconductor devices or integrated circuits;

d. Equipment or machines, as follows, for mask or reticle fabrication:

1. Photo-optical step and repeat cameras capable of producing arrays larger than 100 mm x 100 mm, or capable of producing a single exposure larger than 6 mm x 6 mm in the image (i.e., focal) plane, or capable of producing line widths of less than 2,5 μm in the photoresist on the "substrate";

2. Mask or reticle fabrication equipment using ion or "laser" beam lithography capable of producing line widths of less than 2,5 μm; or

3. Equipment or holders for altering masks or reticles or adding pellicles to remove defects;

Note: X.B.I.001.b.2.d.1 and b.2.d.2 do not control mask fabrication equipment using photo-optical methods which was either commercially available before the 1st January 1980, or has a performance no better than such equipment.

e. 'Stored program controlled' equipment for the inspection of masks, reticles or pellicles with:

1. A resolution of 0,25 μm or finer; and

2. A precision of 0,75 μm or finer over a distance in one or two coordinates of 63,5 mm or more;

Note: X.B.I.001.b.2.e does not control general purpose scanning electron microscopes except when specially designed and instrumented for automatic pattern inspection.

f. Align and expose equipment for wafer production using photo-optical or X-ray methods, e.g., lithography equipment, including both projection image transfer equipment and step and repeat (direct step on wafer) or step and scan (scanner) equipment, capable of performing any of the following functions:

Note: X.B.I.001.b.2.f does not control photo-optical contact and proximity mask align and expose equipment or contact image transfer equipment.

1. Production of a pattern size of less than 2,5 μm;

2. Alignment with a precision finer than ± 0,25 μm (3 sigma);

3. Machine-to-machine overlay no better than ± 0,3 μm; or

4. A light source wavelength shorter than 400 nm;

g. Electron beam, ion beam or X-ray equipment for projection image transfer capable of producing patterns less than 2,5 μm;

Note: For focused, deflected-beam systems (direct write systems), see X.B.I.001.b.1.j.

h. Equipment using "lasers" for direct write on wafers capable of producing patterns less than 2,5 μm.

3. Equipment for the assembly of integrated circuits, as follows:

a. 'Stored program controlled' die bonders having all of the following characteristics:

1. Specially designed for "hybrid integrated circuits";

2. X-Y stage positioning travel exceeding 37,5 x 37,5 mm; and

3. Placement accuracy in the X-Y plane of finer than ± 10 μm;

b. 'Stored program controlled' equipment for producing multiple bonds in a single operation (e.g., beam lead bonders, chip carrier bonders, tape bonders);

c. Semi-automatic or automatic hot cap sealers, in which the cap is heated locally to a higher temperature than the body of the package, specially designed for ceramic microcircuit packages controlled by 3A001 ([6]) and that have a throughput equal to or more than one package per minute.

Note: X.B.I.001.b.3 does not control general purpose resistance type spot welders.

4. Filters for clean rooms capable of providing an air environment of 10 or less particles of 0,3 μm or smaller per 0,02832 m^3 and filter materials therefor.

Technical Note: For the purpose of X.B.I.001, 'stored program controlled' is a control using instructions stored in an electronic storage that a processor can execute in order to direct the performance of predetermined functions. Equipment may be 'stored program controlled' whether the electronic storage is internal or external to the equipment.

X.B.I.002 Equipment for the inspection or testing of electronic components and materials, and specially designed components and accessories therefor.

a. Equipment specially designed for the inspection or testing of electron tubes, optical elements and specially designed components therefor controlled by 3A001 ([7]) or X.A.I.001;

[6] Ref. Annex I to Regulation (EU) 2021/821

[7] Ref. Annex I to Regulation (EU) 2021/821

b. Equipment specially designed for the inspection or testing of semiconductor devices, integrated circuits and "electronic assemblies", as follows, and systems incorporating or having the characteristics of such equipment:

Note: X.B.I.002.b also controls equipment used or modified for use in the inspection or testing of other devices, such as imaging devices, electro-optical devices, acoustic-wave devices.

1. 'Stored program controlled' inspection equipment for the automatic detection of defects, errors or contaminants of 0,6 μm or less in or on processed wafers, substrates, other than printed circuit boards or chips, using optical image acquisition techniques for pattern comparison;

   Note: X.B.I.002.b.1 does not control general purpose scanning electron microscopes, except when specially designed and instrumented for automatic pattern inspection.

2. Specially designed 'stored program controlled' measuring and analysis equipment, as follows:

   a. Specially designed for the measurement of oxygen or carbon content in semiconductor materials;

   b. Equipment for line width measurement with a resolution of 1 μm or finer;

   c. Specially designed flatness measurement instruments capable of measuring deviations from flatness of 10 μm or less with a resolution of 1 μm or finer.

3. 'Stored program controlled' wafer probing equipment having any of the following characteristics:

   a. Positioning accuracy finer than 3,5 μm;

   b. Capable of testing devices having more than 68 terminals; or

   c. Capable of testing at a frequency exceeding 1 GHz;

4. Test equipment as follows:

   a. 'Stored program controlled' equipment specially designed for testing discrete semiconductor devices and unencapsulated dice, capable of testing at frequencies exceeding 18 GHz;

      Technical Note: Discrete semiconductor devices include photocells and solar cells.

   b. 'Stored program controlled' equipment specially designed for testing integrated circuits and "electronic assemblies" thereof, capable of functional testing:

      1. At a 'pattern rate' exceeding 20 MHz; or

2. At a 'pattern rate' exceeding 10 MHz but not exceeding 20 MHz and capable of testing packages of more than 68 terminals.

Notes: X.B.I.002.b.4.b does not control test equipment specially designed for testing:

1. Memories;

2. Assemblies or a class of "electronic assemblies" for home and entertainment applications; and

3. Electronic components, "electronic assemblies" and integrated circuits not controlled by 3A001 ([8]) or X.A.I.001 provided such test equipment does not incorporate computing facilities with "user accessible programmability".

Technical Note: For purposes of X.B.I.002.b.4.b, 'pattern rate' is defined as the maximum frequency of digital operation of a tester. It is therefore equivalent to the highest data rate that a tester can provide in non-multiplexed mode. It is also referred to as test speed, maximum digital frequency or maximum digital speed.

c. Equipment specially designed for determining the performance of focal-plane arrays at wavelengths of more than 1 200 nm, using 'stored program controlled' measurements or computer aided evaluation and having any of the following characteristics:

1. Using scanning light spot diameters of less than 0,12 mm;

2. Designed for measuring photosensitive performance parameters and for evaluating frequency response, modulation transfer function, uniformity of responsivity or noise; or

3. Designed for evaluating arrays capable of creating images with more than 32 x 32 line elements;

5. Electron beam test systems designed for operation at 3 keV or below, or "laser" beam systems, for non-contactive probing of powered-up semiconductor devices having any of the following:

a. Stroboscopic capability with either beam blanking or detector strobing;

b. An electron spectrometer for voltage measurements with a resolution of less than 0,5 V; or

c. Electrical tests fixtures for performance analysis of integrated circuits;

Note: X.B.I.002.b.5 does not control scanning electron microscopes, except when specially designed and instrumented for non-contactive probing of a powered-up semiconductor device.

[8] Ref. Annex I to Regulation (EU) 2021/821

6. ‘Stored program controlled’ multifunctional focused ion beam systems specially designed for manufacturing, repairing, physical layout analysis and testing of masks or semiconductor devices and having either of the following characteristics:

   a. Target-to-beam position feedback control precision of 1 μm or finer; or

   b. Digital-to-analogue conversion accuracy exceeding 12 bit;

7. Particle measuring systems employing “lasers” designed for measuring particle size and concentration in air having both of the following characteristics:

   a. Capable of measuring particle sizes of 0,2 μm or less at a flow rate of 0,02832 m^3 per minute or more; and

   b. Capable of characterizing Class 10 clean air or better.

Technical Note: For the purpose of X.B.I.002, ‘stored program controlled’ is a control using instructions stored in an electronic storage that a processor can execute in order to direct the performance of predetermined functions. Equipment may be ‘stored program controlled’ whether the electronic storage is internal or external to the equipment.

X.C.I.001 Positive resists designed for semiconductor lithography specially adjusted (optimised) for use at wavelengths between 370 and 193 nm.

X.D.I.001 “Software” specially designed for the “development”, “production”, or “use” of electronic devices or components controlled by X.A.I.001, general purpose electronic equipment controlled by X.A.I.002, or manufacturing and test equipment controlled by X.B.I.001 and X.B.I.002; or “software” specially designed for the “use” of equipment controlled by 3B001.g and 3B001.h ([9]).

X.E.I.001 “Technology” for the “development”, “production” or “use” of electronic devices or components controlled by X.A.I.001, general purpose electronic equipment controlled by X.A.I.002, or manufacturing and test equipment controlled by X.B.I.001 or X.B.I.002, or materials controlled by X.C.I.001.

Category II – Computers

Note: Category II does not control goods for the personal use of the natural persons.

X.A.II.001 Computers, “electronic assemblies” and related equipment, not controlled by 4A001 or 4A003 ([10]), and specially designed components therefor.

Note: The control status of the “digital computers” and related equipment described in X.A.II.001 is determined by the control status of other equipment or systems provided:

a. The “digital computers” or related equipment are essential for the operation of the other equipment or systems;

9 Ref. Annex I to Regulation (EU) 2021/821

10 Ref. Annex I to Regulation (EU) 2021/821

b. The "digital computers" or related equipment are not a "principal element" of the other equipment or systems; and

N.B.1: The control status of "signal processing" or "image enhancement" equipment specially designed for other equipment with functions limited to those required for the other equipment is determined by the control status of the other equipment even if it exceeds the "principal element" criterion.

N.B.2: For the control status of "digital computers" or related equipment for telecommunications equipment, see Category 5, Part 1 (Telecommunications) ([11]).

c. The "technology" for the "digital computers" and related equipment is determined by 4E ([12]).

a. Electronic computers and related equipment, and "electronic assemblies" and specially designed components therefor, rated for operation at an ambient temperature above 343 K (70°C);

b. "Digital computers", including equipment of "signal processing" or "image enhancement", having an "Adjusted Peak Performance" ("APP") equal to or greater than 0,0128 Weighted TeraFLOPS (WT);

c. "Electronic assemblies" that are specially designed or modified to enhance performance by aggregation of processors, as follows:

1. Designed to be capable of aggregation in configurations of 16 or more processors;

2. Not used;

Note 1: X.A.II.001.c applies only to "electronic assemblies" and programmable interconnections with a "APP" not exceeding the limits in X.A.II.001.b, when shipped as unintegrated "electronic assemblies". It does not apply to "electronic assemblies" inherently limited by nature of their design for use as related equipment controlled by X.A.II.001.k.

Note 2: X.A.II.001.c does not control any "electronic assembly" specially designed for a product or family of products whose maximum configuration does not exceed the limits of X.A.II.001.b.

d. Not used;

e. Not used;

f. Equipment for "signal processing" or "image enhancement" having an "Adjusted Peak Performance" ("APP") equal to or greater than 0,0128 Weighted TeraFLOPS WT;

g. Not used;

h. Not used;

11 Ref. Annex I to Regulation (EU) 2021/821

12 Ref. Annex I to Regulation (EU) 2021/821

i. Equipment containing 'terminal interface equipment' exceeding the limits in X.A.III.101;

Technical Note: For the purpose of X.A.II.001.i, 'terminal interface equipment' means equipment at which information enters or leaves the telecommunication system, e.g. telephone, data device, computer, etc.

j. Equipment specially designed to provide external interconnection of "digital computers" or associated equipment that allows communications at data rates exceeding 80 Mbyte/s.

Note: X.A.II.001.j does not control internal interconnection equipment (e.g., backplanes, buses) passive interconnection equipment, "network access controllers" or 'communication channel controllers'.

Technical Note: For the purpose of X.A.II.001.j, 'communication channel controllers' is the physical interface which controls the flow of synchronous or asynchronous digital information. It is an assembly that can be integrated into computer or telecommunications equipment to provide communications access.

k. Hybrid computers and "electronic assemblies" and specially designed components therefor containing analogue-to-digital converters having all of the following characteristics:

1. 32 channels or more; and

2. A resolution of 14 bit (plus sign bit) or more with a conversion rate of 200 000 Hz or more.

X.D.II.001 "Program" proof and validation "software", "software" allowing the automatic generation of "source codes", and operating system "software" that are specially designed for "real-time processing' equipment."

a. "Program" proof and validation "software" using mathematical and analytical techniques and designed or modified for "programs" having more than 500 000 "source code" instructions;

b. "Software" allowing the automatic generation of "source codes" from data acquired on line from external sensors described in the Regulation (EU) 2021/821; or

c. Operating system "software" specially designed for "real-time processing" equipment that guarantees a 'global interrupt latency time' of less than 20 μs.

Technical Note: For the purpose of X.D.II.001, 'global interrupt latency time' is the time taken by the computer system to recognise an interrupt due to the event, service the interrupt and perform a context switch to an alternate memory-resident task waiting on the interrupt.

X.D.II.002 "Software" other than that controlled in 4D001 ([13]) specially designed or modifiedfor the "development", "production" or "use" of equipment controlled by 4A101 ([14]).

13 Ref. Annex I to Regulation (EU) 2021/821

14 Ref. Annex I to Regulation (EU) 2021/821

X.E.II.001 "Technology" for the "development", "production" or "use" of equipment controlled by X.A.II.001, or "software" controlled by X.D.II.001 or X.D.II.002.

X.E.II.002 "Technology" for the "development" or "production" of equipment designed for 'multi-data-stream processing'.

Technical Note: For the purpose of X.E.II.002, 'multi-data-stream processing' is a microprogram or equipment architecture technique that permits simultaneous processing of two or more data sequences under the control of one or more instruction sequences by means such as:

1. *Single Instruction Multiple Data (SIMD) architectures such as vector or array processors;*
2. *Multiple Single Instruction Multiple Data (MSIMD) architectures;*
3. *Multiple Instruction Multiple Data (MIMD) architectures, including those that are tightly coupled, closely coupled or loosely coupled; or*
4. *Structured arrays of processing elements, including systolic arrays.*

Category III. Part 1 – Telecommunications

Note: Category III.Part 1 does not control goods for the personal use of the natural persons.

X.A.III.101 Telecommunication equipment.

a. Any type of telecommunications equipment, not controlled by 5A001.a ([15]), specially designed to operate outside the temperature range from 219 K (-54°C) to 397 K (124°C).

b. Telecommunication transmission equipment and systems, and specially designed components and accessories therefor, having any of the following characteristics, functions or features:

Note: Telecommunication transmission equipment:

a. Categorised as follows, or combinations thereof:

1. Radio equipment (e.g., transmitters, receivers and transceivers);

2. Line terminating equipment;

3. Intermediate amplifier equipment;

4. Repeater equipment;

5. Regenerator equipment;

6. Translation encoders (transcoders);

7. Multiplex equipment (statistical mutiplex included);

8. Modulators/demodulators (modems);

9. Transmultiplex equipment (see CCITT Rec. G701);

10. 'Stored program controlled' digital crossconnection equipment;

11. 'Gateways' and bridges;

15 Ref. Annex I to Regulation (EU) 2021/821

12. 'Media access units'; and

b. Designed for use in single or multi-channel communication via any of the following:

1. Wire (line);

2. Coaxial cable;

3. Optical fibre cable;

4. Electromagnetic radiation; or

5. Underwater acoustic wave propagation.

1. Employing digital techniques, including digital processing of analogue signals, and designed to operate at a 'digital transfer rate' at the highest multiplex level exceeding 45 Mbit/s or a 'total digital transfer rate' exceeding 90 Mbit/s;

   Note: X.A.III.101.b.1 does not control equipment specially designed to be integrated and operated in any satellite system for civil use.

2. Modems using the 'bandwidth of one voice channel' with a 'data signalling rate' exceeding 9 600 bits per second;

3. Being 'stored program controlled' digital cross connect equipment with 'digital transfer rate' exceeding 8,5 Mbit/s per port;

4. Being equipment containing any of the following:

   a. "Network access controllers" and their related common medium having a 'digital transfer rate' exceeding 33 Mbit/s; or

   b. 'Communication channel controllers' with a digital output having a 'data signalling rate' exceeding 64 000 bit/s per channel;

   Note: If any uncontrolled equipment contains a "network access controller", it cannot have any type of telecommunications interface, except those described in, but not controlled by X.A.III.101.b.4.

5. Employing a "laser" and having any of the following characteristics:

   a. A transmission wavelength exceeding 1 000 nm; or

   b. Employing analogue techniques and having a bandwidth exceeding 45 MHz;

   c. Employing coherent optical transmission or coherent optical detection techniques (also called optical heterodyne or homodyne techniques);

   d. Employing wavelength division multiplexing techniques; or

   e. Performing 'optical amplification';

6. Radio equipment operating at input or output frequencies exceeding:

   a. 31 GHz for satellite-earth station applications; or

   b. 26,5 GHz for other applications;

Note: X.A.III.101.b.6 does not control equipment for civil use when conforming with an International Telecommunications Union (ITU) allocated band between 26,5 GHz and 31 GHz.

7. Being radio equipment employing any of the following:

   a. Quadrature-amplitude-modulation (QAM) techniques above level 4 if the 'total digital transfer rate' exceeds 8,5 Mbit/s;

   b. QAM techniques above level 16 if the 'total digital transfer rate' is equal to or less than 8,5 Mbit/s;

   c. Other digital modulation techniques and having a 'spectral efficiency' exceeding 3 bit/s/Hz; or

   d. Operating in the 1,5 MHz to 87,5 MHz band and incorporating adaptive techniques providing more than 15 dB suppression of an interfering signal.

   Notes:

   1. X.A.III.101.b.7 does not control equipment specially designed to be integrated and operated in any satellite system for civil use.

   2. X.A.III.101.b.7 does not control radio relay equipment for operation in an International Telecommunications Union (ITU) allocated band:

      a. Having any of the following:

         1. Not exceeding 960 MHz; or

         2. With a 'total digital transfer rate' not exceeding 8,5 Mbit/s; and

      b. Having a 'spectral efficiency' not exceeding 4 bit/s/Hz.

c. 'Stored program controlled' switching equipment and related signalling systems, having any of the following characteristics, functions or features, and specially designed components and accessories therefor:

Note: Statistical multiplexers with digital input and digital output which provide switching are treated as 'stored program controlled' switches.

1. 'Data (message) switching' equipment or systems designed for 'packet-mode operation', "electronic assemblies" and components therefor, other than those specified in the CML or in Regulation (EU) 2021/821;

2. Not used;

3. Routing or switching of 'datagram' packets;

   Note: X.A.III.101.c.3 does not control networks restricted to using only "network access controllers" or to "network access controllers" themselves.

4. Not used;

5. Multi-level priority and pre-emption for circuit switching;

   Note: X.A.III.101.c.5 does not control single-level call preemption.

6. Designed for automatic hand-off of cellular radio calls to other cellular switches or automatic connection to a centralised subscriber data base common to more than one switch;

7. Containing 'stored program controlled' digital cross connect equipment with 'digital transfer rate' exceeding 8,5 Mbit/s per port:

8. 'Common channel signalling' operating in either non-associated or quasi-associated mode of operation;

9. 'Dynamic adaptive routing';

10. Being packet switches, circuit switches and routers with ports or lines exceeding any of the following:

a. A 'data signalling rate' of 64 000 bit/s per channel for a 'communications channel controller'; or

Note: X.A.III.101.c.10.a does not control multiplex composite links composed only of communication channels not individually controlled by X.A.III.101.b.1.

b. A 'digital transfer rate' of 33 Mbit/s for a "network access controller" and related common media;

Note: X.A.III.101.c.10 does not control packet switches or routers with ports or lines not exceeding the limits in X.A.III.101.c.10.

11. 'Optical switching';

12. Employing 'Asynchronous Transfer Mode' ('ATM') techniques.

d. Optical fibres and optical fibre cables of more than 50 m in length designed for single mode operation;

e. Centralised network control having all of the following characteristics:

1. Receives data from the nodes; and

2. Process these data in order to provide control of traffic not requiring operator decisions, and thereby performing 'dynamic adaptive routing';

Note 1: X.A.III.101.e does not include cases of routing decisions taken on predefined information.

Note 2: X.A.III.101.e does not preclude control of traffic as a function of predictable statistical traffic conditions.

f. Phased array antennas, operating above 10,5 GHz, containing active elements and distributed components, and designed to permit electronic control of beam shaping and pointing, except for landing systems with instruments meeting International Civil Aviation Organization (ICAO) standards (microwave landing systems (MLS));

g. Mobile communications equipment other than those specified in the CML or in Regulation (EU) 2021/821, "electronic assemblies" and components therefor; or

h. Radio relay communications equipment designed for use at frequencies equal to or exceeding 19,7 GHz and components therefor, other than those specified in the CML or in Regulation (EU) 2021/821.

Technical Note: For the purpose of X.A.III.101:

1) 'Asynchronous transfer mode' ('ATM') is a transfer mode in which the information is organised into cells; it is asynchronous in the sense that the recurrence of cells depends on the required or instantaneous bit rate.

2) 'Bandwidth of one voice channel' is data communication equipment designed to operate in one voice channel of 3 100 Hz, as defined in CCITT Recommendation G.151.

3) 'Communications channel controller' is the physical interface that controls the flow of synchronous or asynchronous digital information. It is an assembly that can be integrated into computer or telecommunications equipment to provide communications access.

4) 'Datagram' is a self-contained, independent entity of data carrying sufficient information to be routed from the source to the destination data terminal equipment without reliance on earlier exchanges between this source and destination data terminal equipment and the transporting network.

5) 'Fast select' is a facility applicable to virtual calls that allows data terminal equipment to expand the possibility to transmit data in call set-up and clearing 'packets' beyond the basic capabilities of a virtual call.

6) 'Gateway' is the function, realised by any combination of equipment and "software", to carry out the conversion of conventions for representing, processing or communicating information used on one system into the corresponding, but different conventions used in another system.

7) 'Integrated Services Digital Network' (ISDN) is a unified end- to-end digital network, in which data originating from all types of communication (e.g., voice, text, data, still and moving pictures) are transmitted from one port (terminal) in the exchange (switch) over one access line to and from the subscriber.

8) 'Packet' is a group of binary digits including data and call control signals that is switched as a composite whole. The data, call control signals, and possible error control information are arranged in a specified format.

9) 'Common channel signalling' means the transmission of control information (signalling) via a separate channel than that used for the messages. The signalling channel usually controls multiple message channels.

10) 'Data signalling rate' means the rate, as defined in ITU Recom-mendation 53-36, taking into account that, for non-binary modulation, baud and bit per second are not equal. Bits for coding, checking and synchronization functions are to be included.

11) 'Dynamic adaptive routing' means Automatic rerouting of traffic based on sensing and analysis of current actual network conditions

12) 'Media access unit' means equipment that contains one or more communication interfaces ("network access controller", 'communications channel controller', modem or computer bus) to connect terminal equipment to a network.

13) 'Spectral effiency' is the 'digital transfer rate' [bits/s] / 6 dB spectrum bandwidth in Hz.

14) 'Stored program controlled' is a control using instructions stored in an electronic storage that a processor can execute in order to direct the performance of predetermined functions.

Note: Equipment may be 'stored program controlled' whether the electronic storage is internal or external to the equipment.

X.B.III.101 Telecommunications test equipment, other than those specified in the CML or in Regulation (EU) 2021/821.

X.C.III.101 Preforms of glass or of any other material optimised for the manu-facture of optical fibres controlled by X.A.III.101.

X.D.III.101 "Software" specially designed or modified for the "development", "production" or "use" of equipment controlled by X.A.III.101 and X.B.III.101, and dynamic adaptive routing "software" as described as follows:

a. "Software", other than in machine-executable form, specially designed for 'dynamic adaptive routing';

b. Not used.

X.E.III.101 "Technology" for the "development", "production" or "use" of equipment controlled by X.A.III.101 or X.B.III.101, or "software" controlled by X.D.III.101, and other "technologies" as follows:

a. Specific "technologies" as follows:

1. "Technology" for the processing and application of coatings to optical fibre specially designed to make it suitable for underwater use;

2. "Technology" for the "development" of equipment employing 'Synchronous Digital Hierarchy' ('SDH') or 'Synchronous Optical Network' ('SONET') techniques.

Technical Note: For the purpose of X.E.III.101:

1) 'Synchronous digital hierarchy' (SDH) is a digital hierarchy providing a means to manage, multiplex, and access various forms of digital traffic using a synchronous transmission format on different types of media. The format is based on the Synchronous Transport Module (STM) that is defined by CCITT Recommendation G.703, G.707, G.708, G.709 and others yet to be published. The first level rate of 'SDH' is 155,52 Mbits/s.

2) 'Synchronous optical network' (SONET) is a network providing a means to manage, multiplex and access various forms of digital traffic using a synchronous transmission format on fibre optics. The format is the North America version of 'SDH' and also uses the Synchronous Transport Module (STM). However, it uses the Synchronous Transport Signal (STS) as the basic transport module with a first level rate of 51,81 Mbits/s. The SONET standards are being integrated into those of 'SDH'.

Category III. Part 2 - Information Security

Note: Category III.Part 2 does not control goods for the personal use of the natural persons.

X.A.III.201 Equipment as follows:

a. Not used;

b. Not used;

c. Goods classified as mass market encryption in accordance with Cryptography Note – Note 3 to Category 5, Part 2 ([16]).

X.D.III.201 "Information Security" "software" as follows:

Note: This entry does not control "software" designed or modified to protect against malicious computer damage, e.g., viruses, where the use of "cryptography" is limited to authentication, digital signature and/or the decryption of data or files.

a. Not used;

b. Not used;

c. "Software" classified as mass market encryption "software" in accordance with Cryptography Note – Note 3 to Category 5, Part 2 ([17]).

X.E.III.201 "Information Security" "technology" according to the General Technology Note, as follows:

a. Not used;

b. "Technology", other than specified in the CML or in Regulation (EU) 2021/821, for the "use" of mass market goods controlled by X.A.III.201.c or mass market "software" controlled by X.D.III.201.c.

Category IV – Sensors and Lasers

X.A.IV.001 Marine or terrestrial acoustic equipment, capable of detecting or locating underwater objects or features or positioning surface vessels or underwater vehicles; and specially designed components, other than those specified in the CML or in Regulation (EU) 2021/821.

X.A.IV.002 Optical Sensors as follows:

a. Image intensifier tubes and specially designed components therefor, as follows:

1. Image intensifier tubes having all the following:

a. A peak response in wavelength range exceeding 400 nm, but not exceeding 1 050 nm;

b. A microchannel plate for electron image amplification with a hole pitch (centre-to-centre spacing) of less than 25 μm; and

c. Having any of the following:

1. An S-20, S-25 or multialkali photocathode; or

2. A GaAs or GaInAs photocathode;

2. Specially designed microchannel plates having both of the following characteristics:

16 Ref. Annex I to Regulation (EU) 2021/821

17 Ref. Annex I to Regulation (EU) 2021/821

a. 15 000 or more hollow tubes per plate; and

b. Hole pitch (centre-to-centre spacing) of less than 25 μm.

b. Direct view imaging equipment operating in the visible or infrared spectrum, incorporating image intensifier tubes having the characteristics listed in X.A.IV.002.a.1.

X.A.IV.003 Cameras as follows:

a. Cameras that meet the criteria of Note 3 to 6A003.b.4. ([18]);

b. Not used;

X.A.IV.004 Optics as follows:

Note: X.A.IV.004 does not control optical filters with fixed air gaps or Lyot-type filters.

a. Optical filters:

1. For wavelengths longer than 250 nm, comprised of multi-layer optical coatings and having either of the following:

a. Bandwidths equal to or less than 1 nm Full Width Half Intensity (FWHI) and peak transmission of 90 % or more; or

b. Bandwidths equal to or less than 0,1 nm FWHI and peak transmission of 50 % or more;

2. For wavelengths longer than 250 nm, and having all of the following:

a. Tunable over a spectral range of 500 nm or more;

b. Instantaneous optical bandpass of 1,25 nm or less;

c. Wavelength resettable within 0,1 ms to an accuracy of 1 nm or better within the tunable spectral range; and

d. A single peak transmission of 91 % or more;

3. Optical opacity switches (filters) with a field of view of 30° or wider and a response time equal to or less than 1 ns;

b. 'Fluoride fibre' cable, or optical fibres therefor, having an attenuation of less than 4 dB/km in the wavelength range exceeding 1 000 nm but not exceeding 3 000 nm;

Technical Note: For the purpose of X.A.IV.004.b 'Fluoride fibres' are fibres manufactured from bulk fluoride compounds.

X.A.IV.005 "Lasers" as follows:

a. Carbon dioxide (CO_2) "lasers" having any of the following:

1. A CW output power exceeding 10 kW;

2. A pulsed output with a "pulse duration" exceeding 10 μs; and

a. An average output power exceeding 10 kW; or

[18] Ref. Annex I to Regulation (EU) 2021/821

b. A pulsed “peak power” exceeding 100 kW; or

3. A pulsed output with a “pulse duration” equal to or less than 10 μs; and

a. A pulse energy exceeding 5 J per pulse and “peak power” exceeding 2,5 kW; or

b. An average output power exceeding 2,5 kW;

b. Semiconductor lasers, as follows:

1. Individual, single-transverse mode semiconductor “lasers” having:

a. An average output power exceeding 100 mW; or

b. A wavelength exceeding 1 050 nm;

2. Individual, multiple-transverse mode semiconductor “lasers”, or arrays of individual semiconductor “lasers”, having a wave-length exceeding 1 050 nm;

c. Ruby “lasers” having an output energy exceeding 20 J per pulse;

d. Non-“tunable” “pulsed lasers” having an output wavelength exceeding 975 nm but not exceeding 1 150 nm and having any of the following:

1. A “pulse duration” equal to or exceeding 1 ns but not exceeding 1 μs, and having any of the following:

a. A single transverse mode output and having any of the following:

1. A ‘wall-plug efficiency’ exceeding 12 % and an “average output power” exceeding 10 W and capable of operating at a pulse repetition frequency greater than 1 kHz; or

2. An “average output power” exceeding 20 W; or

b. A multiple transverse mode output and having any of the following:

1. A ‘wall-plug efficiency’ exceeding 18 % and an “average output power” exceeding 30W;

2. A “peak power” exceeding 200 MW; or

3. An “average output power” exceeding 50 W; or

2. A “pulse duration” exceeding 1 μs and having any of the following:

a. A single transverse mode output and having any of the following:

1. A ‘wall-plug efficiency’ exceeding 12 % and an “average output power” exceeding 10 W and capable of operating at a pulse repetition frequency greater than 1 kHz; or

2. An “average output power” exceeding 20 W; or

b. A multiple transverse mode output and having any of the following:

1. A ‘wall-plug efficiency’ exceeding 18 % and an “average output power” exceeding 30 W; or

2. An “average output power” exceeding 500 W;

e. Non-”tunable” continuous wave “(CW) lasers”, having an output wavelength exceeding 975 nm but not exceeding 1 150 nm and having any of the following:

1. A single transverse mode output and having any of the following:

a. A ‘wall-plug efficiency’ exceeding 12 % and an “average output power” exceeding 10 W and capable of operating at a pulse repetition frequency greater than 1 kHz; or

b. An “average output power” exceeding 50 W; or

2. A multiple transverse mode output and having any of the following:

a. A ‘wall-plug efficiency’ exceeding 18 % and an “average output power” exceeding 30 W; or

b. An “average output power” exceeding 500 W;

Note: X.A.IV.005.e.2.b does not control multiple transverse mode, industrial “lasers” with output power less than or equal to 2 kW with a total mass greater than 1 200kg. For the purpose of this note, total mass includes all components required to operate the “laser”, e.g., “laser”, power supply, heat exchanger, but excludes external optics for beam conditioning and/or delivery.

f. Non-”tunable” “lasers”, having a wavelength exceeding 1 400 nm, but not exceeding 1 555 nm and having any of the following:

1. An output energy exceeding 100 mJ per pulse and a pulsed “peak power” exceeding 1 W; or

2. An average or CW output power exceeding 1 W;

g. Free electron “lasers”.

Technical Note: For the purpose of X.A.IV.005 ‘Wall-plug efficiency’ is defined as the ratio of "laser" output power (or "average output power") to total electrical input power required to operate the "laser", including the power supply/conditioning and thermal conditioning/heat exchanger.

X.A.IV.006 “Magnetometers”, “Superconductive” electromagnetic sensors, and specially designed components therefor, as follows:

a. “Magnetometers”, other than those specified in the CML or in Regulation (EU) 2021/821, having a ‘sensitivity’ lower (better) than 1,0 nT (rms) per square root Hz.

Technical Note: For the purposes of X.A.IV.006.a, ‘sensitivity’ (noise level) is the root mean square of the device-limited noise floor which is the lowest signal that can be measured.

b. “Superconductive” electromagnetic sensors, components manufactured from “superconductive” materials:

1. Designed for operation at temperatures below the ‘critical temperature’ of at least one of their “superconductive” constituents (including Josephson effect devices or “superconductive” quantum interference devices (SQUIDS));

2. Designed for sensing electromagnetic field variations at frequencies of 1 kHz or less; and

3. Having any of the following characteristics:

a. Incorporating thin-film SQUIDS with a minimum feature size of less than 2 μm and with associated input and output coupling circuits;

b. Designed to operate with a magnetic field slew rate exceeding 1 x 10^6 magnetic flux quanta per second;

c. Designed to function without magnetic shielding in the earth's ambient magnetic field; or

d. Having a temperature coefficient less (smaller) than 0,1 magnetic flux quantum/K.

X.A.IV.007 Gravity meters (gravimeters) for ground use, other than those specified in the CML or in Regulation (EU) 2021/821, as follows:

a. Having a static accuracy of less (better) than 100 μGal; or

b. Being of the quartz element (Worden) type.

X.A.IV.008 Radar systems, equipment and major components, other than those specified in the CML or in Regulation (EU) 2021/821, and specially designed components therefor, as follows:

a. Airborne radar equipment, other than those specified in the CML or in Regulation (EU) 2021/821, and specially designed components therefor;

b. "Space-qualified" "laser" radar or Light Detection and Ranging (LIDAR) equipment specially designed for surveying or for meteorological observation;

c. Millimeter wave enhanced vision radar imaging systems specially designed for rotary wing aircraft and having all of the following:

1. Operates at a frequency of 94 GHz;

2. An average output power of less than 20 mW;

3. Radar beam width of 1 degree; and

4. Operating range equal to or greater than 1 500 m.

X.A.IV.009 Specific processing equipment, as follows:

a. Seismic detection equipment not controlled by X.A.IV.009.c;

b. Radiation hardened TV cameras, other than those specified in the CML or in Regulation (EU) 2021/821; or

c. Seismic intrusion detection systems that detect, classify and determine the bearing on the source of a detected signal.

X.B.IV.001 Equipment, including tools, dies, fixtures or gauges, and other specially designed components and accessories therefor, specially designed or modified for any of the following:

a. For the manufacture or inspection of:

1. Free electron “laser” magnet wigglers;

2. Free electron “laser” photo injectors;

b. For the adjustment, to required tolerances, of the longitudinal magnetic field of free electron “lasers”.

X.C.IV.001 Optical sensing fibres that are modified structurally to have a ‘beat length’ of less than 500 mm (high birefringence) or optical sensor materials not described in 6C002.b ([19]) and having a zinc content of equal to or more than 6 % by ‘mole fraction.’

Technical Note: For the purpose of X.C.IV.001:

1) ‘Mole fraction’ is defined as the ratio of moles of ZnTe to the sum of the moles of CdTe and ZnTe present in the crystal.

2) ‘Beat length’ is the distance over which two orthogonally polarised signals, initially in phase, must pass in order to achieve a 2 Pi radian(s) phase difference.

X.C.IV.002 Optical materials, as follows:

a. Low optical absorption materials, as follows:

1. Bulk fluoride compounds containing ingredients with a purity of 99,999 % or better; or

Note: X.C.IV.002.a.1 controls fluorides of zirconium or aluminium and variants.

2. Bulk fluoride glass made from compounds controlled by 6C004.e.1 ([20]);

b. ‘Optical fibre preforms’ made from bulk fluoride compounds containing ingredients with a purity of 99,999 % or better, specially designed for the manufacture of ‘fluoride fibres’ controlled by X.A.IV.004.b.

Technical Note: For the purpose of X.C.IV.002:

1) ‘Fluoride fibres’ are fibres manufactured from bulk fluoride compounds.

2) ‘Optical fibre preforms’ are bars, ingots, or rods of glass, plastic or other materials that have been specially processed for use in fabricating optical fibres. The characteristics of the preform determine the basic parameters of the resultant drawn optical fibres.

X.D.IV.001 “Software”, other than those specified in the CML or in Regulation (EU) 2021/821, specially designed for the “development”, “production”, or “use” of goods controlled by 6A002, 6A003 ([21]), X.A.IV.001, X.A.IV.006, X.A.IV.007, or X.A.IV.008.

X.D.IV.002 “Software” specially designed for the “development” or “production”of equipment controlled by X.A.IV.002, X.A.IV.004, or X.A.IV.005.

X.D.IV.003 Other “software”, as follows:

a. Air Traffic Control (ATC) “software” application “programs” hosted on general purpose computers located at Air Traffic Control centres, and capable of

19 Ref. Annex I to Regulation (EU) 2021/821
20 Ref. Annex I to Regulation (EU) 2021/821
21 Ref. Annex I to Regulation (EU) 2021/821

automatically handing over primary radar target data (if not correlated with secondary surveillance radar (SSR) data) from the host ATC centre to another ATC centre;

b. "Software" specially designed for seismic intrusion detection systems in X.A.IV.009.c; or

c. "Source code" specially designed for seismic intrusion detection systems in X.A.IV.009.c.

X.E.IV.001 "Technology" for the "development", "production" or "use" of equipment controlled by X.A.IV.001, X.A.IV.006, X.A.IV.007, X.A.IV.008 or X.A.IV.009.c.

X.E.IV.002 "Technology" for the "development" or "production" of equipment, materials or "software" controlled by X.A.IV.002, X.A.IV.004, or X.A.IV.005, X.B.IV.001, X.C.IV.001, X.C.IV.002, or X.D.IV.003.

X.E.IV.003 Other "technology" as follows:

a. Optical fabrication technologies for serially producing optical components at a rate exceeding 10 m^2 of surface area per year on any single spindle and having all of the following:

1. Area exceeding 1 m^2; and

2. Surface figure exceeding $\lambda/10$ (rms) at the designed wavelength;

b. "Technology" for optical filters with a bandwidth equal to or less than 10 nm, a field of view (FOV) exceeding 40° and a resolution exceeding 0,75 line pairs per milliradian;

c. "Technology" for the "development" or "production" of cameras controlled by X.A.IV.003;

d. "Technology" "required" for the "development" or "production" of non-triaxial fluxgate "magnetometers" or non-triaxial fluxgate "magnetometer" systems, having any of the following:

1. 'Sensitivity' lower (better) than 0,05 nT (rms) per square root Hz at frequencies of less than 1 Hz; or

2. 'Sensitivity' lower (better) than 1 x 10^{-3} nT (rms) per square root Hz at frequencies of 1 Hz or more.

e. "Technology" "required" for the "development" or "production" of infrared up-conversion devices having all of the following:

1. A response in the wavelength range exceeding 700 nm but not exceeding 1 500 nm; and

2. A combination of an infrared photodetector, light emitting diode (OLED), and nanocrystal to convert infrared light into visible light.

Technical Note: For the purposes of X.E.IV.003, 'sensitivity' (or noise level) is the root mean square of the device-limited noise floor which is the lowest signal that can be measured.

Category V – Navigation and Avionics

X.A.V.001 Airborne communication equipment, all "aircraft" inertial navigation systems, and other avionic equipment, including components, other than those specified in the CML or in Regulation (EU) 2021/821.

Note 1: X.A.V.001. does not control headsets or microphones.

Note 2: X.A.V.001. does not control goods for the personal use of the natural persons.

X.B.V.001 Other equipment specially designed for the test, inspection, or "production" of navigation and avionics equipment.

X.D.V.001 "Software", other than specified in the CML or in Regulation (EU) 2021/821, for the "development", "production", or "use" of navigation, airborne communication and other avionics.

X.E.V.001 "Technology", other than specified in the CML or in Regulation (EU) 2021/821, for the "development", "production" or "use" of navigation, airborne communication, and other avionics equipment.

Category VI – Marine

X.A.VI.001 Vessels, marine systems or equipment, and specially designed components therefor, components and accessories as follows:

a. Underwater vision systems, as follows:

1. Television systems (comprising camera, lights, monitoring and signal transmission equipment) having a limiting resolution when measured in air of more than 500 lines and specially designed or modified for remote operation with a submersible vehicle; or

2. Underwater television cameras having a limiting resolution when measured in air of more than 700 lines;

Technical Note: Limiting resolution in television is a measure of horizontal resolution usually expressed in terms of the maximum number of lines per picture height discriminated on a test chart, using IEEE Standard 208/1960 or any equivalent standard.

b. Photographic still cameras specially designed or modified for underwater use, having a film format of 35 mm or larger, and having autofocusing or remote focusing specially designed for underwater use;

c. Stroboscopic light systems, specially designed or modified for underwater use, capable of a light output energy of more than 300 J per flash;

d. Other underwater camera equipment, other than those specified in the CML or in Regulation (EU) 2021/821;

e. Not used;

f. Vessels (surface or underwater), including inflatable boats, and specially designed components therefor, other than those specified in the CML or in Regulation (EU) 2021/821;

Note: X.A.VI.001.f does not control vessels on temporary sojourn, used for private transport or for the transport of passengers or goods from or through the customs territory of the Union.

g. Marine engines (both inboard and outboard) and submarine engines and specially designed components therefor, other than those specified in the CML or in Regulation (EU) 2021/821;

h. Self-contained underwater breathing apparatus (scuba gear) and accessories therefor, other than those specified in the CML or in Regulation (EU) 2021/821;

i. Life jackets, inflation cartridges, dive compasses and dive computers;

Note: X.A.VI.001.i does not control goods for the personal use of the natural persons.

j. Underwater lights and propulsion equipment; or

Note: X.A.VI.001.j does not control goods for the personal use of the natural persons.

k. Air compressors and filtration system specially designed for filling air cylinders.

X.D.VI.001 "Software" specially designed or modified for the "development", "production" or "use" of equipment controlled by X.A.VI.001.

X.D.VI.002 "Software" specially designed for the operation of unmanned submersible vehicles used in the oil and gas industry.

X.E.VI.001 "Technology" for the "development", "production" or "use" of equipment controlled by X.A.VI.001.

Category VII – Aerospace and Propulsion

X.A.VII.001 Diesel engines, and tractors and specially designed components therefor, other than those specified in the CML or in Regulation (EU) 2021/821:

a. Diesel engines, other than those specified in the CML or in Regulation (EU) 2021/821, for trucks, tractors, and automotive applications, having an overall power output of 298 kW or more.

b. Off highway wheel tractors of carriage capacity 9 tonnes or more; and major components and accessories, other than those specified in the CML or in Regulation (EU) 2021/821.

c. Road tractors for semi-trailers, with single or tandem rear axles rated for 9 tonnes per axel or more and specially designed major components.

Note: X.A.VII.001.b and X.A.VII.001.c do not control vehicles on temporary sojourn, used for private transport or for the transport of passengers or goods from or through the customs territory of the Union.

X.A.VII.002 Gas turbine engines and components, other than those specified in the CML or in Regulation (EU) 2021/821.

a. Not used.

b. Not used.

c. Aero gas turbine engines and components specially designed therefor.

d. Not used.

e. Pressurised aircraft breathing equipment components specially designed therefor, other than those specified in the CML or in Regulation (EU) 2021/821.

X.A.VII.003 Aircraft engines, other than those specified in X.A.VII.002, the CML or in Regulation (EU) 2021/821, as follows:

a. Reciprocating or rotary internal combustion piston engines; or

b. Electric engines.

Technical Note: For the purpose of X.A.VII.003 aircrafts includes: aeroplanes, UAVs, helicopters, autogyros, hybrid aircrafts or radio-controlled models.

X.B.VII.001 Vibration test equipment and specially designed components, other than those specified in the CML or in Regulation (EU) 2021/821.

Note: X.B.VII.001. controls only equipment for the "development" or "production". It does not control condition monitoring systems.

X.B.VII.002 Specially designed equipment, tooling or fixtures for manufacturing or measuring gas turbine blades, vanes or tip shroud castings, as follows:

a. Automated equipment using non-mechanical methods for measuring airfoil wall thickness;

b. Tooling, fixtures or measuring equipment for the "laser", water jet or ECM/EDM hole drilling processes controlled by 9E003.c ([22]);

c. Ceramic core leaching equipment;

d. Ceramic core manufacturing equipment or tools;

e. Ceramic shell wax pattern preparation equipment;

f. Ceramic shell burn out or firing equipment.

X.D.VII.001 "Software", other than those specified in the CML or in Regulation (EU) 2021/821, for the "development" or "production" of equipment controlled by X.A.VII.001 or X.B.VII.001.

X.D.VII.002 "Software", for the "development" or "production" of equipment controlled by X.A.VII.002 or X.B.VII.002.

X.E.VII.001 "Technology", other than those specified in the CML or in Regulation (EU) 2021/821, for the "development" or "production" or "use" of equipment controlled by X.A.VII.001 or X.B.VII.001.

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X.E.VII.002 "Technology", for the "development", "production" or "use" of equipment controlled by X.A.VII.002 or X.B.VII.002.

X.E.VII.003 Other "technology", not described by 9E003 ([23]), as follows:

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

b. Gas bearing for turbine engine rotor assemblies.

Category VIII – Miscellaneous items

X.A.VIII.001 Equipment for oil production or oil exploration as follows:

a. Drill head integrated measurement equipment, including inertial navigation systems for measurement while drilling (MWD);

b. Gas monitoring systems and detectors therefor, designed for continuous operation and detection of hydrogen sulphide;

c. Equipment for seismological measurements, including reflection seismetics and seismic vibrators;

d. Sediment echo sounders.

X.A.VIII.002 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, including pockels cells.

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, cold atoms.

X.A.VIII.003 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 X.A.VIII.003.a to X.A.VIII.0003.e, employing any of the following material analysis techniques:

1. X-ray photo spectroscopy (XPS);

2. Energy-dispersive X-ray spectroscopy (EDX, EDS) or

3. Electron spectroscopy for chemical analysis (ESCA).

[23] Ref. Annex I to Regulation (EU) 2021/821

X.A.VIII.004 Collector equipment for metal ores in deep seabed.

X.A.VIII.005 Manufacturing equipment and machine tools as follows:

a. Additive manufacturing equipment for the "production" of metal parts;

Note: X.A.VIII.005.a only applies to the following systems:

1. Powder-bed systems using selective laser melting (SLM), laser cusing, direct metal laser sintering (DMLS) or electron beam melting (EBM); or

2. Powder-fed systems using laser cladding, direct energy deposition or laser metal deposition.

b. Additive manufacturing equipment for "energetic materials", including equipment using ultrasonic extrusion;

c. Vat photopolymerization (VVP) additive manufacturing equipment using stereo lithography (SLA) or digital light processing (DLP).

X.A.VIII.006 Equipment for the "production" of printed electronics for organic light emitting diodes (OLED), organic field-effect transistors (OFET) or organic photovoltaic cells (OPVC).

X.A.VIII.007 Equipment for the "production" of microelectromechanical systems (MEMS) using the mechanical properties of silicon, including sensors in chip format like pressure membranes, bending beams or micro adjustment devices.

X.A.VIII.008 Equipment, specially designed for the production of E-Fuels (electrofuels and synthetic fuels) or ultra efficient solar cells (efficiency > 30 %).

X.A.VIII.009 Equipment for Ultra-High-Vacuum (UHV) as follows:

a. UHV pumps (sublimation, turbomolecular, diffusion, cryogenic, ion getter);

b. UHV pressure gauges.

Note: UHV means 100 nanoPascals (nPa) or lower.

X.A.VIII.010 'Cryogenic refrigeration systems' designed to maintain temperatures below 1,1 K for 48 hrs or more and related cryogenic refrigeration equipment as follows:

a. Pulse Tubes;

b. Cryostats;

c. Dewars;

d. Gas Handling System (GHS);

e. Compressors; or

f. Control Units.

Note: 'Cryogenic refrigeration systems' include but are not limited to Dilution Refrigeration, Adiabatic Demagnisation Refrigerators and Laser Cooling Systems.

X.A.VIII.011 'Decapsulation' equipment for semiconductor devices.

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

X.A.VIII.012 High Quantum Efficiency (QE) photodetectors with a QE greater than 80 % in the wavelength range exceeding 400 nm but not exceeding 1 600 nm.

X.AVIII.013 Numerical controlled machine tools, having one or more linear axis with a travel length greater than 8 000 mm.

X.A.VIII.014 Water cannon systems for riot or crowd control, and components specially designed therefor.

Note: X.A.VIII.014 water cannon systems include, for example: vehicles or fixed stations equipped with remotely operated water cannon that are designed to protect the operator from an outside riot with features such as armor, shatter resistant windows, metal screens, bull-bars, or run-flat tires. Components specially designed for water cannons may include, for example: deck gun water nozzles, pumps, reservoirs, cameras, and lights that are hardened or shielded against projectiles, elevating masts for those items, and teleoperation systems for those items.

X.A.VIII.015 Law enforcement striking weapons, including saps, police batons, side handle batons, tonfas, sjamboks, and whips.

X.A.VIII.016 Police helmets and shields; and specially designed components, other than those specified in the CML or in Regulation (EU) 2021/821.

X.A.VIII.017 Law enforcement restraint devices, including leg irons, shackles, and handcuffs; straight jackets; stun cuffs; shock belts; shock sleeves; multipoint restraint devices such as restraint chairs; and specially designed components and accessories, other than those specified in the CML or in Regulation (EU) 2021/821.

Note: X.A.VIII.017 applies to restraint devices used in law enforcement activities. It does not apply to medical devices that are equipped to restrain patient movement during medical procedures. It does not apply to devices that confine memory impaired patients to appropriate medical facilities. It does not apply to safety equipment such as safety belts or child automobile safety seats.

X.A.VIII.018 Oil and gas exploration equipment, "software", and data, as follows (see List of Items Controlled):

a. Not used.

b. Hydraulic fracturing items, as follows:

1. Hydraulic fracturing design and analysis "software" and data;

2. Hydraulic fracturing 'proppant', 'fracking fluid', and chemical additives therefor; or

3. High pressure pumps.

Technical Note:

A 'proppant' is a solid material, typically treated sand or man-made ceramic materials, designed to keep an induced hydraulic fracture open, during or following a fracturing treatment. It is added to a 'fracking fluid' which may vary in composition depending on the type of fracturing used, and can be gel, foam or slickwater-based.

X.A.VIII.019 Specific processing equipment, as follows (see List of Items Controlled):

a. Ring magnets;

b. Not used.

X.A.VIII.020 Weapons and devices designed for the purpose of riot control or self-protection, as follows:

a. 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;

b. Kits containing all essential components for assembly of portable electric discharge weapons controlled by item X.A.VIII.020.a; or

Note: The following goods are considered to be essential components:

1. The unit producing an electric shock;

2. The switch, whether or not on a remote control; and

3. The electrodes or, where applicable, the wires through which the electrical shock is to be administered.

c. Fixed or mountable electric discharge weapons that cover a wide area and can target multiple individuals with electrical shocks.

X.A.VIII.021 Weapons and equipment disseminating incapacitating or irritating chemical substances for the purpose of riot control or self-protection and certain related substances, as follows:

a. 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;

Note 1: This item does not control equipment controlled by item ML7(e) of the CML of the European Union.

Note 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.

Note 3: In addition to relevant chemical substances, such as riot control agents or PAVA, the goods controlled by items X.A.VIII.021.c and X.A.VIII.021.d shall be deemed to be incapacitating or irritating chemical substances.

b. Pelargonic acid vanillylamide (PAVA) (CAS 2444-46-4);

c. Oleoresin capsicum (OC) (CAS 8023-77-6);

d. 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;

Note 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.

Note 2: This item does not control medicinal products for which a marketing authorisation has been granted in accordance with Union law.

e. Fixed equipment for the dissemination of incapacitating or irritating chemical substances, 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; or

Note: In addition to relevant chemical substances, such as riot control agents or PAVA, the goods controlled by items X.A.VIII.021.c and X.A.VIII.021.d shall be deemed to be incapacitating or irritating chemical substances.

f. 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;

Note 1: This item does not control equipment controlled by item ML7(e) of the CML of the European Union.

Note 2: In addition to relevant chemical substances, such as riot control agents or PAVA, the goods controlled by items X.A.VIII.021.c and X.A.VIII.021.d shall be deemed to be incapacitating or irritating chemical substances.

g. Other irritating chemical substances, and mixtures thereof containing at least 0,3 % by weight of the active substance, as follows:

1. Dibenzo[b,f][1,4]oxazepine (CR) (CAS 257-07-8);
2. 8-Methyl-N-vanillyl-trans-6-nonenamide (capsaicin) (CAS 404-86-4);
3. 8-Methyl-N-vanillylnonamide (dihydrocapsaicin) (CAS 19408-84-5);
4. N-Vanillyl-9-methyldec-7-(E)-enamide (homocapsaicin) (CAS 58493-48-4);
5. N-Vanillyl-9-methyldecanamide (homodihydrocapsaicin) (CAS 20279-06-5);
6. N-Vanillyl-7-methyloctanamide (nordihydrocapsaicin) (CAS 28789-35-7);
7. 4-Nonanolylmorpholine (MPA) (CAS 5299-64-9);
8. Cis-4-acetylaminodicyclohexylmethane (CAS 37794-87-9);
9. N,N'-Bis(isopropyl)ethylenediimine; or
10. N,N'-Bis(tert-butyl)ethylenediimine.

X.A.VIII.022 Products which could be used for the execution of human beings by means of lethal injection, as follows:

a. Short and intermediate acting barbiturate anaesthetic agents including, but not limited to:

1. Amobarbital (CAS 57-43-2);
2. Amobarbital sodium salt (CAS 64-43-7);
3. Pentobarbital (CAS 76-74-4);
4. Pentobarbital sodium salt (CAS 57-33-0);
5. Secobarbital (CAS 76-73-3);

6. Secobarbital sodium salt (CAS 309-43-3);

7. Thiopental (CAS 76-75-5); or

8. Thiopental sodium salt (CAS 71-73-8), also known as thiopentone sodium;

b. Products containing one of the anaesthetic agents listed under X.A.VIII.022.a.

X.A.VIII.023 Nettings, canopies, tents, blankets and apparel, specially designed for camouflage.

X.B.VIII.001 Specific processing equipment, as follows (see List of Items Controlled):

a. Hot cells; or

b. Glove boxes suitable for use with radioactive materials.

X.C.VIII.001 Metal powders and metal alloy powders, usable for any of the systems listed in X.A.VIII.005.a.

X.C.VIII.002 Advanced materials as follows:

a. Materials for cloaking or adaptive camouflage;

b. Metamaterials, e.g. with a negative refractive index;

c. Not used;

d. High entropy alloys (HEA);

e. Heusler compounds; or

f. Kitaev materials, including kitaev spin liquids.

X.C.VIII.003 Conjugated polymers (conductive, semiconductive, electroluminescent) for printed or organic electronics.

X.C.VIII.004 Energetic materials as follows and mixtures thereof:

a. Ammonium picrate (CAS 131-74-8);

b. Black powder;

c. Hexanitrodiphenylamine (CAS 131-73-7);

d. Difluoroamine(CAS 10405-27-3);

e. Nitrostarch (CAS9056-38-6);

f. Not used;

g. Tetranitronaphthalene;

h. Trinitroanisole;

i. Trinitronaphthalene;

j. Trinitroxylene;

k. N-pyrrolidinone; 1-methyl-2-pyrrolidinone (CAS 872-50-4);

l. Dioctylmaleate (CAS 142-16-5);

m. Ethylhexylacrylate (CAS 103-11-7);

n. Triethylaluminium (TEA) (CAS 97-93-8), trimethylaluminium (TMA) (CAS 75-24-1), and other pyrophoric metal alkyls and aryls of lithium, sodium, magnesium, zinc or boron;

o. Nitrocellulose (CAS 9004-70-0);

p. Nitroglycerin (or glyceroltrinitrate, trinitroglycerine) (NG) (CAS 55-63-0);

q. 2,4,6-trinitrotoluene (TNT) (CAS 118-96-7);

r. Ethylenediaminedinitrate (EDDN) (CAS 20829-66-7);

s. Pentaerythritoltetranitrate (PETN) (CAS 78-11-5);

t. Lead azide (CAS 13424-46-9), normal lead styphnate(CAS 15245-44-0) and basic lead styphnate (CAS 12403-82-6), and primary explosives or priming compositions containing azides or azide complexes;

u. Not used;

v. Not used;

w. Diethyldiphenylurea (CAS 85-98-3); dimethyldiphenylurea (CAS 611-92-7); methylethyldiphenyl urea.

x. N,N-diphenylurea (unsymmetrical diphenylurea) (CAS 603-54-3);

y. Methyl-N,N-diphenylurea (methyl unsymmetrical diphenylurea) (CAS 13114-72-2);

z. Ethyl-N,N-diphenylurea (ethyl unsymmetrical diphenylurea) (CAS 64544-71-4);

aa. Not used;

bb. 4-Nitrodiphenylamine (4-NDPA)(CAS 836-30-6);

cc. 2,2-dinitropropanol (CAS 918-52-5); or

dd. Not used.

X.D.VIII.001 "Software", specially designed for the "development", "production" or "use" of equipment specified in X.A.VIII.005 to X.A.VIII.0013.

X.D.VIII.002 "Software", specially designed for the "development", "production" or "use" of equipment, "electronic assemblies" or components specified in X.A.VIII.002.

X.D.VIII.003 "Software" for digital twins of additive manufacturing products or for the determination of the reliability of additive manufacturing products.

X.D.VIII.004 "Software" specially designed for the "development," "production" or "use" of commodities controlled by X.A.VIII.014.

X.D.VIII.005 Specific "software", as follows (see List of Items Controlled):

a. "Software" for neutronic calculations/modeling;

b. "Software" for radiation transport calculations/modeling; or

c. "Software" for hydrodynamic calculations/modeling.

X.E.VIII.001 "Technology" for the "development", "production" or "use" of equipment specified in X.A.VIII.001 to X.A.VIII.0013.

X.E.VIII.002 "Technology" for the "development", "production" or "use" of materials specified in X.C.VIII.002 or X.C.VIII.003

X.E.VIII.003 "Technology" for digital twins of additive manufacturing products, for the determination of the reliability of additive manufacturing products or for "software" specified in X.D.VIII.003.

X.E.VIII.004 "Technology" for the "development", "production" or "use" of "software" specified in X.D.VIII.001 to X.D.VIII.002.

X.E.VIII.005 "Technology" "required" for the "development" or "production" of commodities controlled by X.A.VIII.014.

X.E.VIII.006 "Technology" exclusively for the "development" or "production" of equipment controlled by X.A.VIII.017.

Category IX – Special Materials and Related Equipment

X.A.IX.001 Chemical agents, including tear gas formulation containing 1 % or less of orthochlorobenzalmalononitrile (CS), or 1 % or less of chloroacetophenone (CN), except in individual containers with a net weight of 20 g or less; liquid pepper except when packaged in individual containers with a net weight of 85,05 g or less; smoke bombs; non-irritant smoke flares, canisters, grenades and charges; and other pyrotechnic articles having dual military and commercial use, and components specially designed therefor, other than those specified in the CML or in Regulation (EU) 2021/821.

X.A.IX.002 Fingerprinting powders, dyes, and inks.

X.A.IX.003 Protective and detection equipment not specially designed for military use and not controlled by 1A004 or 2B351 ([24]), as follows (see List of Items Controlled), and components not specially designed for military use and not controlled by 1A004 or 2B351 therefor:

a. Personal radiation monitoring dosimeters; or

b. Equipment limited by design or function to protect against hazards specific to civil industries, such as mining, quarrying, agriculture, pharmaceuticals, medical, veterinary, environmental, waste management, or to the food industry.

Note: X.A.IX.003 does not control items for protection against chemical or biological agents that are consumer goods, packaged for retail sale or personal use, or medical products, such as latex exam gloves, latex surgical gloves, liquid disinfectant soap, disposable surgical drapes, surgical gowns, surgical foot covers, and surgical masks.

X.A.IX.004 Specific processing equipment, other than those specified in the CML or in Regulation (EU) 2021/821, as follows (see List of Items Controlled):

a. Radiation detection, monitoring and measurement equipment, other than those specified in the CML or in Regulation (EU) 2021/821; or

[24] Ref. Annex I to Regulation (EU) 2021/821

b. Radiographic detection equipment such as X-ray converters, and storage phosphor image plates.

X.B.IX.001 Specific processing equipment, other than those specified in the CML or in Regulation (EU) 2021/821, as follows (see List of Items Controlled):

a. Electrolytic cells for fluorine production, other than those specified in the CML or in Regulation (EU) 2021/821;

b. Particle accelerators;

c. Industrial process control hardware/systems designed for power industries, other than those specified in the CML or in Regulation (EU) 2021/821;

d. Freon and chilled water cooling systems capable of continuous cooling duties of 29,3 kW/hr or greater; or

e. Equipment for the production of structural composites, fibres, prepregs and preforms.

X.C.IX.001 Separate chemically defined compounds according to Note 1 to Chapters 28 and 29 of the Combined Nomenclature:

a. In concentrations of 95 % weight or greater, as follows:

1. Ethylene dichloride (CAS 107-06-2);
2. Nitromethane (CAS 75-52-5);
3. Picric acid (CAS 88-89-1);
4. Aluminium chloride (CAS 7446-70-0);
5. Arsenic (CAS 7440-38-2);
6. Arsenic trioxide (CAS 1327-53-3);
7. Bis(2-chloroethyl)ethylamine hydrochloride (CAS 3590-07-6);
8. Bis(2-chloroethyl)methylamine hydrochloride (CAS 55-86-7);
9. Tris(2-chloroethyl)amine hydrochloride (CAS 817-09-4);
10. Tributylphosphite (CAS 102-85-2);
11. Isocyanatomethane (CAS 624-83-9);
12. Quinaldine (CAS 91-63-4);
13. 2-bromochloroethane (CAS 107-04-0);
14. Benzil (CAS 134-81-6);
15. Diethyl ether (CAS 60-29-7);
16. Dimethyl ether (CAS 115-10-6);
17. Dimethylaminoethanol (CAS 108-01-0);
18. 2-methoxyethanol (CAS 109-86-4);
19. Butyrylcholinesterase (BCHE);
20. Diethylenetriamine (CAS 111-40-0);
21. Dichloromethane (CAS 75-09-2);
22. Dimethylaniline (CAS 121-69-7);

23. Ethyl bromide (CAS 74-96-4);
24. Ethyl chloride (CAS 75-00-3);
25. Ethylamine (CAS 75-04-7);
26. Hexamine (CAS 100-97-0);
27. Isopropanol (CAS 67- 63-0);
28. Isopropyl bromide (CAS 75-26-3);
29. Isopropyl ether (CAS 108-20-3);
30. Methylamine (CAS 74-89-5);
31. Methyl bromide (CAS 74-83-9);
32. Monoisopropylamine (CAS 75-31-0);
33. Obidoxime chloride (CAS 114-90-9);
34. Potassium bromide (CAS 7758-02-3);
35. Pyridine (CAS 110-86-1);
36. Pyridostigmine bromide (CAS 101-26-8);
37. Sodium bromide (CAS 7647-15-6);
38. Sodium metal (CAS 7440-23-5);
39. Tributylamine (CAS 102-82-9);
40. Triethylamine (CAS 121-44-8); or
41. Trimethylamine (CAS 75-50-3).

b. In concentrations of 90 % weight or greater, as follows:

1. Acetone (CAS 67-64-1);
2. Acetylene (CAS 74-86-2);
3. Ammonia (CAS 7664-41-7);
4. Antimony (CAS 7440-36-0);
5. Benzaldehyde (CAS 100-52-7);
6. Benzoin (CAS 119-53-9);
7. 1-Butanol (CAS 71-36-3);
8. 2-Butanol (CAS 78-92-2);
9. Iso-Butanol (CAS 78-83-1);
10. Tert-Butanol (CAS 75-65-0);
11. Calcium carbide (CAS 75-20-7);
12. Carbon monoxide (CAS 630-08-0);
13. Chlorine (CAS 7782-50-5);
14. Cyclohexanol (CAS 108-93-0);
15. Dicyclohexylamine (CAS 101-83-7);
16. Ethanol (CAS 64-17-5);

17. Ethylene (CAS 74-85-1);
18. Ethylene oxide (CAS 75-21-8);
19. Fluoroapatite (CAS 1306-05-4);
20. Hydrogen chloride (CAS 7647-01-0);
21. Hydrogen sulfide (CAS 7783-06-4);
22. Mandelic acid (CAS 90-64-2);
23. Methanol (CAS 67-56-1);
24. Methyl chloride (CAS 74-87-3);
25. Methyl iodide (CAS 74-88-4);
26. Methyl mercaptan (CAS 74-93-1);
27. Monoethyleneglycol (CAS 107-21-1);
28. Oxalyl chloride (CAS 79-37-8);
29. Potassium sulphide (CAS 1312-73-8);
30. Potassium thiocyanate (CAS 333-20-0);
31. Sodium hypochlorite (CAS 7681-52-9);
32. Sulphur (CAS 7704-34-9);
33. Sulphur dioxide (CAS 7446-09-5);
34. Sulphur trioxide (CAS 7446-11-9);
35. Thiophosphoryl chloride (CAS 3982-91-0);
36. Tri-isobutyl phosphite (CAS 1606-96-8);
37. White phosphorus (CAS 12185-10-3);
38. Yellow phosphorus (CAS 7723-14-0);
39. Mercury (CAS 7439-97-6);
40. Barium chloride (CAS 10361-37-2);
41. Sulphuric acid (CAS 7664-93-9);
42. 3,3-dimethyl-1-butene (CAS 558-37-2);
43. 2,2-dimethylpropanal (CAS 630-19-3);
44. 2,2-dimethylpropylchloride (CAS 753-89-9);
45. 2-methylbutene (CAS 26760-64-5);
46. 2-chloro-3-methylbutane (CAS 631-65-2);
47. 2,3-dimethyl-2,3-butanediol (CAS 76-09-5);
48. 2-methyl-2-butene (CAS 513-35-9);
49. Butyl lithium (CAS 109-72-8);
50. Bromo(methyl)magnesium (CAS 75-16-1);
51. Formaldehyde (CAS 50-00-0);
52. Diethanolamine (CAS 111-42-2);

53. Dimethylcarbonate (CAS 616-38-6);

54. Methyldiethanolamine hydrochloride (CAS 54060-15-0);

55. Diethylamine hydrochloride (CAS 660-68-4);

56. Diisopropylamine hydrochloride (CAS 819-79-4);

57. 3-Quinuclidinone hydrochloride (CAS 1193-65-3);

58. 3-Quinuclidinol hydrochloride (CAS 6238-13-7);

59. (R)-3- Quinuclidinol hydrochloride (CAS 42437-96-7); or

60. N,N-Diethylaminoethanol hydrochloride (CAS 14426-20-1).

X.C.IX.002 Fentanyl and its derivatives Alfentanil, Sufentanil, Remifentanil, Carfentanil, and salts thereof.

Note: X.C.IX.002 does not control products identified as consumer goods packaged for retail sale for personal use or packaged for individual use.

X.C.IX.003 Chemical precursors to Central Nervous System Acting Chemicals, as follows:

a. 4-anilino-N-phenethylpiperidine (CAS 21409-26-7); or

b. N-phenethyl-4-piperidone (CAS 39742-60-4).

Notes:

1. X.C.IX.003 does not control "chemical mixtures" containing one or more of the chemicals specified in entry X.C.IX.003 in which no individually specified chemical constitutes more than 1 % by the weight of the mixture.

2. X.C.IX.003 does not control products identified as consumer goods packaged for retail sale for personal use or packaged for individual use.

X.C.IX.004 Fibrous and filamentary materials, not controlled by 1C010 or 1C210 ([25]), for use in "composite" structures and with a specific modulus of $3{,}18 \times 10^6$ m or greater and a specific tensile strength of $7{,}62 \times 10^4$ m or greater.

X.C.IX.005 "Vaccines", "immunotoxins", 'medical products', 'diagnostic and food testing kits', as follows (see List of Items controlled):

a. "Vaccines" containing, or designed for use against, items controlled by 1C351, 1C353 or 1C354;

b. "Immunotoxins" containing items controlled by 1C351.d; or

c. 'Medical products' that contain any of the following:

1. "Toxins" controlled by 1C351.d (except for botulinum toxins controlled by 1C351.d.1, conotoxins controlled by 1C351.d.3, or items controlled for CW reasons under 1C351.d.4 or .d.5); or

2. Genetically modified organisms or genetic elements controlled by 1C353.a.3 (except for those that contain, or code for, botulinum toxins controlled by 1C351.d.1 or conotoxins controlled by 1C351.d.3);

d. 'Medical products' not controlled by X.C.IX.005.c that contain any of the following:

[25] Ref. Annex I to Regulation (EU) 2021/821

1. Botulinum toxins controlled by 1C351.d.1;

2. Conotoxins controlled by 1C351.d.3; or

3. Genetically modified organisms or genetic elements controlled by 1C353.a.3 that contain, or code for, botulinum toxins controlled by 1C351.d.1 or conotoxins controlled by 1C351.d.3; or

e. 'Diagnostic and food testing kits' containing items controlled by 1C351.d (except for items controlled for CW reasons under 1C351.d.4 or .d.5).

Technical Notes:

1. 'Medical products' are: (1) pharmaceutical formulations designed for testing and human (or veterinary) administration in the treatment of medical conditions, (2) prepackaged for distribution as clinical or medical products, and (3) approved by the European Medicines Agency (EMA) either to be marketed as clinical or medical products or for use as research new drug.

2. 'Diagnostic and food testing kits' are specifically developed, packaged and marketed for diagnostic or public health purposes. Biological toxins in any other configuration, including bulk shipments, or for any other end-uses are controlled by 1C351.

X.C.IX.006 Commercial charges and devices containing energetic materials, other than those specified in the CML or in Regulation (EU) 2021/821, and nitrogen trifluoride in a gaseous state (see List of Items Controlled):

a. Shaped charges specially designed for oil well operations, utilizing one charge functioning along a single axis, that upon detonation produce a hole, and

1. Contain any formulation of 'controlled materials';

2. Have only a uniform shaped conical liner with an included angle of 90 degrees or less;

3. Contain more than 0,010 kg but less than or equal to 0,090 kg of 'controlled materials'; and

4. Have a diameter not exceeding 114,3 cm;

b. Shaped charges specially designed for oil well operations containing less than or equal to 0,010 kg of 'controlled materials';

c. Detonation cord or shock tubes containing less than or equal to 0,064 kg/m of 'controlled materials';

d. Cartridge power devices, that contain less than or equal to 0,70 kg of 'controlled materials' in the deflagration material;

e. Detonators (electric or nonelectric) and assemblies thereof, that contain less than or equal to 0,01 kg of 'controlled materials';

f. Igniters, that contain less than or equal to 0,01 kg of 'controlled materials';

g. Oil well cartridges, that contain less than or equal to 0,015 kg of controlled "energetic materials";

h. Commercial cast or pressed boosters containing less than or equal to 1,0 kg of 'controlled materials';

i. Commercial prefabricated slurries and emulsions containing less than or equal to 10,0 kg and less than or equal to 35 % by weight of ML8 'controlled materials';

j. Cutters and severing tools containing less than or equal to 3,5 kg of 'controlled materials';

k. Pyrotechnic devices when designed exclusively for commercial purposes (e.g., theatrical stages, motion picture special effects, and fireworks displays) and containing less than or equal to 3,0 kg of 'controlled materials';

l. Other commercial explosive devices and charges not controlled by X.C.IX.006.a through .k containing less than or equal to 1,0 kg of 'controlled materials'; or

Note: X.C.IX.006.l includes automotive safety devices; extinguishing systems; cartridges for riveting guns; explosive charges for agricultural, oil and gas operations, sporting goods, commercial mining, or public works purposes; and delay tubes used in the assembly of commercial explosive devices.

m. Nitrogen trifluoride (NF_3) in a gaseous state.

Notes:

1. 'Controlled materials' means controlled energetic materials (see 1C011, 1C111, 1C239 or ML8).

2. Nitrogen trifluoride when not in a gaseous state is controlled under ML8.d by the CML.

X.C.IX.007 Mixtures not controlled by 1C350 or 1C450 ([26]) that contain chemicals controlled by 1C350 or 1C450 and medical, analytical, diagnostic, and food testing kits not controlled by 1C350 or 1C450 that contain chemicals controlled by 1C350, as follows (see List of Items Controlled):

a. Mixtures containing the following concentrations of precursor chemicals controlled by 1C350:

1. Mixtures containing 10 % or less, by weight, of any single CWC Schedule 2 chemical controlled by 1C350;

2. Mixtures containing less than 30 %, by weight, of:

a. Any single CWC Schedule 3 chemical controlled by 1C350; or

b. Any single non-CWC precursor chemical controlled by 1C350;

b. Mixtures containing the following concentrations of toxic or precursor chemicals controlled by 1C450:

1. Mixtures containing the following concentrations of CWC Schedule 2 chemicals controlled by 1C450:

[26] Ref. Annex I to Regulation (EU) 2021/821

a. Mixtures containing 1 % or less, by weight, of any single CWC Schedule 2 chemical controlled by 1C450.a.1 and a.2 (i.e., mixtures containing Amiton or PFIB); or

b. Mixtures containing 10 % or less, by weight, of any single CWC Schedule 2 chemical controlled by 1C450.b.1, b.2, b.3, b.4, b.5, or b.6;

2. Mixtures containing less than 30 %, by weight, of any single CWC Schedule 3 chemical controlled by 1C450.a.4, a.5., a.6., a.7, or 1C450.b.8;

c. 'Medical, analytical, diagnostic, and food testing kits' that contain precursor chemicals controlled by 1C350 in an amount not exceeding 300 grams per chemical.

Technical Note:

For the purpose of this entry, 'medical, analytical, diagnostic, and food testing kits' are pre-packaged materials of defined composition that are specifically developed, packaged and marketed for medical, analytical, diagnostic, or public health purposes. Replacement reagents for medical, analytical, diagnostic, and food testing kits described in X.C.IX.007.c are controlled by 1C350 if the reagents contain at least one of the precursor chemicals identified in that entry in concentrations equal to or greater than the control levels for mixtures indicated in 1C350.

X.C.IX.008 Non-fluorinated polymeric substances, not controlled by 1C008 ([27]), as follows (see List of Items Controlled):

a. Polyarylene ether ketones, as follows:

1. Polyether ether ketone (PEEK);

2. Polyether ketone ketone (PEKK);

3. Polyether ketone (PEK); or

4. Polyether ketone ether ketone ketone (PEKEKK);

b. Not used.

X.C.IX.009 Specific materials, other than those specified in the CML or in Regulation (EU) 2021/821, as follows (see List of Items Controlled):

a. Hardened steel and tungsten carbide precision ball bearings (3 mm or greater diameter);

b. 304 and 316 stainless steel plate, other than those specified in the CML or in Regulation (EU) 2021/821;

c. Monel plate;

d. Tributyl phosphate (CAS 126-73-8);

e. Nitric acid (CAS 7697-37-2) in concentrations of 20 % weight or greater;

f. Fluorine (CAS 7782-41-4); or

g. Alpha-emitting radionuclides, other than those specified in the CML or in Regulation (EU) 2021/821.

[27] Ref. Annex I to Regulation (EU) 2021/821

X.C.IX.010 Aromatic polyamides (aramids) not controlled by 1C010, 1C210 or X.C.IX.004, presented in any of the following forms (see List of Items Controlled):

a. Primary forms;

b. Filament yarn or monofilaments;

c. Filament tows;

d. Rovings;

e. Staple or chopped fibres;

f. Fabrics;

g. Pulp or flocks.

X.C.IX.011 Nanomaterials as follows (see List of Items Controlled):

a. Semiconductor nanomaterials;

b. Composite-based nanomaterials; or

c. Any of the following carbon-based nanomaterials:

1. Carbon nanotubes;

2. Carbon nanofibres;

3. Fullerenes;

4. Graphenes; or

5. Carbon onions.

Notes: For the purpose of X.C.IX.011, nanomaterial means a material that meets at least one of the following criteria:

1. Consists of particles, with one or more external dimensions in the size range 1 - 100 nm for more than 1 % of their number size distribution;

2. Has internal or surface structures in one or more dimensions in the size range 1 - 100 nm; or

3. Has a specific surface area by volume greater than 60 m^2/cm^3, excluding materials consisting of particles with a size lower than 1 nm.

X.D.IX.001 Specific "software", other than those specified in the CML or in Regulation (EU) 2021/821, as follows (see List of Items Controlled):

a. "Software" specially designed for industrial process control hardware/systems controlled by X.B.IX.001, other than those specified in the CML or in Regulation (EU) 2021/821; or

b. "Software" specially designed for equipment for the production of structural composites, fibres, prepregs and preforms controlled by X.B.IX.001, other than those specified in the CML or in Regulation (EU) 2021/821.

X.E.IX.001 "Technology" for the "development", "production", or "use" of fibrous and filamentary materials controlled by X.C.IX.004 and X.C.IX.010.

X.E.IX.002 "Technology" for the "development", "production", or "use" of nanomaterials controlled by X.C.IX.011.

Category X – Materials Processing

X.A.X.001 Explosives or detonator detection equipment, both bulk and trace based, consisting of an automated device, or combination of devices for automated decision making to detect the presence of different types of explosives, explosive residue, or detonators; and components, other than those specified in the CML or in Regulation (EU) 2021/821:

a. Explosives detection equipment for 'automated decision making' to detect and identify bulk explosives utilizing, but not limited to, X-ray (e.g., computed tomography, dual energy, or coherent scattering), nuclear (e.g., thermal neutron analysis, pulse fast neutron analysis, pulse fast neutron transmission spectroscopy, and gamma resonance absorption), or electromagnetic techniques (e.g., quadropole resonance and dielectrometry);

b. Not used;

c. Detonator detection equipment for automated decision making to detect and identify initiation devices (e.g. detonators, blasting caps) utilizing, but not limited to, X-ray (e.g. dual energy or computed tomography) or electromagnetic techniques.

Note: Explosives or detonation detection equipment in X.A.X.001 includes equipment for screening people, documents, baggage, other personal effects, cargo and/or mail.

Technical Notes:

1. *'Automated decision making is the ability of the equipment to detect explosives or detonators at the design or operator- selected level of sensitivity and provide an automated alarm when explosives or detonators at or above the sensitivity level are detected.*
2. *This entry does not control equipment that depends on operator interpretation of indicators such as inorganic/organic color mapping of the items(s) being scanned.*
3. *Explosives and detonators include commercial charges and devices controlled by X.C.VIII.004 and X.C.IX.006 and energetic materials controlled by 1C011, 1C111 and 1C239 ([28]).*

X.A.X.002 Concealed object detection equipment operating in the frequency range from 30 GHz to 3 000 GHz and having a spatial resolution of 0,1 mrad (milliradian) up to and including 1 mrad (milliradian) at a standoff distance of 100 m; and components, other than those specified in the CML or in Regulation (EU) 2021/821.

Note: Concealed object detection equipment includes but is not limited to equipment for screening people, documents, baggage, other personal effects, cargo and/or mail.

Technical Note:

The range of frequencies span what is generally considered as the millimetre-wave, submillimetre-wave and terahertz frequency regions.

[28] Ref. Annex I to Regulation (EU) 2021/821

X.A.X.003 Bearings and bearing systems not controlled by 2A001 (see List of Items Controlled):

a. Ball bearings or Solid ball bearings, having tolerances specified by the manufacturer in accordance with ABEC 7, ABEC 7P, or ABEC 7T or ISO Standard Class 4 or better (or equivalents) and having any of the following characteristics;

1. Manufactured for use at operating temperatures above 573 K (300°C) either by using special materials or by special heat treatment; or

2. With lubricating elements or component modifications that, according to the manufacturer's specifications, are specially designed to enable the bearings to operate at speeds exceeding 2,3 million 'DN';

b. Solid tapered roller bearings, having tolerances specified by the manufacturer in accordance with ANSI/AFBMA Class 00 (inch) or Class A (metric) or better (or equivalents) and having either of the following characteristics:

1. With lubricating elements or component modifications that, according to the manufacturer's specifications, are specially designed to enable the bearings to operate at speeds exceeding 2,3 million 'DN'; or

2. Manufactured for use at operating temperatures below 219 K (-54°C) or above 423 K (150°C);

c. Gas-lubricated foil bearing manufactured for use at operating temperatures of 561 K (288°C) or higher and a unit load capacity exceeding 1 MPa;

d. Active magnetic bearing systems;

e. Fabric-lined self-aligning or fabric-lined journal sliding bearings manufactured for use at operating temperatures below 219 K (-54°C) or above 423 K (150°C).

Technical Notes:

1. 'DN' is the product of the bearing bore diameter in mm and the bearing rotational velocity in rpm.

2. Operating temperatures include those temperatures obtained when a gas turbine engine has stopped after operation

X.A.X.004 Piping, fittings and valves made of, or lined with stainless, copper-nickel alloy or other alloy steel containing 10 % or more nickel and/or chromium:

a. Pressure tube, pipe, and fittings of 200 mm or more inside diameter, and suitable for operation at pressures of 3,4 MPa or greater;

b. Pipe valves having all of the following characteristics that are not controlled by 2B350.g ([29]):

1. A pipe size connection of 200 mm or more inside diameter; and

2. Rated at 10,3 MPa or more.

Notes:

[29] Ref. Annex I to Regulation (EU) 2021/821

1. See X.D.X.005 for "software" for items controlled under this entry.

2. See 2E001 ("development"), 2E002 ("production"), and X.E.X.003 ("use") for technology for items controlled under this entry.

3. See related controls 2A226, 2B350 and X.B.X.010.

X.A.X.005 Pumps designed to move molten metals by electromagnetic forces.

Notes:

1. See X.D.X.005 for "software" for items controlled under this entry.

2. See 2E001 ("development"), 2E002 ("production"), and X.E.X.003 ("use") for "technology" for items controlled under this entry.

3. Pumps for use in liquid-metal-cooled reactors are controlled by 0A001.

X.A.X.006 'Portable electric generators' and specially designed components.

Technical Note:

'Portable electric generators' – The generators that are in X.A.X.006 are portable – 2 268 kg or less on wheels or transportable in a 2,5 tonnes truck without a special set up requirement.

X.A.X.007 Specific processing equipment, other than those specified in the CML or in Regulation (EU) 2021/821, as follows (see List of Items Controlled):

a. Bellows sealed valves;

b. Not used.

X.B.X.001 'Continuous flow reactors' and their 'modular components'.

Technical Notes:

1. For the purposes of X.B.X.001, 'continuous flow reactors' consist in plug and play systems where reactants are continuously fed into the reactor and the resultant product is collected at the outlet.

2. For purposes of X.B.X.001, 'modular components' are fluidic modules, liquid pumps, valves, packed-bed modules, mixer modules, pressure gauges, liquid-liquid separators, etc.

X.B.X.002 Nucleic acid assemblers and synthesizers not controlled by 2B352.i, which are partly or entirely automated, and designed to generate nucleic acids greater than 50 bases.

X.B.X.003 Automated peptide synthesizers capable to work under controlled atmosphere conditions.

X.B.X.004 Numerical control units for machine tools and "numerically controlled" machine tools, other than those specified in the CML or in Regulation (EU) 2021/821 (see List of Items Controlled):

a. "Numerical control" units for machine tools:

1. Having four interpolating axes that can be coordinated simultaneously for contouring control; or

2. Having two or more axes that can be coordinated simultaneously for contouring control and a minimum programmable increment better (less) than 0,001 mm;

3. “Numerical control” units for machine tools having two, three or four interpolating axes that can be coordinated simultaneously for contouring control, and capable of receiving directly (on-line) and processing computer-aided-design (CAD) data for internal preparation of machine instructions; or

b. Motion control boards specially designed for machine tools and having any of the following characteristics:

1. Interpolation in more than four axes;

2. Capable of real-time processing of data to modify tool path, feed rate and spindle data, during the machining operation, by any of the following:

a. Automatic calculation and modification of part program data for machining in two or more axes by means of measuring cycles and access to source data; or

b. Adaptive control with more than one physical variable measured and processed by means of a computing model (strategy) to change one or more machining instructions to optimize the process; or

3. Capable of receiving and processing CAD data for internal preparation of machine instructions;

c. “Numerically controlled” machine tools that, according to the manufacturer's technical specifications, can be equipped with electronic devices for simultaneous contouring control in two or more axes and that have both of the following characteristics:

1. Two or more axes that can be coordinated simultaneously for contouring control; and

2. Positioning accuracies according to ISO 230/2 (2006), with all compensations available:

a. Better than 15 μm along any linear axis (overall positioning) for grinding machines;

b. Better than 15 μm along any linear axis (overall positioning) for milling machines; or

c. Better than 15 μm along any linear axis (overall positioning) for turning machines; or

d. Machine tools, as follows, for removing or cutting metals, ceramics or composites, that, according to the manufacturer's technical specifications, can be equipped with electronic devices for simultaneous contouring control in two or more axes:

1. Machine tools for turning, grinding, milling or any combination thereof, having two or more axes that can be coordinated simultaneously for contouring control and having any of the following characteristics:

a. One or more contouring “tilting spindles”;

Note: X.B.X.004.d.1.a. applies to machine tools for grinding or milling only.

b. "Camming" (axial displacement) in one revolution of the spindle less (better) than 0,0006 mm total indicator reading (TIR);

Note: X.B.X.004.d.1.b. applies to machine tools for turning only.

c. "Run-out" (out-of-true running) in one revolution of the spindle less (better) than 0,0006 mm total indicator reading (TIR); or

d. The positioning accuracies, with all compensations available, are less (better) than: 0,001° on any rotary axis;

2. Electrical discharge machines (EDM) of the wire feed type that have five or more axes that can be coordinated simultaneously for contouring control.

X.B.X.005 Non-"numerically controlled" machine tools for generating optical quality surfaces, (see List of Items Controlled) and specially designed components therefor:

a. Turning machines using a single point cutting tool and having all of the following characteristics:

1. Slide positioning accuracy less (better) than 0,0005 mm per 300 mm of travel;

2. Bidirectional slide positioning repeatability less (better) than 0,00025 mm per 300 mm of travel;

3. Spindle "run-out" and "camming" less (better) than 0,0004 mm total indicator reading (TIR);

4. Angular deviation of the slide movement (yaw, pitch and roll) less (better) than 2 seconds of arc, TIR, over full travel; and

5. Slide perpendicularity less (better) than 0,001 mm per 300 mm of travel;

Technical Note:

The bidirectional slide positioning repeatability (R) of an axis is the maximum value of the repeatability of positioning at any position along or around the axis determined using the procedure and under the conditions specified in part 2.11 of ISO 230/2: 1988.

b. Fly cutting machines having all of the following characteristics:

1. Spindle "run-out" and "camming" less (better) than 0,0004 mm TIR; and

2. Angular deviation of slide movement (yaw, pitch and roll) less (better) than 2 seconds of arc, TIR, over full travel.

X.B.X.006 Gearmaking and/or finishing machinery not controlled by 2B003 capable of producing gears to a quality level of better than AGMA 11.

X.B.X.007 Dimensional inspection or measuring systems or equipment not controlled by 2B006 or 2B206, as follows (see List of Items Controlled):

a. Manual dimensional inspection machines, having both of the following characteristics:

1. Two or more axes; and

2. A measurement uncertainty equal to or less (better) than (3 + L/300) μm in any axes (L measured length in mm).

X.B.X.008 "Robots" not controlled by 2B007 or 2B207 that are capable of employing feedback information in real-time processing from one or more sensors to generate or modify programs or to generate or modify numerical program data.

X.B.X.009 Assemblies, circuit boards or inserts specially designed for machine tools controlled by X.B.X.004, or for equipment controlled by X.B.X.006, X.B.X.007 or X.B.X.008:

a. Spindle assemblies, consisting of spindles and bearings as a minimal assembly, with radial ("run-out") or axial ("camming") axis motion in one revolution of the spindle less (better) than 0,0006 mm total indicator reading (TIR);

b. Single point diamond cutting tool inserts, having all of the following characteristics:

1. Flawless and chip-free cutting edge when magnified 400 times in any direction;

2. Cutting radius from 0,1 to 5 mm inclusive; and

3. Cutting radius out-of-roundness less (better) than 0,002 mm TIR.

c. Specially designed printed circuit boards with mounted components capable of upgrading, according to the manufacturer's specifications, "numerical control" units, machine tools or feed-back devices to or above the levels specified in X.B.X.004, X.B.X.006, X.B.X.007, X.B.X.008, or X.B.X.009.

Technical Note:

This entry does not control measuring interferometer systems, without closed or open loop feedback, containing a laser to measure slide movement errors of machine-tools, dimensional inspection machines or similar equipment.

X.B.X.010 Specific processing equipment, other than those specified in the CML or in Regulation (EU) 2021/821, as follows (see List of Items Controlled):

a. Isostatic presses, other than those specified in the CML or in Regulation (EU) 2021/821;

b. Bellows manufacturing equipment, including hydraulic forming equipment and bellows forming dies;

c. Laser welding machines;

d. MIG welders;

e. E-beam welders;

f. Monel equipment, including valves, piping, tanks and vessels;

g. 304 and 316 stainless steel valves, piping, tanks and vessels;

Note: Fittings are considered part of piping for purposes of X.B.X.010.g.

h. Mining and drilling equipment, as follows:

1. Large boring equipment capable of drilling holes greater than 61 cm in diameter;

2. Large earth-moving equipment used in the mining industry;

i. Electroplating equipment designed for coating parts with nickel or aluminium;

j. Pumps designed for industrial service and for use with an electrical motor of 5 HP or greater;

k. Vacuum valves, piping, flanges, gaskets and related equipment specially designed for use in high-vacuum service, other than those specified in the CML or in Regulation (EU) 2021/821;

l. Spin forming and flow forming machines, other than those specified in the CML or in Regulation (EU) 2021/821;

m. Centrifugal multiplane balancing machines, other than those specified in the CML or in Regulation (EU) 2021/821; or

n. Austenitic stainless steel plate, valves, piping, tanks and vessels.

X.B.X.011 Floor-mounted fume hoods (walk-in style) with a minimum nominal width of 2,5 metres.

X.B.X.012 Class II biosafety cabinets and glove boxes.

X.B.X.013 Batch centrifuges with a rotor capacity of 4 litres or greater, usable with biological materials.

X.B.X.014 Fermenters with an internal volume of 10–20 litres, usable with biological materials.

X.B.X.015 Reaction vessels, reactors, agitators, heat exchangers, condensers, pumps (including single seal pumps), valves, storage tanks, containers, receivers, and distillation or absorption columns that meet performance parameters of the control 2B350 ([30]), regardless of their materials of construction.

X.B.X.016 Conventional or turbulent air-flow clean-air rooms and self-contained fan-HEPA filter units that may be used for P3 or P4 (BSL 3, BSL 4, L3, L4) containment facilities.

X.B.X.017 Vacuum pumps with a manufacturer's specified maximum flow-rate greater than 1 m^3/h (under standard temperature and pressure conditions), casings (pump bodies), preformed casing-liners, impellers, rotors, and jet pump nozzles designed for such pumps, in which all surfaces that come into direct contact with the chemicals being processed are made from controlled materials.

X.B.X.018 Laboratory equipment, including parts and accessories for such equipment, for the analysis or detection, destructive or non-destructive, of chemical substances.

X.B.X.019 Whole chlor-alkali electrolysis cells – mercury, diaphragm, and membrane.

X.B.X.020 Titanium electrodes (including those with coatings produced from other metal oxides), specially designed for use in chlor-alkali cells.

X.B.X.021 Nickel electrodes (including those with coatings produced from other metal oxides), specially designed for use in chlor-alkali cells.

30 Ref. Annex I to Regulation (EU) 2021/821

X.B.X.022 Bipolar titanium nickel electrodes (including those with coatings produced from other metal oxides), specially designed for use in chlor-alkali cells.

X.B.X.023 Asbestos diaphragms specially designed for use in chlor-alkali cells.

X.B.X.024 Fluoropolymer based diaphragms specially designed for use in chlor-alkali cells.

X.B.X.025 Fluoropolymer based ion exchange membranes specially designed for use in chlor-alkali cells.

X.B.X.026 Compressors specially designed to compress wet or dry chlorine, regardless of material of construction.

X.B.X.027 Microwave reactors – Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating.

X.D.X.001 "Software" specially designed or modified for the "development", "production" or "use" of equipment controlled by X.A.X.001.

X.D.X.002 "Software" "required" for the "development", "production" or "use" of concealed object detection equipment controlled by X.A.X.002.

X.D.X.003 "Software" specially designed for the "development", "production", or "use" of equipment controlled by X.B.X.004, X.B.X.006, or X.B.X.007, X.B.X.008, and X.B.X.009.

X.D.X.004 Specific "software", as follows (see List of Items Controlled):

a. "Software" to provide adaptive control and having both of the following characteristics:

1. For flexible manufacturing units (FMUs); and

2. Capable of generating or modifying, in real-time processing, programs or data by using the signals obtained simultaneously by means of at least two detection techniques, such as:

a. Machine vision (optical ranging);

b. Infrared imaging;

c. Acoustical imaging (acoustical ranging);

d. Tactile measurement;

e. Inertial positioning;

f. Force measurement; and

g. Torque measurement.

Note: X.D.X.004.a does not control "software" which only provides rescheduling of functionally identical equipment within 'flexible manufacturing units' using pre-stored part programs and a pre-stored strategy for the distribution of the part programs.

b. Not used.

X.D.X.005 "Software" specially designed or modified for the "development," "production," or "use" of items controlled by X.A.X.004 or X.A.X.005.

Note: See 2E001 ("development") for "technology" for "software" controlled under this entry.

X.D.X.006 "Software" specially designed for the "development" or "production" of portable electric generators controlled by X.A.X.006.

X.E.X.001 "Technology" "required" for the "development," "production" or "use" of equipment controlled by X.A.X.002 or "required" for the "development" of "software" controlled by X.D.X.002.

Note: See X.A.X.002 and X.D.X.002 for related commodity and "software" controls.

X.E.X.002 "Technology" for the "use" of equipment controlled by X.B.X.004, X.B.X.006, X.B.X.007, or X.B.X.008.

X.E.X.003 "Technology" according to the General Technology Note for the "use" of equipment controlled by X.A.X.004 or X.A.X.005.

X.E.X.004 "Technology" for the "use" of portable electric generators controlled by X.A.X.006.

Part B

1. Semiconductor devices

CN Code	Description
8541 10	Diodes, other than photosensitive or light-emitting diodes (LED)
8541 21	Transistors, other than photosensitive transistors with a dissipation rate of less than 1 W
8541 29	Other transistors, other than photosensitive transistors
8541 49	Photosensitive semiconductor devices (excl. Photovoltaic generators and cells)
8541 51	Other semiconductor devices: Semiconductor-based transducers
8541 59	Other semiconductor devices
8541 60	Mounted piezo-electric crystals
8541 90	Semiconductor devices: Parts

2. Electronic integrated circuits

CN Code	Description
8542 31	Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits
8542 32	Memories
8542 33	Amplifiers
8542 39	Other Electronic Integrated Circuits
8542 90	Electronic integrated circuits: Parts

3. Photographic cameras

CN Code	Description
9006 30	Cameras specially designed for underwater use, for aerial survey or for medical or surgical examination of internal organs; comparison cameras for forensic or criminological purposes

4. Other electrical/magnetic components

CN Code	Description
8505 11	Permanent magnets and articles intended to become permanent magnets after magnetisation; of metal
8532 24	Ceramic dielectric multilayer capacitors
8536 50	Other switches
8536 69	Plugs and sockets
8536 90	Other apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, relays, fuses, surge suppressors, plugs, sockets, lamp holders and other connectors, junction boxes), for a voltage not exceeding 1 000 V; connectors for optical fibres, optical fibre bundles or cables
8548 00	Electrical parts of machinery or apparatus, not specified or included elsewhere in Chapter 85

5. Machines for additive manufacturing

CN Code	Description
8485 20	Machines for additive manufacturing by plastics or rubber deposit
8485 30	Machines for additive manufacturing by plaster, cement, ceramics or glass deposit

8485 90	Parts of machines for additive manufacturing

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ANNEX III

In Annex IX to Regulation (EU) No 833/2014, the following is added:

‘ANNEX IX

C. Model for sale, supply or transfer notification, application and authorisation forms (referred to in Article 12b(1) of this Regulation)

The export authorisation is valid in all Member States of the European Union until its expiry date.

<table>
<tr><td colspan="5">Notification pursuant to Article 12b(1) Regulation (EU) 833/2014</td></tr>
<tr><td rowspan="2">1</td><td rowspan="2">1. Exporter</td><td>2. Identification number</td><td colspan="2">3. Expiry date (if applicable)</td></tr>
<tr><td colspan="2">4. Contact point details</td></tr>
<tr><td rowspan="8"></td><td>5. Consignee</td><td colspan="3" rowspan="2">6. Issuing authority</td></tr>
<tr><td rowspan="3">7. Agent/Representative (if different from exporter)</td></tr>
<tr><td colspan="2">8. Country of consignment</td><td>Code[1]</td></tr>
<tr><td rowspan="4">9. End user (if different from consignee)</td><td>10. Member State of current or future location of the items</td><td>Code[2]</td></tr>
<tr><td>11. Member State of intended entry into the customs export procedure</td><td>Code[2]</td></tr>
<tr><td>1</td><td>12. Country of final destination</td><td>Code[2]</td></tr>
<tr><td>Confirm that the end user is non military</td><td>Yes/No</td></tr>
</table>

[1] See Regulation (EC) No 1172/95 (OJ L 118, 25.5.1995, p. 10).

<table>
<tr><td rowspan="6"></td><td colspan="3" rowspan="3">13. Description of the items[1]</td><td>14. Country of origin</td><td>Code[2]</td></tr>
<tr><td colspan="2">15. Harmonised System or Combined Nomenclature Code (if applicable with 8 digit; CAS number if available)</td><td>16. Control list no (for listed items)</td></tr>
<tr><td colspan="2">17. Currency and Value</td><td>18. Quantity of the items</td></tr>
<tr><td>19. End use</td><td>Confirm that the end use is non military</td><td>Yes/No</td><td>20. Contract date (if applicable)</td><td>21. Customs export procedure</td></tr>
<tr><td colspan="5">22. Additional information:</td></tr>
</table>

	Available for pre-printed information At discretion of Member States	
		For completion by issuing authority Signature Issuing Authority Stamp
		Date

[1] If needed, this description may be given in one or more attachments to this form (1bis). In this case, indicate the exact number of attachments in this box. The description should be as precise as possible and integrate, where relevant, the CAS or other references for chemical items in particular.

1 **Bis**	1. Exporter	2. Identification number	
	13. Description of the items	**14. Country of origin**	**Code[2]**
		15. Commodity code (if applicable with 8 digit; CAS number if available)	16. Control list no (for listed items)
		17. Currency and Value	18. Quantity of the items
	13. Description of the items	**14. Country of origin**	**Code[2]**
		15. Commodity code (if applicable with 8 digit; CAS number if available)	16. Control list no (for listed items)
		17. Currency and Value	18. Quantity of the items
	13. Description of the items	**14. Country of origin**	**Code[2]**
		15. Commodity code	16. Control list no
		17. Currency and value	18. Quantity of the items
	13. Description of the items	**14. Country of origin**	**Code[2]**
		15. Commodity code	16. Control list no
		17. Currency and value	18. Quantity of the items
	13. Description of the items	**14. Country of origin**	**Code[2]**
		15. Commodity code	16. Control list no
		17. Currency and value	18. Quantity of the items
	13. Description of the items	**14. Country of origin**	**Code[2]**
		15. Commodity code	16. Control list no
		17. Currency and value	18. Quantity of the items

Note: In part 1 of column 24, write the quantity still available and in part 2 of column 24, write the quantity deducted on this occasion.			
23. Net quantity/value (Net mass/other unit with indication of unit)		26. Customs document (Type and number) or extract (Nr) and date of deduction	27. Member state, name and signature, stamp of deduction
24. In numbers	25. In words for quantity/value deducted		
1.			
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ANNEX IV

Annex XI to Regulation (EU) No 833/2014 is replaced by the following:

‘ANNEX XI

List of goods and technologies referred to in Article 3c(1) – Part A

CN Code	Description
88	Aircraft, spacecraft, and parts thereof

List of goods and technologies referred to in Article 3c(1) – Part B

CN Code	Description
ex 2710 19 83	Hydraulic oils for the usage in vehicles of Chapter 88
ex 2710 19 99	Other lubricating oils and other oils for use in aviation
4011 30 00	New pneumatic tyres of rubber, of a kind used on aircraft
ex 6813 20 00	Brake discs and pads for use on aircraft
6813 81 00	Brake linings and pads
8517 71 00	Aerials and aerial reflectors of all kinds; parts suitable for use therewith
ex 8517 79 00	Other parts related to aerials
9024 10 00	Machines and appliances for testing the hardness, strength, compressibility, elasticity or other mechanical properties of materials: Machines and appliances for testing metals
9026 00 00	Instruments and apparatus for measuring or checking the flow, level, pressure or other variables of liquids or gases (for example, flow meters, level gauges, manometers, heat meters), excluding instruments and apparatus of heading 9014, 9015, 9028 or 9032

List of goods and technologies referred to in Article 3c(1) – Part C

CN Code	Description
840710	spark-ignition reciprocating or rotary internal combustion piston engine, for aircraft

840910	parts suitable for use solely or principally with internal combustion piston engine for aircraft, n.e.s.

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ANNEX V

In Annex XV to Regulation (EU) No 833/2014, the following entities are added:

‘NTV/NTV Mir

Rossiya 1

REN TV

Pervyi Kanal’

ANNEX VI

Part B of Annex XVII to Regulation (EU) No 833/2014 is replaced as follows:

‘ANNEX XVII

LIST OF IRON AND STEEL PRODUCTS REFERRED TO IN ARTICLE 3g – Part B

CN Code	Description
7206	iron and non-alloy steel in ingots or other primary forms (excl. remelting scrap ingots, products obtained by continuous casting and iron of heading 7203)
7207	semi-finished products of iron or non-alloy steel
7208	flat-rolled products of iron or non-alloy steel, of a width >= 600 mm, hot-rolled, not clad, plated or coated
7209	flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, cold-rolled "cold-reduced", not clad, plated or coated
7210	flat-rolled products of iron or non-alloy steel, of a width >= 600 mm, hot-rolled or cold-rolled "cold-reduced", clad, plated or coated
7211	flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", not clad, plated or coated
7212	flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", clad, plated or coated
7213	bars and rods of iron or non-alloy steel, hot-rolled, in irregularly wound coils
7214	bars and rods, of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but incl. those twisted after rolling (excl. in irregularly wound coils)
7215	bars and rods, of iron or non-alloy steel, cold-formed or cold-finished, whether or not further worked, or hot-formed and further worked, n.e.s.
7216	angles, shapes and sections of iron or non-alloy steel, n.e.s.
7217	wire of iron or non-alloy steel, in coils (excl. bars and rods)
7218	stainless steel in ingots or other primary forms; semi-finished products of stainless steel
7219	flat-rolled products of stainless steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced"
7220	flat-rolled products of stainless steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced"
7221	bars and rods of stainless steel, hot-rolled, in irregularly wound coils

7222	other bars and rods of stainless steel; angles, shapes and sections of stainless steel, n.e.s.
7223	wire of stainless steel, in coils (excl. bars and rods)
7224	steel, alloy, other than stainless, in ingots or other primary forms, semi-finished products of alloy steel other than stainless
7225	flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced"
7226	flat-rolled products of alloy steel other than stainless, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced"
7227	bars and rods of alloy steel other than stainless, hot-rolled, in irregularly wound coils
7228	other bars and rods of alloy steel other than stainless, angles, shapes and sections of alloy steel other than stainless, n.e.s.; hollow drill bars and rods, of alloy or non-alloy steel
7229	wire of alloy steel other than stainless, in coils (excl. bars and rods)
7301	sheet piling of iron or steel, whether or not drilled, punched or made from assembled elements; welded angles, shapes and sections, of iron or steel
7302	railway or tramway track construction material of iron or steel, the following : rails, check-rails and rack rails, switch blades, crossing frogs, point rods and other crossing pieces, sleepers "cross-ties", fish-plates, chairs, chair wedges, sole plates "base plates", rail clips, bedplates, ties and other material specialised for jointing or fixing rails
7303	tubes, pipes and hollow profiles, of cast iron
7304	tubes, pipes and hollow profiles, seamless, of iron or steel (excl. products of cast iron)
7305	tubes and pipes, having circular cross-sections and an external diameter of > 406,4 mm, of flat-rolled products of iron or steel "e.g., welded, riveted or similarly closed"
7306	tubes, pipes and hollow profiles "e.g., open seam or welded, riveted or similarly closed", of iron or steel (excl. of cast iron, seamless tubes and pipes and tubes having internal and external circular cross-sections and an external diameter of > 406,4 mm)
7307	tube or pipe fittings "e.g. couplings, elbows, sleeves", of iron or steel
7308	structures and parts of structures "e.g., bridges and bridge-sections, lock-gates, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors, shutters, balustrades, pillars and columns", of iron or steel; plates, rods, angles, shapes, sections, tubes and the like, prepared for use in structures, of iron or steel (excl. prefabricated buildings of heading 9406)
7309	reservoirs, tanks, vats and similar containers, of iron or steel, for any material "other than compressed or liquefied gas", of a capacity of > 300 l, not fitted with mechanical or thermal equipment, whether or not lined or heat-insulated (excl. containers specifically constructed or equipped for one or more types of transport)
7310	tanks, casks, drums, cans, boxes and similar containers, of iron or steel, for any

	material "other than compressed or liquefied gas", of a capacity of <= 300 l, not fitted with mechanical or thermal equipment, whether or not lined or heat-insulated, n.e.s.
7311	containers of iron or steel, for compressed or liquefied gas (excl. containers specifically constructed or equipped for one or more types of transport)
7312	stranded wire, ropes, cables, plaited bands, slings and the like, of iron or steel (excl. electrically insulated products and twisted fencing wire and barbed wire)
7313	barbed wire of iron or steel; twisted hoop or single flat wire, barbed or not, and loosely twisted double wire, of a kind used for fencing, of iron or steel
7314	cloth, incl. endless bands, grill, netting and fencing, of iron or steel wire, expanded metal of iron or steel (excl. woven products of metal fibres of a kind used for cladding, lining or similar purposes)
7315	chain and parts thereof, or iron or steel (excl. watch chains, necklace chains and the like, cutting and saw chain, skid chain, scraper chain for conveyors, toothed chain for textile machinery and the like, safety devices with chains for securing doors, measuring chains)
7316	anchors, grapnels and parts thereof, of iron or steel
7317	nails, tacks, drawing pins, corrugated nails, staples and similar articles of iron or steel, whether or not with heads of other material (excl. such articles with heads of copper and staples in strips)
7318	screws, bolts, nuts, coach screws, screw hooks, rivets, cotters, cotter pins, washers, incl. spring washers, and similar articles, of iron or steel (excl. lag screws, stoppers, plugs and the like, threaded)
7319	sewing needles, knitting needles, bodkins, crochet hooks, embroidery stilettos and similar articles, for use in the hand, of iron or steel; safety pins and other pins of iron or steel, n.e.s.
7320	springs and leaves for springs, of iron or steel (excl. clock and watch springs, springs for sticks and handles of umbrellas or parasols, shock absorbers and torque rod or torsion bar springs of section 17)
7321	stoves, ranges, grates, cookers, incl. those with subsidiary boilers for central heating, barbecues, braziers, gas rings, plate warmers and similar non-electric domestic appliances, and parts thereof of iron or steel (excl. boilers and radiators for central heating, geysers and hot water cylinders)
7322	radiators for central heating, not-electrically heated, and parts thereof, of iron or steel; air heaters and hot-air distributors, incl. distributors which can also distribute fresh or conditioned air), not-electrically heated, incorporating a motor-driven fan or blower, and parts thereof, of iron or steel
7323	table, kitchen or other household articles, and parts thereof, of iron or steel; iron or steel wool; pot scourers and scouring or polishing pads, gloves and the like, of iron or steel (excl. cans, boxes and similar containers of heading 7310; waste baskets; shovels, corkscrews and other articles of the nature of a work implement; articles of cutlery, spoons, ladles, forks etc. of heading 8211 to 8215; ornamental articles; sanitary ware)
7324	sanitary ware, and parts thereof, of iron or steel (excl. cans, boxes and similar

	containers of heading 7310, small wall cabinets for medical supplies or toiletries and other furniture of chapter 94, and fittings)
7325	articles of iron or steel, cast, n.e.s.
7326	articles of iron or steel, n.e.s. (excl. cast articles)

ANNEX VII

Annex XIX Regulation (EU) No 833/2014 is replaced by the following:

‘ANNEX XIX

List of legal persons, entities and bodies referred to in Article 5aa

Part A

OPK OBORONPROM

UNITED AIRCRAFT CORPORATION

URALVAGONZAVOD

ROSNEFT

TRANSNEFT

GAZPROM NEFT

ALMAZ-ANTEY

KAMAZ

ROSTEC (RUSSIAN TECHNOLOGIES STATE CORPORATION)

JSC PO SEVMASH

SOVCOMFLOT

UNITED SHIPBUILDING CORPORATION

Part B

RUSSIAN MARITIME REGISTER of SHIPPING (RMRS)

Part C

Russian Regional Development Bank

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ANNEX VIII

Annex XXIII to Regulation (EU) No 833/2014 is replaced by the following:

‘ANNEX XXIII

List of goods and technolgy as referred to in Article 3k – Part A

CN code	Description
060110	Bulbs, tubers, tuberous roots, corms, crowns and rhizomes, dormant
060120	Bulbs, tubers, tuberous roots, corms, crowns and rhizomes, in growth or in flower; chicory plants and roots
060230	Rhododendrons and azaleas, grafted or not
060240	Roses, grafted or not
060290	Other live plants (including their roots), cuttings and slips; mushroom spawn - Other
060420	Foliage, branches and other parts of plants, without flowers or flower buds, and grasses, mosses and lichens, being goods of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared - Fresh
250840	Other clays
250870	Chamotte or dinas earths
250900	Chalk
251200	Siliceous fossil meals (for example, kieselguhr, tripolite and diatomite) and similar siliceous earths, whether or not calcined, of an apparent specific gravity of 1 or less
251512	Merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape
251520	Ecaussine and other calcareous monumental or building stone; alabaster
251820	Calcined or sintered dolomite
251910	Natural magnesium carbonate (magnesite)
252010	Gypsum; anhydrite
252100	Limestone flux; limestone and other calcareous stone, of a kind used for the manufacture of lime or cement
252210	Quicklime
252230	Hydraulic lime
252520	Mica powder
252620	Natural steatite, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape; talc - Crushed or powdered
253020	Kieserite, epsomite (natural magnesium sulphates)
270100	Coal; briquettes, ovoids and similar solid fuels manufactured from coal
270200	Lignite, whether or not agglomerated, excluding jet
270300	Peat (including peat litter), whether or not agglomerated
270400	Coke and semi-coke of coal, of lignite or of peat, whether or not agglomerated; retort carbon
270730	Xylol (xylenes)

270820	Pitch coke
271210	Petroleum jelly
271290	Petroleum jelly; paraffin wax, microcrystalline petroleum wax, slack wax, ozokerite, lignite wax, peat wax, other mineral waxes, and similar products obtained by synthesis or by other processes, whether or not coloured:
271500	Bituminous mastics, cut-backs and other bituminous mixtures based on natural asphalt, on natural bitumen, on petroleum bitumen, on mineral tar or on mineral tar pitch - Other
280410	Hydrogen
280430	Nitrogen
280440	Oxygen
280461	Silicon - Containing by weight not less than 99,99 % of silicon
280480	Arsenic
280610	Hydrogen chloride (hydrochloric acid)
280620	Chlorosulphuric acid
281129	Other inorganic oxygen compounds of non-metals - Other
281310	Carbon disulphide
281420	Ammonia in aqueous solution
281512	Sodium hydroxide (caustic soda) - In aqueous solution (soda lye or liquid soda)
281830	aluminium hydroxide
281990	Chromium oxides and hydroxides - Other
282010	Manganese dioxide
282731	Other chlorides - Of magnesium
282735	Other chlorides - Of nikel
282890	Hypochlorites; commercial calcium hypochlorite; chlorites; hypobromites - Other
282911	Chlorates - Of sodium
283220	Sulphites (excluding sodium)
283324	Sulphates of nickel
283330	Alums
283410	Nitrites
283630	Sodium hydrogencarbonate (sodium bicarbonate)
283650	Calcium carbonate
283990	Silicates; commercial alkali metal silicates - Other
284030	Peroxoborates (perborates)
284150	Other chromates and dichromates; peroxochromates
284180	Tungstates (wolframates)
284310	Colloidal precious metals
284321	Silver nitrate
284329	Silver compounds - Other
284330	Gold compounds
284700	Hydrogen peroxide, whether or not solidified with urea
290123	Butene (butylene) and isomers thereof
290124	Buta-1,3-diene and isoprene
290129	Acyclic hydrocarbons - Unsaturated - Other
290211	Cyclohexane
290230	Toluene

290241	o-xylene
290243	p-xylene
290244	Mixed xylene isomers
290250	Styrene
290311	Chloromethane (methyl chloride) and chloroethane (ethyl chloride)
290312	Dichloromethane (methylene chloride)
290321	Vinyl chloride (chloroethylene)
290323	Tetrachloroethylene (perchloroethylene)
290329	Unsaturated chlorinated derivatives of acyclic hydrocarbons - Other
290376	Bromochlorodifluoromethane (Halon-1211), bromotrifluoromethane (Halon-1301) and dibromotetrafluoroethanes (Halon-2402)
290381	1,2,3,4,5,6-Hexachlorocyclohexane (HCH (ISO)), including lindane (ISO, INN)
290391	Chlorobenzene, o-dichlorobenzene and p-dichlorobenzene
290410	Derivatives containing only sulpho groups, their salts and ethyl esters
290420	Derivatives containing only nitro or only nitroso groups
290431	Perfluorooctane sulphonic acid
290513	Butan-1-ol (n-butyl alcohol)
290516	Octanol (octyl alcohol) and isomers thereof
290519	Saturated monohydric alcohols - Other
290541	2-Ethyl-2-(hydroxymethyl)propane-1,3-diol (trimethylolpropane)
290559	Other polyhydric alcohols - Other
290613	Sterols and inositols
290619	Cyclanic, cyclenic or cycloterpenic -Other
290711	Phenol (hydroxybenzene) and its salts
290713	Octylphenol, nonylphenol and their isomers; salts thereof
290719	Monophenols - Other
290722	Hydroquinone (quinol) and its salts
290911	Pentachlorophenol (ISO)
290920	Cyclanic, cyclenic or cycloterpenic ethers and their halogenated, sulphonated, nitrated or nitrosated derivatives
290941	2,2′-Oxydiethanol (diethylene glycol, digol)
290943	Monobutyl ethers of ethylene glycol or of diethylene glycol
290949	Ether-alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives - Other
291010	Oxirane (ethylene oxide)
291020	Methyloxirane (propylene oxide)
291100	Acetals and hemiacetals, whether or not with other oxygen function, and their halogenated, sulphonated, nitrated or nitrosated derivat
291212	Ethanal (acetaldehyde)
291249	Aldehyde-alcohols, aldehyde-ethers, aldehyde-phenols and aldehydes with other oxygen function - Other
291260	Paraformaldehyde
291411	Acetone
291461	Anthraquinone
291513	Esters of formic acid

291590	Saturated acyclic monocarboxylic acids and their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulphonated, nitrated or nitrosated derivatives - Other
291612	Esters of acrylic acid
291613	Methacrylic acid and its salts
291614	Esters of methacrylic acid
291615	Oleic, linoleic or linolenic acids, their salts and esters
291733	Dinonyl or didecyl orthophthalates
292011	Parathion (ISO) and parathion-methyl (ISO) (methyl-parathion)
292122	Hexamethylenediamine and its salts
292141	Aniline and its salts
292211	Monoethanolamine and its salts
292243	Anthranilic acid and its salts
292320	Lecithins and other phosphoaminolipids
293040	Methionine
293354	Other derivatives of malonylurea (barbituric acid); salts thereof
293371	6-Hexanelactam (epsilon-caprolactam)
320190	Tanning extracts of vegetable origin; tannins and their salts, ethers, esters and other derivatives
320210	Synthetic organic tanning substances
320290	Synthetic organic tanning substances; inorganic tanning substances; tanning preparations, whether or not containing natural tanning substances; enzymatic preparations for pre-tanning
320300	colouring matter of vegetable or animal origin, incl. dye extracts (excl. animal black), whether or not chemically defined; preparations based on colouring matter of vegetable or animal origin of a kind used to dye fabrics or produce colorant preparations (excl. preparations of heading 3207, 3208, 3209, 3210, 3213 and 3215) - Other
320490	Synthetic organic colouring matter, whether or not chemically defined; preparations as specified in note 3 to this chapter based on synthetic organic colouring matter; synthetic organic products of a kind used as fluorescent brightening agents or as luminophores, whether or not chemically defined
320500	colour lakes (other than chinese or japanese lacquer and paints); preparations based on colour lakes of a kind used to dye fabrics or produce colorant preparations (excl. preparations of heading 3207, 3208, 3209, 3210, 3213 and 3215)
320641	ultramarine and preparations based thereon of a kind used for colouring any material or produce colorant preparations (excl. preparations of heading 3207, 3208, 3209, 3210, 3213 and 3215)
320649	inorganic or mineral colouring matter, n.e.s.; preparations based on inorganic or mineral colouring matter of a kind used for colouring any material or produce colorant preparations, n.e.s. (excl. preparations of heading 3207, 3208, 3209, 3210, 3213 and 3215 and inorganic products of a kind used as liminophores) - Other
320710	Prepared pigments, prepared opacifiers, prepared colours and similar preparations
320720	Engobes (slips)
320730	Liquid lustres and similar preparations

320740	Glass frit and other glass, in the form of powder, granules or flakes
320810	Paints and varnishes (including enamels and lacquers) based on synthetic polymers or chemically modified natural polymers, dispersed or dissolved in a non-aqueous medium; solutions as defined in note 4 to Chapter 32 - Based on polyesters
320820	Paints and varnishes (including enamels and lacquers) based on synthetic polymers or chemically modified natural polymers, dispersed or dissolved in a non-aqueous medium; solutions as defined in note 4 to Chapter 32 - Based on acrylic or vinyl polymers
320890	Paints and varnishes (including enamels and lacquers) based on synthetic polymers or chemically modified natural polymers, dispersed or dissolved in a non-aqueous medium; solutions as defined in note 4 to Chapter 32 -
320910	paints and varnishes, incl. enamels and lacquers, based on acrylic or vinyl polymers, dispersed or dissolved in an aqueous medium
320990	paints and varnishes, incl. enamels and lacquers, based on synthetic or chemically modified natural polymers, dispersed or dissolved in an aqueous medium (excl. those based on acrylic or vinyl polymers) - Other
321000	Other paints and varnishes (including enamels, lacquers and distempers); prepared water pigments of a kind used for finishing leather
321290	Pigments (including metallic powders and flakes) dispersed in non- aqueous media, in liquid or paste form, of a kind used in the manufacture of paints (including enamels); stamping foils; dyes and other colouring matter put up in forms or packings for retail sale - Other
321410	Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics; painters' fillings
321490	Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics; painters' fillings; non-refractory surfacing preparations for façades, indoor walls, floors, ceilings or the like - Other
321511	Printing ink - Black
321519	Printing ink - Other
340311	Lubricating preparations (including cutting-oil preparations, bolt or nut release preparations, anti-rust or anti-corrosion preparations and mould-release preparations, based on lubricants) and preparations of a kind used for the oil or grease treatment of textile materials, leather, furskins or other materials, but excluding preparations containing, as basic constituents, 70 % or more by weight of petroleum oils or of oils obtained from bituminous minerals – Containing petroleum oils or oils obtained from bituminous minerals - Preparations for the treatment of textile materials, leather, furskins or other materials
340319	Lubricating preparations (including cutting-oil preparations, bolt or nut release preparations, anti-rust or anti-corrosion preparations and mould-release preparations, based on lubricants) and preparations of a kind used for the oil or grease treatment of textile materials, leather, furskins or other materials, but excluding preparations containing, as basic constituents, 70 % or more by weight of petroleum oils or of oils obtained from bituminous minerals – Containing petroleum oils or oils obtained from bituminous minerals - Other
340391	Preparations for the treatment of textile materials, leather, furskins or other materials

340399	Lubricating preparations (including cutting-oil preparations, bolt or nut release preparations, anti-rust or anti-corrosion preparations and mould-release preparations, based on lubricants) and preparations of a kind used for the oil or grease treatment of textile materials, leather, furskins or other materials, but excluding preparations containing, as basic constituents, 70 % or more by weight of petroleum oils or of oils obtained from bituminous minerals - Other
350510	Dextrins and other modified starches
350699	Prepared glues and other prepared adhesives, not elsewhere specified or included; products suitable for use as glues or adhesives, put up for retail sale as glues or adhesives, not exceeding a net weight of 1 kg- Other
370120	Instant print film
370191	For colour photography (polychrome)
370232	Other film, with silver halide emulsion
370239	Photographic film in rolls, sensitised, unexposed, of any material other than paper, paperboard or textiles; instant print film in rolls, sensitised, unexposed - Other
370243	Other film, without perforations, of a width exceeding 105 mm - Of a width exceeding 610 mm and of a length not exceeding 200 m
370244	Other film, without perforations, of a width exceeding 105 mm - Of a width exceeding 105 mm but not exceeding 610 mm
370255	Other film, for colour photography (polychrome) - Of a width exceeding 16 mm but not exceeding 35 mm and of a length exceeding 30 m
370256	Other film, for colour photography (polychrome) - Of a width exceeding 35 mm
370297	Other film, for colour photography (polychrome) - Of a width not exceeding 35 mm and of a length exceeding 30 mm.
370298	photographic film, sensitised, in rolls, unexposed, with perforations, for monochrome photography, width > 35 mm (excl. of paper, paperboard and textiles; x-ray film)
370320	photographic paper, paperboard and textiles, sensitised, unexposed, for colour photography "polychrome" (excl. products in rolls > 610 mm wide)
370390	photographic paper, paperboard and textiles, sensitised, unexposed, for monochrome photography (excl. products in rolls > 610 mm wide)
370500	photographic plates and film, exposed and developed (excl. products made of paper, paperboard or textiles, cinematographic film and ready-to-use printing plates)
370610	cinematographic film, exposed and developed, whether or not incorporating soundtrack or consisting only of soundtrack, width >= 35 mm
380120	colloidal or semi-colloidal graphite
380620	salts of rosin, of resin acids or of derivatives of rosin or resin acids (excl. salts of rosin adducts)
380700	wood tar; wood tar oils; wood creosote; wood naphtha; vegetable pitch; brewer's pitch and similar preparations based on rosin, resin acids or vegetable pitch (excl. burgundy pitch, yellow pitch, stearin pitch, fatty acid pitch, fatty tar and glycerin pitch)
380910	finishing agents, dye carriers to accelerate the dyeing or fixing of dyestuffs and other products and preparations such as dressings and mordants of a kind used in the textile, paper, leather or like industries, n.e.s., based on starch or derivatives thereof

380991	finishing agents, dye carriers to accelerate the dyeing or fixing of dyestuffs, and other products and preparations, e.g. dressings and mordants of a kind used in the textile or similar industries, n.e.s. (excl. those with a basis of amylaceous substances)
380992	finishing agents, dye carriers to accelerate the dyeing or fixing of dyestuffs, and other products and preparations, e.g. dressings and mordants of a kind used in the paper or similar industries, n.e.s. (excl. those with a basis of amylaceous substances)
380993	finishing agents, dye carriers to accelerate the dyeing or fixing of dyestuffs, and other products and preparations, e.g. dressings and mordants of a kind used in the leather or similar industries, n.e.s. (excl. those with a basis of amylaceous substances)
381010	pickling preparations for metal surfaces; soldering, brazing or welding pastes and powders consisting of metal and other materials
381121	prepared additives for oil lubricants containing petroleum oil or bituminous mineral oil
381129	prepared additives for oil lubricants not containing petroleum oil or bituminous mineral oil
381190	oxidation inhibitors, gum inhibitors, viscosity improvers, anti-corrosive preparations and other prepared additives for mineral oils, incl. gasoline, or for other liquids used for the same purposes as mineral oils (excl. anti-knock preparations and oil lubricant additives)
381220	compound plasticisers for rubber or plastics, n.e.s.
381300	preparations and charges for fire-extinguishers; charged fire-extinguishing grenades (excl. full or empty fire-extinguishing devices, whether or not portable, unmixed chemically undefined products with fire-extinguishing properties in other forms)
381400	organic composite solvents and thinners, n.e.s.; prepared paint or varnish removers (excl. nail varnish remover)
381511	supported catalysts with nickel or a nickel compound as the active substance, n.e.s.
381512	supported catalysts with precious metal or a precious-metal compound as the active substance, n.e.s.
381519	supported catalysts, n.e.s. (excl. with precious metal, a precious-metal compound, nickel or a nickel compound as the active substance)
381590	reaction initiators, reaction accelerators and catalytic preparations, n.e.s. (excl. rubber accelerators and supported catalysts)
38160010	Dolomite ramming mix
381700	mixed alkylbenzenes and mixed alkylnaphthalenes produced by the alkylation of benzene and naphthalene (excl. mixed isomers of cyclic hydrocarbons)
381900	hydraulic brake fluids and other prepared liquids for hydraulic transmission not containing petroleum oil or bituminous mineral oil, or containing < 70% petroleum oil or bituminous mineral oil by weight
382000	anti-freezing preparations and prepared de-icing fluids (excl. prepared additives for mineral oils or other liquids used for the same purposes as mineral oils)
382313	tall oil fatty acids, industrial
382790	Mixtures containing halogenated derivatives of methane, ethane or propane (excl. those of subheadings 3824.71.00 to 3824.78.00)

382481	mixtures and preparations containing oxirane "ethylene oxide"
382484	mixtures and preparations containing aldrin (iso), camphechlor (iso) "toxaphene", chlordane (iso), chlordecone (iso), ddt (iso) "clofenotane (inn), 1,1,1-trichloro-2,2-bis"p-chlorophenyl"ethane", dieldrin "iso, inn", endosulfan (iso), endrin (iso), heptachlor (iso) or mirex (iso)
382499	chemical products and preparations of the chemical or allied industries, incl. those consisting of mixtures of natural products, n.e.s.
382590	residual products of the chemical or allied industries, n.e.s. (excl. waste)
382600	biodiesel and mixtures thereof, not containing or containing < 70 % by weight of petroleum oils or oils obtained from bituminous minerals
390140	ethylene-alpha-olefin copolymers, having a specific gravity of < 0,94 , in primary forms
390220	polyisobutylene, in primary forms
390230	propylene copolymers, in primary forms
390290	polymers of propylene or of other olefins, in primary forms (excl. polypropylene, polyisobutylene and propylene copolymers)
390319	polystyrene, in primary forms (excl. expansible)
390390	polymers of styrene, in primary forms (excl. polystyrene, styrene-acrylonitrile copolymers "san" and acrylonitrile-butadiene-styrene "abs")
390410	poly"vinyl chloride", in primary forms, not mixed with any other substances
390450	vinylidene chloride polymers, in primary forms
390512	poly"vinyl acetate", in aqueous dispersion
390519	poly"vinyl acetate", in primary forms (excl. in aqueous dispersion)
390521	vinyl acetate copolymers, in aqueous dispersion
390529	vinyl acetate copolymers, in primary forms (excl. in aqueous dispersion)
390591	copolymers of vinyl, in primary forms (excl. vinyl chloride-vinyl acetate copolymers and other vinyl chloride copolymers, and vinyl acetate copolymers)
390610	poly"methyl methacrylate", in primary forms
390690	acrylic polymers, in primary forms (excl. poly"methyl methacrylate")
390721	polyethers, in primary forms (excl. polyacetals and goods of 3002 10)
390740	polycarbonates, in primary forms
390770	poly"lactic acid", in primary forms
390791	unsaturated polyallyl esters and other polyesters, in primary forms (excl. polycarbonates, alkyd resins, poly"ethylene terephthalate" and poly"lactic acid")
390810	polyamides-6, -11, -12, -6,6, -6,9, -6,10 or -6,12, in primary forms
390890	polyamides, in primary forms (excl. polyamides-6, -11, -12, -6,6, -6,9, -6,10 and -6,12)
390920	melamine resins, in primary forms
390939	amino-resins, in primary forms (excl. urea, thiourea and melamine resins and mdi)
390940	phenolic resins, in primary forms
390950	polyurethanes, in primary forms
391211	non-plasticised cellulose acetates, in primary forms
391290	cellulose and chemical derivatives thereof, n.e.s., in primary forms (excl. cellulose acetates, cellulose nitrates and cellulose ethers)
391520	waste, parings and scrap, of polymers of styrene

391710	artificial guts "sausage casings" of hardened protein or cellulose materials
391723	rigid tubes, pipes and hoses, of polymers of vinyl chloride
391731	flexible tubes, pipes and hoses, of plastics, burst pressure >= 27,6 mpa
391732	flexible tubes, pipes and hoses of plastics, not reinforced or otherwise combined with other materials, without fittings
391733	flexible tubes, pipes and hoses of plastics, not reinforced or otherwise combined with other materials, with fittings, seals or connectors
392010	plates, sheets, film, foil and strip, of non-cellular polymers of ethylene, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918)
392061	plates, sheets, film, foil and strip, of non-cellular polycarbonates, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. those of poly"methyl methacrylate", self-adhesive products, and floor, wall and ceiling coverings of heading 3918)
392069	plates, sheets, film, foil and strip, of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials, not worked or only surface-worked, or only cut to rectangular, incl. square, shapes (excl. polycarbonates, polythylene terephthalate and other unsaturated polyesters, self-adhesive products, and floor, wall and ceiling coverings in heading 3918)
392073	plates, sheets, film, foil and strip, of non-cellular cellulose acetates, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918)
392091	plates, sheets, film, foil and strip, of non-cellular poly"vinyl butyral", not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, floor, wall and ceiling coverings of heading 3918)
392119	plates, sheets, film, foil and strip, of cellular plastic, unworked or merely surface-worked or merely cut into squares or rectangles (excl.those of polymers of styrene, vinyl chloride, polyurethanes and regenerated cellulose, self-adhesive products, floor, wall and ceiling coverings of heading 3918 and sterile surgical or dental adhesion barriers of subheading 3006.10.30)
392290	bidets, lavatory pans, flushing cisterns and similar sanitary ware, of plastics (excl. baths, shower-baths, sinks, washbasins, lavatory seats and covers)
392520	doors, windows and their frames and thresholds for doors, of plastics
400211	styrene-butadiene rubber latex "sbr"; carboxylated styrene-butadiene rubber latex "xsbr"
400220	butadiene rubber "br", in primary forms or in plates, sheets or strip
400231	isobutylene isoprene rubber "iir", in primary forms or in plates, sheets or strip
400239	halo-isobutene-isoprene rubber "ciir" or "biir", in primary forms or in plates, sheets or strip
400241	chloroprene latex "chlorobutadiene rubber, cr"
400251	latex of acrylonitrile-butadiene rubber "nbr"

400280	mixtures of natural rubber, balata, gutta-percha, guayule, chicle or similar types of natural rubber with synthetic rubber or factice, in primary forms or in plates, sheets or strip
400291	synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip (excl. styrene-butadiene rubber "sbr", carboxylated styrene-butadiene rubber "xsbr", butadiene rubber "br", isobutylene isoprene rubber "iir", halo-isobutene-isoprene rubber "ciir" or "biir", chloroprene rubber "cr", acrylonitrile-butadiene rubber "nbr", isoprene rubber "ir" and non-conjugated ethylene-propylene diene rubber "epdm")
400299	synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip (excl. latex, styrene-butadiene rubber "sbr", carboxylated styrene-butadiene rubber "xsbr", butadiene rubber "br", isobutylene isoprene rubber "iir", halo-isobutene-isoprene rubber "ciir" or "biir", chloroprene rubber "cr", acrylonitrile-butadiene rubber "nbr", isoprene rubber "ir" and non-conjugated ethylene-propylene diene rubber "epdm")
400510	rubber, unvulcanised, compounded with carbon black or silica, in primary forms or in plates, sheets or strip
400520	compounded rubber, unvulcanised, in the form of solutions or dispersions (excl. rubber compounded with carbon black or silica, and mixtures of natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums containing synthetic rubber or factice derived from oils)
400591	compounded rubber, unvulcanised, in the form of plates, sheets or strip (excl. rubber compounded with carbon black or silica, and mixtures of natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums containing synthetic rubber or factice derived from oils)
400599	compounded, unvulcanised rubber in primary forms (excl. solutions and dispersions, those containing carbon black or silica, mixtures of natural rubber, balata, gutta-percha, guayule, chicle or similar types of natural rubber with synthetic rubber or factice, and those in the form of plates, sheets or strip)
400610	'camel-back' strips of unvulcanised rubber, for retreading rubber tyres
400821	plates, sheets and strip, of non-cellular rubber
400912	tubes, pipes and hoses, of vulcanised rubber (excl. hard rubber), not reinforced or otherwise combined with other materials, with fittings
400941	tubes, pipes and hoses, of vulcanised rubber (excl. hard rubber), reinforced or otherwise combined with materials other than metal or textile materials, without fittings
401031	endless transmission belts of trapezoidal cross-section "v-belts", of vulcanised rubber, v-ribbed, of an outside circumference > 60 cm but <= 180 cm
401033	endless transmission belts of trapezoidal cross-section "v-belts", of vulcanised rubber, v-ribbed, of an outside circumference > 180 cm but <= 240 cm
401035	endless synchronous belts, of vulcanised rubber, of an outside circumference > 60 cm but <= 150 cm
401036	endless synchronous belts, of vulcanised rubber, of an outside circumference > 150 cm but <= 198 cm
401039	transmission belts or belting, of vulcanised rubber (excl. endless transmission belts of trapezoidal cross-section "v-belts", v-ribbed, of an outside circumference > 60 cm but <= 240 cm and endless synchronous belts of an outside circumference > 60 cm but <= 198 cm)

401211	retreaded pneumatic tyres, of rubber, of a kind used on motor cars "incl. station wagons and racing cars"
401213	retreaded pneumatic tyres, of rubber, of a kind used on aircraft
401219	retreaded pneumatic tyres, of rubber (excl. of a kind used on motor cars, station wagons, racing cars, buses, lorries and aircraft)
401220	used pneumatic tyres of rubber
401693	gaskets, washers and other seals, of vulcanised rubber (excl. hard rubber and those of cellular rubber)
440719	coniferous wood sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness of > 6 mm (excl. pine "pinus spp.", fir "abies spp." and spruce "picea spp.")
440792	beech "fagus spp.", sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness of > 6 mm
440794	cherry "prunus spp.", sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness of > 6 mm
440797	poplar and aspen "populus spp.", sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness of > 6 mm
440799	wood, sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness of > 6 mm (excl. tropical wood, coniferous wood, oak "quercus spp.", beech "fagus spp.", maple "acer spp.", cherry "prunus spp.", ash "fraxinus spp.", birch "betula spp.", poplar and aspen "populus spp.")
440810	sheets for veneering, incl. those obtained by slicing laminated wood, for coniferous plywood or for other similar laminated coniferous wood and other coniferous wood, sawn lengthwise, sliced or peeled, whether or not planed, sanded, spliced or end-jointed, of a thickness of <= 6 mm
441113	medium density fibreboard "mdf" of wood, of a thickness > 5 mm but <= 9 mm
441194	fibreboard of wood or other ligneous materials, whether or not agglomerated with resins or other organic bonding agents, of a density of <= 0,5 g/cm³ (excl. medium density fibreboard "mdf"; particle board, whether or not bonded with one or more sheets of fibreboard; laminated wood with a layer of plywood; cellular wood panels of which both sides are fibreboard; paperboard; identifiable furniture components)
441231	plywood consisting solely of sheets of wood <= 6 mm thick, with at least one outer ply of tropical wood (excl. sheets of compressed wood, cellular wood panels, inlaid wood and sheets identifiable as furniture components)
441233	plywood consisting solely of sheets of wood <= 6 mm thick, with at least one outer ply of non-coniferous wood (excl. of bamboo, with an outer ply of tropical wood or of alder, ash, beech, birch, cherry, chestnut, elm, eucalyptus, hickory, horse chestnut, lime, maple, oak, plane tree, poplar, aspen, robinia, tulipwood or walnut, and sheets of compressed wood, cellular wood panels, inlaid wood and sheets identifiable as furniture components)
441294	laminated wood as blockboard, laminboard or battenboard (excl. of bamboo, plywood consisting solely of sheets of wood <= 6 mm thick, sheets of compressed wood, inlaid wood and sheets identifiable as furniture components)
441600	casks, barrels, vats, tubs and other coopers' products parts thereof, of wood, incl. staves
441840	wooden shuttering for concrete constructional work (excl. plywood boarding)

441860	posts and beams, of wood
441879	flooring panels, assembled, of wood other than bamboo (excl. multilayer panels and panels for mosaic floors)
450310	corks and stoppers of all types, of natural cork, incl. round-edged blanks
450410	tiles of any shape, blocks, plates, sheets and strip, solid cylinders, incl. discs, of agglomerated cork
470100	mechanical wood pulp, not chemically treated
470319	unbleached non-coniferous chemical wood pulp, soda or sulphate (excl. dissolving grades)
470321	semi-bleached or bleached coniferous chemical wood pulp, soda or sulphate (excl. dissolving grades)
470329	semi-bleached or bleached non-coniferous chemical wood pulp, soda or sulphate (excl. dissolving grades)
470411	unbleached coniferous chemical wood pulp, sulphite (excl. dissolving grades)
470421	semi-bleached or bleached coniferous chemical wood pulp, sulphite (excl. dissolving grades)
470429	semi-bleached or bleached non-coniferous chemical wood pulp, sulphite (excl. dissolving grades)
470500	wood pulp obtained by a combination of mechanical and chemical pulping processes
470630	pulps of fibrous cellulosic bamboo material
470692	chemical pulp of fibrous cellulosic material (excl. that of bamboo, wood, cotton linters and fibres derived from recovered [waste and scrap] paper or paperboard)
470710	recovered "waste and scrap" paper or paperboard of unbleached kraft paper, corrugated paper or corrugated paperboard
470730	recovered "waste and scrap" paper or paperboard made mainly of mechanical pulp, e.g. newspapers, journals and similar printed matter
480220	paper and paperboard of a kind used as a base for photosensitive, heat-sensitive or electrosensitive paper and paperboard, uncoated, in rolls or in square or rectangular sheets, of any size
480240	wallpaper base, uncoated
480258	uncoated paper and paperboard, of a kind used for writing, printing or other graphic purposes, and non-perforated punchcards and punch-tape paper, in rolls or in square or rectangular sheets, of any size, not containing fibres obtained by a mechanical or chemi-mechanical process or of which <= 10% by weight of the total fibre content consists of such fibres, weighing > 150 g/m², n.e.s.
480261	uncoated paper and paperboard, of a kind used for writing, printing or other graphic purposes, and non-perforated punchcards and punch-tape paper, in rolls of any size, of which > 10% by weight of the total fibre content consists of fibres obtained by a mechanical or chemi-mechanical process, n.e.s.
480411	unbleached kraftliner, uncoated, in rolls of a width > 36 cm
480419	kraftliner, uncoated, in rolls of a width > 36 cm (excl. unbleached and goods of heading 4802 and 4803)
480421	unbleached sack kraft paper, uncoated, in rolls of a width > 36 cm (excl. goods of heading 4802, 4803 or 4808)
480429	sack kraft paper, uncoated, in rolls of a width > 36 cm (excl. unbleached, and goods of heading 4802, 4803 or 4808)

480431	unbleached kraft paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing <= 150 g/m² (excl. kraftliner, sack kraft paper and goods of heading 4802, 4803 or 4808)
480439	kraft paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing <= 150 g/m² (excl. unbleached, kraftliner, sack kraft paper and goods of heading 4802, 4803 or 4808)
480441	unbleached kraft paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing > 150 g to < 225 g/m² (excl. kraftliner, sack kraft paper, and goods of heading 4802, 4803 or 4808)
480442	kraft paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing > 150 g to < 225 g/m², bleached uniformly in the mass, containing > 95% chemically processed wood fibre by weight in relation to the total fibre content (excl. kraftliner, sack kraft paper and goods of heading 4802, 4803 or 4808)
480449	kraft paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing > 150 g to < 225 g/m² (excl. unbleached, bleached uniformly in the mass and containing > 95% chemically processed wood fibre by weight in relation to the total fibre content, kraftliner, sack kraft paper and goods of heading 4802, 4803 or 4808)
480452	kraft paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing >= 225 g/m², bleached uniformly in the mass, containing > 95% chemically processed wood fibre by weight in relation to the total fibre content (excl. kraftliner, sack kraft paper and goods of heading 4802, 4803 or 4808)
480459	kraft paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing >= 225 g/m² (excl. unbleached or bleached uniformly in the mass and containing > 95% chemically prepared wood fibre by weight in relation to the total fibre content, and kraftliner, sack kraft paper and goods of heading 4802, 4803 or 4808)
480524	testliner "recycled liner board", uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing <= 150 g/m²
480525	testliner "recycled liner board", uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing > 150 g/m²
480540	filter paper and paperboard, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state
480591	paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing <= 150 g/m², n.e.s.

480592	paper and paperboard, uncoated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state, weighing > 150 g to < 225 g/m², n.e.s.
480610	vegetable parchment, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state
480620	greaseproof papers, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state
480630	tracing papers, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state
480640	glassine and other glazed transparent or translucent papers, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state (excl. vegetable parchment, greaseproof papers and tracing papers)
480700	composite paper and paperboard "made by sticking flat layers of paper or paperboard together with an adhesive", not surface-coated or impregnated, whether or not internally reinforced, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state
480890	paper and paperboard, creped, crinkled, embossed or perforated, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state (excl. sack kraft and other kraft paper, and goods of heading 4803)
480920	self-copy paper, whether or not printed, in rolls of a width > 36 cm or in square or rectangular sheets with one side > 36 cm and the other side > 15 cm in the unfolded state (excl. carbon and similar copying papers)
481013	paper and paperboard used for writing, printing or other graphic purposes, not containing fibres obtained by a mechanical or chemi-mechanical process or of which <= 10% by weight of the total fibre content consists of such fibres, coated on one or both sides with kaolin or other inorganic substances, in rolls of any size
481019	paper and paperboard used for writing, printing or other graphic purposes, not containing fibres obtained by a mechanical or chemi-mechanical process or of which <= 10% by weight of the total fibre content consists of such fibres, coated on one or both sides with kaolin or other inorganic substances, in square or rectangular sheets with one side > 435 mm or with one side <= 435 mm and the other side > 297 mm in the unfolded state
481022	lightweight coated paper used for writing, printing or other graphic purposes, total weight <= 72 g/m², coating weight <= 15 g/m² per side, on a base of which >= 50% by weight of the total fibre content consists of fibres obtained by a mechanical process, coated on both sides with kaolin or other inorganic substances, in rolls or in square or rectangular sheets, of any size
481031	kraft paper and paperboard, bleached uniformly throughout the mass and containing > 95% chemically processed wood fibres by weight in relation to the total fibre content, coated on one or both sides with kaolin or other inorganic substances, in rolls or in square or rectangular sheets, of any size, weighing <= 150 g/m² (excl. that for writing, printing or other graphic purposes)

481039	kraft paper and paperboard, coated on one or both sides with kaolin or other inorganic substances, in rolls or in square or rectangular sheets, of any size (excl. that for writing, printing or other graphic purposes; paper and paperboard bleached uniformly in the mass and containing > 95% chemically processed wood fibres by weight in relation to the total fibre content)
481092	multi-ply paper and paperboard, coated on one or both sides with kaolin or other inorganic substances, in rolls or in square or rectangular sheets, of any size (excl. that for writing, printing or other graphic purposes, kraft paper and paperboard)
481099	paper and paperboard, coated on one or both sides with kaolin "china clay" or other inorganic substances, with or without a binder, and with no other coating, whether or not surface-coloured, surface-decorated or printed, in rolls or in square or rectangular sheets, of any size (excl. that for writing, printing or other graphic purposes, kraft paper and paperboard, multi-ply paper and paperboard, and with no other coating)
481110	tarred, bituminised or asphalted paper and paperboard, in rolls or in square or rectangular sheets, of any size
481151	paper and paperboard, surface-coloured, surface-decorated or printed, coated, impregnated or covered with artificial resins or plastics, in rolls or in square or rectangular sheets, of any size, bleached and weighing > 150 g/m² (excl. adhesives)
481159	paper and paperboard, surface-coloured, surface-decorated or printed, coated, impregnated or covered with artificial resins or plastics, in rolls or in square or rectangular sheets, of any size (excl. bleached and weighing > 150 g/m², and adhesives)
481160	paper and paperboard, coated, impregnated or covered with wax, paraffin wax, stearin, oil or glycerol, in rolls or in square or rectangular sheets, of any size (excl. goods of heading 4803, 4809 and 4818)
481190	paper, paperboard, cellulose wadding and webs of soft cellulose, coated, impregnated, covered, surface-coloured, surface-decorated or printed, in rolls or in square or rectangular sheets, of any size (excl. goods of heading 4803, 4809, 4810 and 4818, and of subheading 4811.10 to 4811.60)
481490	wallpaper and similar wallcoverings of paper, and window transparencies of paper (excl. wallcoverings of paper, consisting of paper coated or covered, on the face side, with a grained, embossed, coloured or design-printed or otherwise decorated layer of plastics)
481920	folding cartons, boxes and cases, of non-corrugated paper or paperboard
482210	bobbins, spools, cops and similar supports of paper pulp, paper or paperboard, whether or not perforated or hardened, for winding textile yarn
482320	filter paper and paperboard, in strips or rolls of a width <= 36 cm, in rectangular or square sheets, of which no side > 36 cm in the unfolded state, or cut to shape other than rectangular or square
482340	rolls, sheets and dials, printed for self-recording apparatus, in rolls of a width <= 36 cm, in rectangular or square sheets of which no side > 36 cm in the unfolded state, or cut into dials
482370	moulded or pressed articles of paper pulp, n.e.s.
490600	plans and drawings for architectural, engineering, industrial, commercial, topographical or similar purposes, being originals drawn by hand; handwritten texts; photographic reproductions on sensitised paper and carbon copies of the

	foregoing
510539	fine animal hair, carded or combed (excl. wool and hair of kashmir "cashmere" goats)
510540	coarse animal hair, carded or combed
510610	carded wool yarn containing >= 85% wool by weight (excl. that put up for retail sale)
510620	carded wool yarn containing predominantly, but < 85% wool by weight (excl. that put up for retail sale)
510720	yarn of combed wool containing predominantly, but < 85% wool by weight (excl. that put up for retail sale)
511211	woven fabrics containing >= 85% combed wool or combed fine animal hair by weight and weighing <= 200 g/m² (excl. fabrics for technical uses of heading 5911)
511219	woven fabrics containing >= 85% combed wool or combed fine animal hair by weight and weighing > 200 g/m²
520521	single cotton yarn, of combed fibres, containing >= 85% cotton by weight and with a linear density of >= 714,29 decitex "<= mn 14" (excl. sewing thread and yarn put up for retail sale)
520528	single cotton yarn, of combed fibres, containing >= 85% cotton by weight and with a linear density of < 83,33 decitex "> mn 120" (excl. sewing thread and yarn put up for retail sale)
520541	multiple "folded" or cabled cotton yarn, of combed fibres, containing >= 85% cotton by weight and with a linear density of >= 714,29 decitex "<= mn 14" per single yarn (excl. sewing thread and yarn put up for retail sale)
520642	multiple "folded" or cabled cotton yarn containing predominantly, but < 85% cotton by weight, of combed fibres and with a linear density of 232,56 decitex to < 714,29 decitex "> mn 14 to mn 43" per single yarn (excl. sewing thread and yarn put up for retail sale)
520911	plain woven fabrics of cotton, containing >= 85% cotton by weight and weighing > 200 g/m², unbleached
521119	woven fabrics of cotton, containing predominantly, but < 85% cotton by weight, mixed principally or solely with man-made fibres and weighing > 200 g/m², unbleached (excl. those in three-thread or four-thread twill, incl. cross twill, and plain woven fabrics)
521151	plain woven fabrics of cotton, containing predominantly, but < 85% cotton by weight, mixed principally or solely with man-made fibres and weighing > 200 g/m², printed
521159	woven fabrics of cotton, containing predominantly, but < 85% cotton by weight, mixed principally or solely with man-made fibres and weighing > 200 g/m², printed (excl. those in three-thread or four-thread twill, incl. cross twill, and plain woven fabrics)
530820	hemp yarn
540263	multiple "folded" or cabled filament yarn of polypropylene, incl. monofilament of < 67 decitex (excl. sewing thread, yarn put up for retail sale and textured yarn)
540333	filament yarn of cellulose acetate, incl. monofilament of < 67 decitex, single (excl. sewing thread, high-tenacity yarn and yarn put up for retail sale)

540342	multiple "folded" or cabled filament yarn of cellulose acetate, incl. monofilament of < 67 decitex (excl. sewing thread, high-tenacity yarn and yarn put up for retail sale)
540412	polypropylene monofilament of >= 67 decitex and with a cross sectional dimension of <= 1 mm (excl. elastomers)
540419	synthetic monofilament of >= 67 decitex and with a cross sectional dimension of <= 1 mm (excl. of elastomers and polypropylene)
540490	strip and the like, e.g. artificial straw, of synthetic textile material, with an apparent width of <= 5 mm
540730	woven fabrics of synthetic filament yarn, incl. monofilament of >= 67 decitex and with a cross sectional dimension of <= 1 mm, consisting of layers of parallel textile yarns superimposed on each other at acute or right angles, the layers being bonded at the intersections of the yarns by an adhesive or by thermal bonding
550190	synthetic filament tow as specified in note 1 to chapter 55 (excl. that of acrylic, modacrylic, polyesters, polypropylene, nylon or other polyamide filament)
550210	artificial filament tow as specified in note 1 to chapter 55, of acetate
550319	staple fibres of nylon or other polyamides, not carded, combed or otherwise processed for spinning (excl. those of aramids)
550340	staple fibres of polypropylene, not carded, combed or otherwise processed for spinning
550490	artificial staple fibres, not carded, combed or otherwise processed for spinning (excl. those of viscose rayon)
550640	staple fibres of polypropylene, carded, combed or otherwise processed for spinning
550700	artificial staple fibres, carded, combed or otherwise processed for spinning
551221	woven fabrics containing >= 85% acrylic or modacrylic staple fibres by weight, unbleached or bleached
551299	woven fabrics containing >= 85% synthetic staple fibres by weight, dyed, made of yarn of different colours or printed (excl. those of acrylic, modacrylic or polyester staple fibres)
551644	woven fabrics containing predominantly, but < 85% artificial staple fibres by weight, mixed principally or solely with cotton, printed
551694	woven fabrics containing predominantly, but < 85% artificial staple fibres by weight, other than those mixed principally or solely with cotton, wool, fine animal hair or man-made filament, printed
560129	wadding of textile materials and articles thereof (excl. of cotton or man-made fibres; sanitary towels and tampons, napkins and napkin liners for babies and similar sanitary articles, wadding and articles thereof, impregnated or covered with medicated substances or put up for retail for medical, surgical, dental or veterinary purposes, or impregnated, coated or covered with perfumes, make-up, soaps, cleansing agents, etc.)
560130	textile flock and dust and mill neps
560490	textile yarn, strip and the like of heading 5404 and 5405, impregnated, coated, covered or sheathed with rubber or plastics (excl. imitation catgut, thread and cord with fish-hook attachments or otherwise put up as fishing line)

560500	metallised yarn, whether or not gimped, being textile yarn, or strip or the like of heading 5404 or 5405, of textile fibres, combined with metal in the form of thread, strip or powder or covered with metal (excl. yarns manufactured from a mixture of textile fibres and metal fibres, with anti-static properties; yarns reinforced with metal wire; articles with the character of trimmings)
560741	binder or baler twine, of polyethylene or polypropylene
580127	warp pile fabrics, of cotton (excl. terry towelling and similar woven terry fabrics, tufted textile fabrics and narrow woven fabrics of heading 5806)
580300	gauze (excl. narrow woven fabrics of heading 5806)
580640	narrow fabrics consisting of warp without weft assembled by means of an adhesive "bolducs", with a width of <= 30 cm
590110	textile fabrics coated with gum or amylaceous substances, of a kind used for the outer covers of books, the manufacture of boxes and articles of cardboard or the like
590500	textile wallcoverings
590800	textile wicks, woven, plaited or knitted, for lamps, stoves, lighters, candles or the like; incandescent gas mantles and tubular knitted gas-mantle fabric for incandescent gas mantles, whether or not impregnated (excl. wax-covered wicks of the taper variety, fuses and detonating fuses, wicks in the form of textile yarn and glass-fibre wicks)
591000	transmission or conveyor belts or belting, of textile material, whether or not impregnated, coated, covered or laminated with plastics, or reinforced with metal or other material (excl. those of a thickness of < 3 mm and of indeterminate length or cut to length only, and those impregnated, coated, covered or laminated with rubber or made of yarn or cord impregnated or coated with rubber)
591110	textile fabrics, felt and felt-lined woven fabrics, coated, covered or laminated with rubber, leather or other material, of a kind used for card clothing, and similar fabrics of a kind used for other technical purposes, incl. narrow fabrics made of velvet impregnated with rubber, for covering weaving spindles "weaving beams"
591131	textile fabrics and felts, endless or fitted with linking devices, of a kind used in papermaking or similar machines, e.g. for paper pulp or asbestos-cement, weighing < 650 g/m²
591132	textile fabrics and felts, endless or fitted with linking devices, of a kind used in papermaking or similar machines, e.g. for paper pulp or asbestos-cement, weighing >= 650 g/m²
591140	straining cloth of a kind used in oil-presses or for similar technical purposes, incl. that of human hair
600199	pile fabrics, knitted or crocheted (excl. cotton or man-made fibres and "long pile" fabrics)
600340	knitted or crocheted fabrics of artificial fibres, of a width of <= 30 cm (excl. those containing by weight >= 5% of elastomeric yarn or rubber thread, and pile fabrics, incl. "long pile", looped pile fabrics, labels, badges and similar articles, knitted or crocheted fabrics, impregnated, coated, covered or laminated, and sterile surgical or dental adhesion barriers of subheading 3006.10.30)

600536	unbleached or bleached warp knit fabrics of synthetic fibres "incl. those made on galloon knitting machines", of a width of > 30 cm (excl. those containing by weight >= 5% of elastomeric yarn or rubber thread, and pile fabrics, incl. "long pile", looped pile fabrics, labels, badges and similar articles, and knitted or crocheted fabrics, impregnated, coated, covered or laminated)
600544	printed warp knit fabrics of artificial fibres "incl. those made on galloon knitting machines", of a width of > 30 cm (excl. those containing by weight >= 5% of elastomeric yarn or rubber thread, and pile fabrics, incl. "long pile", looped pile fabrics, labels, badges and similar articles, and knitted or crocheted fabrics, impregnated, coated, covered or laminated)
600610	fabrics, knitted or crocheted, of a width of > 30 cm, of wool or fine animal hair (excl. warp knit fabrics "incl. those made on galloon knitting machines", those containing by weight >= 5% of elastomeric yarn or rubber thread, and pile fabrics, incl. "long pile", looped pile fabrics, labels, badges and similar articles, and knitted or crocheted fabrics, impregnated, coated, covered or laminated)
630900	worn clothing and clothing accessories, blankets and travelling rugs, household linen and articles for interior furnishing, of all types of textile materials, incl. all types of footwear and headgear, showing signs of appreciable wear and presented in bulk or in bales, sacks or similar packings (excl. carpets, other floor coverings and tapestries)
680292	calcareous stone, in any form (excl. marble, travertine and alabaster, tiles, cubes and similar articles of subheading 6802.10, imitation jewellery, clocks, lamps and lighting fittings and parts thereof, original sculptures and statuary, setts, curbstones and flagstones)
680423	millstones, grindstones, grinding wheels and the like, without frameworks, for sharpening, polishing, trueing or cutting, of natural stone (excl. of agglomerated natural abrasives or ceramics, perfumed pumice stones, hand sharpening or polishing stones, and grinding wheels etc. specifically for dental drill engines)
680610	slag-wool, rock-wool and similar mineral wools, incl. intermixtures thereof, in bulk, sheets or rolls
680690	mixtures and articles of heat-insulating, sound-insulating or sound absorbing mineral materials (excl. slag-wool, rock-wool and similar mineral wools, exfoliated vermiculite, expanded clays, foamed slag and similar expanded mineral materials, articles of light concrete, asbestos-cement, cellulose fibre-cement or the like, mixtures and other articles of or based on asbestos, and ceramic products)
680710	articles of asphalt or of similar materials, e.g. petroleum bitumen or coal tar pitch, in rolls
680790	articles of asphalt or of similar materials, e.g. petroleum bitumen or coal tar pitch (excl. in rolls)
680919	boards, sheets, panels, tiles and similar articles, of plaster or compositions based on plaster (excl. ornamented, faced or reinforced with paper or paperboard only, and with plaster agglomerated articles for heat-insulation, sound-insulation or sound absorption)
681091	prefabricated structural components for building or civil engineering of cement, concrete or artificial stone, whether or not reinforced
681181	corrugated sheets of cellulose fibre-cement or the like, not containing asbestos

681182	sheets, panels, paving, tiles and similar articles, of cellulose fibre-cement or the like, not containing asbestos (excl. corrugated sheets)
681189	articles of cellulose fibre-cement or the like, not containing asbestos (excl. corrugated and other sheets, panels, tiles and similar articles)
681389	friction material and articles thereof, e.g. sheets, rolls, strips, segments, discs, washers and pads, for clutches and the like, with a basis of mineral substances or cellulose, whether or not combined with textile or other materials (excl. containing asbestos, and brake linings and pads)
681490	worked mica and articles of mica (excl. electrical insulators, insulating fittings, resistors and capacitors, protective goggles of mica and their glasses, mica in the form of christmas tree decorations, and plates, sheets and strips of agglomerated or reconstituted mica, whether or not on supports)
690100	bricks, blocks, tiles and other ceramic goods of siliceous fossil meals, e.g. kieselguhr, tripolite or diatomite, or of similar siliceous earths
690410	building bricks (excl. those of siliceous fossil meals or similar siliceous earths, and refractory bricks of heading 6902)
690510	roofing tiles
690590	ceramic chimney pots, cowls, chimney liners, architectural ornaments and other ceramic constructional goods (excl. of siliceous fossil meals or similar siliceous earths, refractory ceramic constructional components, pipes and other components for drainage and similar purposes, and roofing tiles)
690600	ceramic pipes, conduits, guttering and pipe fittings (excl. of siliceous fossil meals or similar siliceous earths, refractory ceramic goods, chimney liners, pipes specifically manufactured for laboratories, insulating tubing and fittings and other piping for electrotechnical purposes)
690722	ceramic flags and paving, hearth or wall tiles, of a water absorption coefficient by weight > 0,5 % but <= 10 % (excl. mosaic cubes and finishing ceramics)
690740	finishing ceramics
690990	ceramic troughs, tubs and similar receptacles of a kind used in agriculture; ceramic pots, jars and similar articles of a kind used for the conveyance or packing of goods (excl. general-purpose storage vessels for laboratories, containers for shops and household articles)
700220	rods of glass, unworked
700231	tubes of fused quartz or other fused silica, unworked
700232	tubes of glass having a linear coefficient of expansion <= 5 x 10-6 per kelvin within a temperature range of 0°c to 300°c, unworked (excl. tubes of glass having a linear coefficient of expansion <= 5 x 10-6 per kelvin within a temperature range of 0°c to 300°c)
700239	tubes of glass, unworked (excl. tubes of glass having a linear coefficient of expansion <= 5 x 10-6 per kelvin within a temperature range of 0°c to 300°c or of fused quartz or other fused silica)
700330	profiles of glass, whether or not having an absorbent, reflecting or non-reflecting layer, but not otherwise worked
700420	sheets of glass, drawn or blown, coloured throughout the mass "body tinted" opacified, flashed or having an absorbent, reflecting or non-reflecting layer, but not otherwise worked
700510	float glass and surface ground or polished glass, in sheets, having an absorbent, reflecting or non-reflecting layer, but not otherwise worked (excl. wired glass)

700530	float glass and surface ground and polished glass, in sheets, whether or not having an absorbent, reflecting or non-reflecting layer, wired, but not otherwise worked
700711	toughened "tempered" safety glass, of size and shape suitable for incorporation in motor vehicles, aircraft, spacecraft, vessels and other vehicles
700729	laminated safety glass (excl. glass of size and shape suitable for incorporation in motor vehicles, aircraft, spacecraft, vessels or other vehicles, multiple-walled insulating units)
701110	glass envelopes, incl. bulbs and tubes, open, and glass parts thereof, without fittings, for electric lighting
720292	ferro-vanadium
720712	semi-finished products of iron or non-alloy steel containing, by weight, < 0,25% of carbon, of rectangular "other than square" cross-section, the width measuring >= twice the thickness
720825	flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, in coils, simply hot-rolled, not clad, plated or coated, of a thickness of >= 4,75 mm, pickled, without patterns in relief
720890	flat-rolled products of iron or steel, of a width >= 600 mm, hot-rolled and further worked, but not clad, plated or coated
720925	flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, not in coils, simply cold-rolled "cold-reduced", not clad, plated or coated, of a thickness of >= 3 mm
720928	flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, not in coils, simply cold-rolled "cold-reduced", not clad, plated or coated, of a thickness of < 0,5 mm
721090	flat-rolled products of iron or non-alloy steel, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced", clad, plated or coated (excl. tinned, plated or coated with lead, zinc, chromium oxides, chromium and chromium oxides, or aluminium, painted, varnished or coated with plastics)
721113	flat-rolled products of iron or non-alloy steel, simply hot-rolled on four faces or in a closed box pass, not clad, plated or coated, of a width of > 150 mm but < 600 mm and a thickness of >= 4 mm, not in coils, without patterns in relief, commonly known as "wide flats"
721114	flat-rolled products of iron or non-alloy steel, of a width < 600 mm, not further worked than hot-rolled, not clad, plated or coated, of a thickness of >= 4,75 mm (excl. "wide flats")
721129	flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, simply cold-rolled "cold-reduced", not clad, plated or coated, containing by weight >= 0,25% of carbon
721210	flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", tinned
721260	flat-rolled products of iron or non-alloy steel, of a width of < 600 mm, hot-rolled or cold-rolled "cold-reduced", clad
721320	bars and rods, hot-rolled, in irregularly wound coils, of non-alloy free-cutting steel (excl. bars and rods containing indentations, ribs, grooves or other deformations produced during the rolling process)

721399	bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel (excl. products of circular cross-section measuring < 14 mm in diameter, bars and rods of free-cutting steel, and bars and rods with indentations, ribs, grooves or other deformations produced during the rolling process)
721550	bars and rods, of iron or non-alloy steel, not further worked than cold-formed or cold-finished (excl. of free-cutting steel)
721610	u, i or h sections of iron or non-alloy steel, not further worked than hot-rolled, hot-drawn or extruded, of a height of < 80 mm
721622	t sections of iron or non-alloy steel, not further worked than hot-rolled, hot-drawn or extruded, of a height of < 80 mm
721633	h sections of iron or non-alloy steel, not further worked than hot-rolled, hot-drawn or hot-extruded, of a height >= 80 mm
721669	angles, shapes and sections, of iron or non-alloy steel, not further worked than cold-formed or cold-finished (excl. profiled sheet)
721891	semi-finished products of stainless steel, of rectangular "other than square" cross-section
721924	flat-rolled products of stainless steel, of a width of >= 600 mm, not further worked than hot-rolled, not in coils, of a thickness of < 3 mm
722230	other bars and rods of stainless steel, cold-formed or cold-finished and further worked, or not further worked than forged, or forged, or hot-formed by other means and further worked
722410	steel, alloy, other than stainless, in ingots or other primary forms (excl. waste and scrap in ingot form, and products obtained by continuous casting)
722519	flat-rolled products of silicon-electrical steel, of a width of >= 600 mm, non-grain-oriented
722530	flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, not further worked than hot-rolled, in coils (excl. products of silicon-electrical steel)
722599	flat-rolled products of alloy steel other than stainless, of a width of >= 600 mm, hot-rolled or cold-rolled "cold-reduced" and further worked (excl. plated or coated with zinc and products of silicon-electrical steel)
722691	flat-rolled products of alloy steel other than stainless, of a width of < 600 mm, not further worked than hot-rolled (excl. products of high-speed steel or silicon-electrical steel)
722830	bars and rods of alloy steel other than stainless, not further worked than hot-rolled, hot-drawn or extruded (excl. products of high-speed steel or silico-manganese steel, semi-finished products, flat-rolled products and hot-rolled bars and rods in irregularly wound coils)
722860	bars and rods of alloy steel other than stainless, cold-formed or cold-finished and further worked or hot-formed and further worked, n.e.s. (excl. products of high-speed steel or silico-manganese steel, semi-finished products, flat-rolled products and hot-rolled bars and rods in irregularly wound coils)
722870	angles, shapes and sections of alloy steel other than stainless, n.e.s.
722880	hollow drill bars and rods, of alloy or non-alloy steel
722990	wire of alloy steel other than stainless, in coils (excl. bars and rods and wire of silico-manganese steel)
730120	angles, shapes and sections, of iron or steel, welded
730424	casing and tubing, seamless, of a kind used for drilling for oil or gas, of

	stainless steel
730539	tubes and pipes having circular cross-sections and an external diameter of > 406,4 mm, of iron or steel, welded (excl. products longitudinally welded or of a kind used for oil or gas pipelines or of a kind used in drilling for oil or gas)
730650	Tubes, pipes and hollow profiles, welded, of circular cross-section, of alloy steel other than stainless (excl. tubes and pipes having internal and external circular cross-sections and an external diameter of > 406,4 mm, and line pipe of a kind used for oil or gas pipelines or casing and tubing of a kind used in drilling for oil or gas)
730722	Threaded elbows, bends and sleeves
730900	Reservoirs, tanks, vats and similar containers for any material (other than compressed or liquefied gas), of iron or steel, of a capacity exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment
731412	Endless bands of stainless steel wire, for machinery
731824	Cotters and cotter pins, of iron or steel
732020	Helical springs, of iron or steel (excl. flat spiral springs, clock and watch springs, springs for sticks and handles of umbrellas or parasols, and shock absorbers of section 17)
732290	Air heaters and hot-air distributors, incl. distributors which can also distribute fresh or conditioned air, non-electrically heated, incorporating a motor-driven fan or blower, and parts thereof, of iron or steel
732429	baths of steel sheet
740710	bars, rods and profiles, of refined copper
740811	wire of refined copper, with a maximum cross-sectional dimension of > 6 mm
740819	wire of refined copper, with a maximum cross-sectional dimension of <= 6 mm
740911	plates, sheets and strip, of refined copper, in coils, of a thickness of > 0,15 mm (excl. expanded sheet and strip and electrically insulated strip)
740919	plates, sheets and strip, of refined copper, not in coils, of a thickness of > 0,15 mm (excl. expanded sheet and strip and electrically insulated strip)
740940	plates, sheets and strip, of copper-nickel base alloys "cupro-nickel" or copper-nickel-zinc base alloys "nickel silver", of a thickness of > 0,15 mm (excl. expanded sheet and strip and electrically insulated strip)
741129	tubes and pipes of copper alloys (excl. copper-zinc base alloys "brass", copper-nickel base alloys "cupro-nickel" and copper-nickel-zinc base alloys "nickel silver")
741521	washers, "incl. spring washers and spring lock washers", of copper
750511	bars, rods, profiles and wire, of non-alloy nickel, n.e.s. (excl. electrically insulated products)
750521	wire of non-alloy nickel (excl. electrically insulated products)
750610	plates, sheets, strip and foil, of non-alloy nickel (excl. expanded plates, sheets or strip)
750711	tubes and pipes of non-alloy nickel
750890	articles of nickel
760519	Wire of non-alloy aluminium, with a maximum cross-sectional dimension of <= 7 mm (other than stranded wires, cables, ropes and other articles of heading 7614, electrically insulated wires, strings for musical instruments)

760529	Wire, of aluminium alloys, having a maximum cross-sectional dimension of <= 7 mm (other than stranded wires, cables, ropes and other articles of heading 7614, electrically insulated wires, strings for musical instruments)
760692	Plates, sheets and strip, of aluminium alloys, of a thickness of > 0,2 mm (other than square or rectangular)
760720	Aluminium foil, backed, of a thickness (excl. any backing) of <= 0,2 mm (excl. stamping foils of heading 3212, and foil made up as christmas tree decorating material)
761100	Reservoirs, tanks, vats and similar containers, of aluminium, for any material (other than compressed or liquefied gas), of a capacity of > 300 l, not fitted with mechanical or thermal equipment, whether or not lined or heat-insulated (excl. containers specifically constructed or equipped for one or more types of transport)
761290	casks, drums, cans, boxes and similar containers, incl. rigid tubular containers, of aluminium, for any material (other than compressed or liquefied gas), of a capacity of <= 300 l, n.e.s.
761300	Aluminium containers for compressed or liquefied gas
761610	Nails, tacks, staples (other than those of heading 8305), screws, bolts, nuts, screw hooks, rivets, cotters, cotter pins, washers and similar articles.....
780411	Lead plates, sheets, strip and foil; lead powders and flakes - Plates, sheets, strip and foil - Sheets, strip and foil of a thickness (excluding any backing) not exceeding 0,2 mm
780419	Lead plates, sheets, strip and foil; lead powders and flakes - Plates, sheets, strip and foil - Other
790500	zinc plates, sheets, strip and foil
800120	unwrought tin alloys
800300	Tin bars, rods, profiles and wire
800700	Articles of tin
810110	tungsten powders
810297	Molybdenum waste and scrap (excl. ash and residues containing molybdenum)
810590	Articles of cobalt
810931	Zirconium waste and scrap - Containing less than 1|part hafnium to|500|parts zirconium by weight
810939	Zirconium waste and scrap - Other
810991	Articles of zirconium - Containing less than 1|part hafnium to|500|part zirconium by weight
810999	Articles of zirconium - Other
820220	Bandsaw blades of base metal
820760	Tools for boring or broaching
820810	Knives and cutting blades, for machines or for mechanical appliances - for metalworking
820820	Knives and cutting blades, for machines or for mechanical appliances - for wood-working
820830	Knives and cutting blades, for machines or for mechanical appliances - used by the food industry
820890	Knives and cutting blades, for machines or for mechanical appliances - other
830120	locks used for motor vehicles, of base metal

830170	Keys presented separately
830230	Other mountings, fittings and similar articles suitable for motor vehicles
830710	flexible tubing of iron or steel, with or without fittings
830990	Stoppers, caps and lids, incl. screw caps and pouring stoppers, capsules for bottles, threaded bungs, bung covers, seals and other packing accessories of base metal (excl. crow corks)
840212	Watertube boilers with a steam production not exceeding 45 tonnes per hour
840219	Other vapour generating boilers, including hybrid boilers
840220	Superheated water boilers
840290	Steam or other vapour generating boilers (other than central heating hot water boilers capable also of producing low pressure steam); superheated water boilers - Parts
840410	Auxiliary plant for use with boilers of heading 8402 or 8403, e.g. economizers, superheaters, soot removers and gas recoverers;
840420	Condensers for steam or other vapour power units
840490	Producer gas or water gas generators, with or without their purifiers; acetylene gas generators and similar water process gas generators, with or without their purifiers - Parts
840590	parts of producer gas or water gas generators and acetylene gas generators or similar water process gas generators, n.e.s.
840690	Steam turbines and other vapour turbines - Parts
841210	Reaction engines other than turbojets
841221	Engines and motors - linear acting (cylinders)
841229	Hydraulic power engines and motors - Other
841239	Pneumatic power engines and motors - Other
841490	Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; gas-tight biological safety cabinets, whether or not fitted with filters - Parts
841583	Other air-conditioning machines, comprising a motor-driven fan and elements for changing the temperature and humidity, including those machines in which the humidity cannot be separately regulated - not incorporating a refrigerating unit
841610	furnace burners for liquid fuel
841620	Furnace burners for pulverised solid fuel or gas, incl. combination burners
841630	Mechanical stokers, incl. their mechanical grates, mechanical ash dischargers and similar appliances (excl. burners)
841690	Parts of furnace burners such as mechanical stokers, incl. their mechanical grates, mechanical ash dischargers and similar appliances
841720	Bakery ovens, incl. biscuit ovens, non-electric
841919	instantaneous or storage water heaters, non-electric (excl. instantaneous gas water heaters and boilers or water heaters for central heating)
842099	Parts of calendering or other rolling machines, other than for metals or glass, and cylinders therefor - Other
842119	Centrifuges, including centrifugal dryers - other
842191	Parts of centrifuges, incl. centrifugal dryers
84248940	Mechanical appliances for projecting, dispersing, or spraying of a kind used solely or principally for the manufacture of printed circuits or printed circuit assemblies

84249020	Parts of mechanical appliances of subheading 8424 89 40
842511	Pulley tackle and hoists other than skip hoists or hoists of a kind used for raising vehicles powered by electric motor
842612	Mobile lifting frames on tyres and straddle carriers
842699	Ships' derricks; cranes, including cable cranes; mobile lifting frames, straddle carriers and works trucks fitted with a crane - Other
842820	Pneumatic elevators and conveyors
842832	Other continuous-action elevators and conveyors, for goods or materials - Other, bucket type
842833	Other continuous-action elevators and conveyors, for goods or materials - Other, belt type
842890	Other machinery
842919	Bulldozers and angledozers - Other
842959	Mechanical shovels, excavators and shovel loaders - Other
843010	Piledrivers and pile extractors
843039	Coal or rock cutters and tunnelling machinery - Other
843910	Machinery for making pulp of fibrous cellulosic material
843930	Machinery for finishing paper or paperboard
844090	Bookbinding machinery, including book-sewing machines - Parts
844130	Machines for making cartons, boxes, cases, tubes, drums or similar containers, other than by moulding
844240	Parts of the foregoing machinery, apparatus or equipment
844313	Other offset printing machinery
844315	Letterpress printing machinery, other than reel fed, excluding flexographic printing
844316	Flexographic printing machinery
844317	Gravure printing machinery
844391	Parts and accessories of printing machinery used for printing by means of plates, cylinders and other printing components of heading 8442
844400	Machines for extruding, drawing, texturing or cutting man-made textile materials
844811	Dobbies and jacquards; card-reducing, copying, punching or assembling machines for use therewith
844819	Auxiliary machinery for machines of heading 8444, 8445, 8446 or 8447 - Other
844833	Spindles, spindle flyers, spinning rings and ring travellers
844842	Reeds for looms, healds and heald-frames
844849	Parts and accessories of weaving machines (looms) or of their auxiliary machinery - Other
844851	Sinkers, needles and other articles used in forming stitches
845110	Dry-cleaning machines
845129	Drying machines - Other
845130	Ironing machines and presses (including fusing presses)

845190	Machinery (other than machines of heading 8450) for washing, cleaning, wringing, drying, ironing, pressing (including fusing presses), bleaching, dyeing, dressing, finishing, coating or impregnating textile yarns, fabrics or made-up textile articles and machines for applying the paste to the base fabric or other support used in the manufacture of floor coverings such as linoleum; machines for reeling, unreeling, folding, cutting or pinking textile fabrics - Parts
845310	Machinery for preparing, tanning or working hides, skins or leather
845380	Other machinery
845390	Machinery for preparing, tanning or working hides, skins or leather or for making or repairing footwear or other articles of hides, skins or leather, other than sewing machines - Parts
845410	Converters
845910	Way-type unit head machines
845970	Other threading or tapping machines
846120	Shaping or slotting machines, for working metals, metal carbides or cermets
846130	Broaching machines, for working metals, metal carbides or cermets
846140	Gear-cutting, gear-grinding or gear-finishing machines
846190	Machine tools for planing, shaping, slotting, broaching, gear cutting, gear grinding or gear finishing, sawing, cutting-off and other machine tools working by removing metal or cermets, not elsewhere specified or included - Other
846520	Machining centres
846593	Grinding, sanding or polishing machines
846594	Bending or assembling machines
846610	Tool holders and self-opening dieheads
846691	Other parts and accessories suitable for use solely or principally with the machines of headings 8456 to 8465, including work or tool holders, self-opening dieheads, dividing heads and other special attachments for the machines; tool holders for any type of tool for working in the hand - For machines of heading 8464
846692	Other parts and accessories suitable for use solely or principally with the machines of headings 8456 to 8465, including work or tool holders, self-opening dieheads, dividing heads and other special attachments for the machines; tool holders for any type of tool for working in the hand - For machines of heading 8465
847210	Duplicating machines
847230	Machines for sorting or folding mail or for inserting mail in envelopes or bands, machines for opening, closing or sealing mail and machines for affixing or cancelling postage stamps
847321	Parts and accessories of the electronic calculating machines of subheading 8470 10, 8470 21 or 8470 29
847410	Sorting, screening, separating or washing machines
847439	Mixing or kneading machines - Other

847480	Machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid (including powder or paste) form; machinery for agglomerating, shaping or moulding solid mineral fuels, ceramic paste, unhardened cements, plastering materials or other mineral products in powder or paste form; machines for forming foundry moulds of sand - Other machinery
847521	Machines for making optical fibres and preforms thereof
847529	Machines for manufacturing or hot working glass or glassware - Other
847590	Machines for assembling electric or electronic lamps, tubes or valves or flashbulbs, in glass envelopes; machines for manufacturing or hot working glass or glassware - Parts
847740	Vacuum-moulding machines and other thermoforming machines
847751	For moulding or retreading pneumatic tyres or for moulding or otherwise forming inner tubes
847910	Machinery for public works, building or the like
847930	Presses for the manufacture of particle board or fibre building board of wood or other ligneous materials and other machinery for treating wood or cork
847950	Industrial robots, not elsewhere specified or included
847990	Machines and mechanical appliances having individual functions, not specified or included elsewhere in Chapter 84 - Parts
848020	Mould bases
848030	Moulding patterns
848060	Moulds for mineral materials
848110	Pressure-reducing valves
848120	Valves for oleohydraulic or pneumatic transmissions
848140	Safety or relief valves
848220	Tapered roller bearings, including cone and tapered roller assemblies
848291	Balls, needles and rollers
848299	Other parts
848410	Gaskets and similar joints of metal sheeting combined with other material or of two or more layers of metal
848420	Mechanical seals
848490	Gaskets and similar joints of metal sheeting combined with other material or of two or more layers of metal; sets or assortments of gaskets and similar joints, dissimilar in composition, put up in pouches, envelopes or similar packings; mechanical seals - Other
850133	Other DC motors; DC generators, other than photovoltaic generators - of an output exceeding 75 kW but not exceeding 375 kW
850162	AC generators (alternators), other than photovoltaic generators of an output exceeding 75 kVA but not exceeding 375 kVA
850163	AC generators (alternators), other than photovoltaic generators of an output exceeding 375 kVA but not exceeding 750 kVA
850164	AC generators (alternators), other than photovoltaic generators of an output exceeding 750 kVA
850231	Generating sets, wind-powered
850239	Other generating sets - Other
850240	Electric rotary converters

850433	Transformers having a power handling capacity exceeding 16 kVA but not exceeding 500 kVA
850434	Transformers having a power handling capacity exceeding 500 kVA
850520	Electromagnetic couplings, clutches and brakes
850690	Primary cells and primary batteries - Parts
850730	Electric accumulators, including separators therefor, whether or not rectangular (including square) - Nickel-cadmium
851431	Electron beam furnaces
852550	Transmission apparatus
853090	Electrical signalling, safety or traffic control equipment for railways, tramways, roads, inland waterways, parking facilities, port installations or airfields (other than those of heading 8608) - Parts
853210	Fixed capacitors designed for use in 50/60 hz circuits and having a reactive power-handling capacity of >= 0,5 kvar "power capacitors"
853329	Other fixed resistors - Other
853530	Isolating switches and make-and-break switches
853590	Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, fuses, lightning arresters, voltage limiters, surge suppressors, plugs and other connectors, junction boxes), for a voltage exceeding 1 000 V - Other
853941	Arc lamps
854020	Television camera tubes; image converters and intensifiers; other photocathode tubes
854060	Other cathode ray tubes
854079	Microwave tubes (for example, magnetrons, klystrons, travelling-wave tubes, carcinotrons), excluding grid-controlled tubes - Other
854081	Receiver or amplifier valves and tubes
854089	Other valves and tubes - Other
854091	Parts of cathode ray tubes
854099	Other parts
854310	Particle accelerators
854790	Insulating fittings for electrical machines, appliances or equipment, being fittings wholly of insulating material apart from any minor components of metal (for example, threaded sockets) incorporated during moulding solely for purposes of assembly, other than insulators of heading 8546; electrical conduit tubing and joints therefor, of base metal lined with insulating material - Other
860290	Other rail locomotives (excl. those powered from an external source of electricity or by accumulators and diesel-electric locomotives)
860400	Railway or tramway maintenance or service vehicles, whether or not self-propelled (for example, workshops, cranes, ballast tampers, trackliners, testing coaches and track inspection vehicles)
860692	Other railway or tramway goods vans and wagons, not self-propelled - Open, with non-removable sides of a height exceeding 60 cm
870121	Road tractors for semi-trailers - With only compression-ignition internal combustion piston engine (diesel or semi-diesel)
870122	Road tractors for semi-trailers - With both compression-ignition internal combustion piston engine (diesel or semi-diesel) and electric motor as motors for propulsion

870123	Road tractors for semi-trailers - With both spark-ignition internal combustion piston engine and electric motor as motors for propulsion
870124	Road tractors for semi-trailers - With only electric motor for propulsion
870130	Track-laying tractors (excl. pedestrian-controlled)
870410	Dumpers designed for off-highway use
870422	Other motor vehicles for the transport of goods - of a gross vehicle weight exceeding 5 tonnes but not exceeding 20 tonnes:
870432	Other motor vehicles for the transport of goods - of a gross vehicle weight exceeding 5 tonnes
870520	Mobile drilling derricks
870530	Fire fighting vehicles
870590	Special purpose motor vehicles, other than those principally designed for the transport of persons or goods (for example, breakdown lorries, crane lorries, fire fighting vehicles, concrete-mixer lorries, road sweeper lorries, spraying lorries, mobile workshops, mobile radiological units) - Other
870990	Works trucks, self-propelled, not fitted with lifting or handling equipment, of the type used in factories, warehouses, dock areas or airports for short distance transport of goods; tractors of the type used on railway station platforms; parts of the foregoing vehicles - Parts
871620	Self-loading or self-unloading trailers and semi-trailers for agricultural purposes
871639	Other trailers and semi-trailers for the transport of goods - Other
901010	Apparatus and equipment for automatically developing photographic (including cinematographic) film or paper in rolls or for automatically exposing developed film to rolls of photographic paper
901540	Photogrammetrical surveying instruments and appliances
901580	Other instruments and appliances
901590	Surveying (including photogrammetrical surveying), hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding compasses; rangefinders - Parts and acessories
902910	Revolution counters, production counters, taximeters, milometers, pedometers and the like
903120	Test benches
903281	Other automatic regulating or controlling instruments and apparatus - Hydraulic or pneumatic - Other
940110	Seats for aircraft
940120	Seats for motor vehicles
940330	Wooden furniture of a kind used in offices
940610	Prefabricated buildings of wood
940690	Prefabricated buildings, whether or not complete or already assembled - Other
960630	Button moulds and other parts of buttons; button blanks
960891	Pen nibs and nib points
961220	Of man-made fibres, measuring less than 30 mm in width, permanently put in plastic or metal cartridges of a kind used in automatic typewriters, automatic data- processing equipment and other machines

List of goods and technolgy as referred to in Article 3k – Part B

CN code	Description
271019	medium oils and preparations, of petroleum or bituminous minerals, not containing biodiesel, n.e.s.
847130	data-processing machines, automatic, portable, weighing <= 10 kg, consisting of at least a central processing unit, a keyboard and a display (excl. peripheral units)
847141	data-processing machines, automatic, comprising in the same housing at least a central processing unit and one input unit and one output unit, whether or not combined (excl. portable weighing <= 10 kg and excl. those presented in the form of systems and peripheral units)
847149	data-processing machines, automatic, comprising at least a central processing unit, a keyboard and a display, presented in the form of systems (excl. portable weighing <= 10 kg and excl. peripheral units)
847150	processing units for automatic data-processing machines, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units (excl. those of heading 8471.41 or 8471.49 and excl. peripheral units)
847160	input or output units for automatic data-processing machines, whether or not containing storage units in the same housing
847170	storage units for automatic data-processing machines
847180	units for automatic data-processing machines (excl. processing units, input or output units and storage units)
847190	magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, n.e.s.
847330	parts and accessories of automatic data-processing machines or for other machines of heading 8471
850220	generating sets with spark-ignition internal combustion piston engine
851511	soldering irons and guns, electric
851519	brazing or soldering machines (excl. soldering irons and guns)
851761	base stations of apparatus for the transmission or reception of voice, images or other data
852351	solid-state, non-volatile data storage devices for recording data from an external source [flash memory cards or flash electronic storage cards] (excl. goods of chapter 37)
852691	radio navigational aid apparatus
852692	radio remote control apparatus
853400	printed circuits
900211	objective lenses for cameras, projectors or photographic enlargers or reducers

900219	objective lenses (excl. for cameras, projectors or photographic enlargers or reducers)
900710	cinematographic cameras
901310	telescopic sights for fitting to arms; periscopes; telescopes designed to form parts of machines, appliances, instruments or apparatus of chapter 90 or section XVI
95030075	plastic toys and models, incorporating a motor (excl. electric trains, scale model assembly kits, and toys representing animals, human or non-human creatures)
95030079	toys and models, incorporating a motor (excl. plastic, electric trains, scale model assembly kits, and toys representing animals, human or non-human creatures)

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ANNEX IX

The following Annex is added:

‘ANNEX XXX

LIST OF GOODS AS REFERRED TO IN ARTICLE 3a

Aluminium, including bauxite

Chromium

Cobalt

Copper

Iron ore

Mineral fertilisers, including potash and phosphate rock

Molybdenum

Nickel

Palladium

Rhodium

Scandium

Titanium

Vanadium

Heavy rare earths (dysprosium, erbium, europium, gadolinium, holmium, lutetium, terbium, thulium, ytterbium, yttrium).

Light rare earths (cerium, lanthanum, neodymium, praseodymium and samarium).

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ANNEX X

The following Annex is added:

‘ANNEX XXXI

List of diesel products as referred to in Article 3m paragraph 7 and 8

	Gas oils
2710 19 31	For undergoing a specific process
2710 19 35	For undergoing chemical transformation by a process other than those specified in respect of subheading|2710|19|31
	For other purposes
2710 19 43	With a sulphur content not exceeding 0,001|% by weight
2710 19 46	With a sulphur content exceeding 0,001|% by weight but not exceeding 0,002|% by weight
2710 19 47	With a sulphur content exceeding 0,002|% by weight but not exceeding 0,1|% by weight
2710 19 48	With a sulphur content exceeding 0,1|% by weight

	Gas oils
2710 20 11	With a sulphur content not exceeding 0,001|% by weight
2710 20 16	With a sulphur content exceeding 0,001|% by weight but not exceeding 0,1|% by weight
2710 20 19	With a sulphur content exceeding 0,1|% by weight

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