Annex 6 – High-tech aggregation by patents

High-tech patents

Based on the data on patent applications by IPC subclass, Eurostat calculates data on patent applications in high technology fields.

High tech patents are counted following the criteria established by the Trilateral Statistical Report, where the subsequent technical fields are defined as high technology: Computer and automated business equipment; micro-organism and genetic engineering; aviation; communications technology; semiconductors; lasers.

The IPC sub-classes corresponding to the above high tech fields are listed in Table 1.

Table 1- IPC subclasses considered as high-technology

ICT group	IPC subclass	Definition
Computer and automated business equipment	B41J	Typewriters; selective printing mechanisms, i.e. mechanisms printing otherwise than from a form; correction of typographical errors
	G06C	Digital computers in which all the computation is effected mechanically
	G06D	Digit fluid-pressure computing devices
	G06E	Optical computing devices
	G11C 29/54	Arrangements for designing test circuits, e.g. design for test (DFT) tools
	G06Q 10/00	Administration, e.g. office automation or reservations; Management, e.g. resource or project management
	G06Q 30-99/00	Commerce, e.g. marketing, shopping, billing, auctions or e-commerce, Finance, e.g. banking, investment or tax processing; Insurance, e.g. risk analysis or pensions, Systems or methods specially adapted for a specific business sector, e.g. health care, utilities, tourism or legal services, Systems or methods specially adapted for administrative, commercial, financial, managerial, supervisory or forecasting purposes, not involving significant data processing, Subject matter not provided for in other groups of this subclass
	G06Q 20/00	Payment schemes, architectures or protocols
	G06G	Analogue computers
	G06J	Computer systems based on specific computational models
	G06F 3/01	Input arrangements or combined input and output arrangements for interaction between user and computer
	G06M	Static stores
Aviation	B64B	Lighter-than-air aircraft
	B64C	Aeroplanes; helicopters
	B64D	Equipment for fitting in or to aircraft; flying suits; parachutes; arrangements or mounting of power plants or propulsion transmissions
	B64F	Ground or aircraft-carrier-deck installations
	B64G	Cosmonautics; vehicles or equipment therefor
Micro-organism and genetic engineering	**C40B 10/00**	Directed molecular evolution of macromolecules, e.g. RNA, DNA or proteins
	C40B 40/00-50/18	Libraries per se, e.g. arrays, mixtures, methods of creating libraries, e.g. combinatorial synthesis

Annex 6 – High-tech aggregation by patents

ICT group	IPC subclass	Definition
	C12P	Fermentation or enzyme-using processes to synthesise a desired chemical compound or composition or to separate optical isomers from a racemic mixture
	C12Q	Measuring or testing processes involving enzymes or micro-organisms; compositions or test papers therefor; processes of preparing such compositions; condition-responsive control in microbiological or enzymological processes
Lasers	H01S	Devices using stimulation emission
Semiconductors	H01L	Semiconductor devices; electric solid state devises not otherwise provided for
Communication technology	H04B	Transmission
	H04H	Broadcast communication
	H04J	Multiplex communication
	H04K	Secret communication; jamming of communication
	H04L	Transmission of digital information, e.g. telegraphic communication
	H04M	Telephonic communication
	H04N	Pictorial communication e.g. Television
	H04Q	Selecting
	H04R	Loudspeakers, microphones pick-ups or like acoustic eletromechanical transducers; deaf-aid sets; public address systems
	H04S	Stereophonic systems

It should be noticed that, due to the fact that the OECD does not report on IPC subclass G06N separately, data on high-tech patents granted by the USPTO exclude this class from the definition of high-tech patents.

Biotechnology patents

Based on the data on patent applications by IPC subclass, Eurostat calculates data on patent applications in biotechnology. The IPC sub-classes used for the biotechnology sector are listed in Table 2.

Table 2: IPC subclasses considered as biotechnology sector

IPC codes	Definition
A01H 1/00	Processes for modifying genotypes
A01H 4/00	Plant reproduction by tissue culture techniques
A61K 38/00	Medicinal preparations containing peptides
A61K 39/00	Medicinal preparations containing antigens or antibodies
A61K 48/00	Medicinal preparations containing genetic material which is inserted into cells of the living body to treat genetic diseases; Gene therapy
C02F 3/34	Biological treatment of water, waste water, or sewage: characterised by the micro-organisms used
C40B 40/00 - 50/18	Libraries per se, e.g. arrays, mixtures, methods of creating libraries, e.g. combinatorial synthesis
C40B 70/00 - 80/00	Tags or labels specially adapted for combinatorial chemistry or libraries, e.g. fluorescent tags or bar codes, Linkers or spacers specially adapted for combinatorial chemistry or libraries, e.g. traceless linkers or safety-catch linkers
C40B 10/00	Directed molecular evolution of macromolecules, e.g. RNA, DNA or proteins

Eurostat indicators on High-tech industry and Knowledge – intensive services

Annex 6 – High-tech aggregation by patents

IPC codes	Definition
C12N	Micro-organisms or enzymes; compositions thereof propagating, preserving, or maintaining micro-organisms; mutation or genetic engineering; culture media
C12P	Fermentation or enzyme-using processes to synthesise a desired chemical compound or composition or to separate optical isomers from a racemic mixture
C12Q	Measuring or testing processes involving enzymes or micro-organisms; compositions or test papers therefor; processes of preparing such compositions; condition-responsive control in microbiological or enzymological processes
C12S	Processes using enzymes or micro-organisms to liberate, separate or purify a pre-existing compound or composition processes using enzymes or micro-organisms to treat textiles or to clean solid surfaces of materials
G01N 27/327	Investigating or analysing materials by the use of electric, electro-chemical, or magnetic means: biochemical electrodes
G01N 33/53*	Investigating or analysing materials by specific methods not covered by the preceding groups: immunoassay; biospecific binding assay; materials therefore
G01N 33/54*	Investigating or analysing materials by specific methods not covered by the preceding groups: double or second antibody: with steric inhibition or signal modification: with an insoluble carrier for immobilising immunochemicals: the carrier being organic: synthetic resin: as water suspendable particles: with antigen or antibody attached to the carrier via a bridging agent: Carbohydrates: with antigen or antibody entrapped within the carrier
G01N 33/55*	Investigating or analysing materials by specific methods not covered by the preceding groups: the carrier being inorganic: Glass or silica: Metal or metal coated: the carrier being a biological cell or cell fragment: Red blood cell: Fixed or stabilised red blood cell: using kinetic measurement: using diffusion or migration of antigen or antibody: through a gel
G01N 33/57*	Investigating or analysing materials by specific methods not covered by the preceding groups: for venereal disease: for enzymes or isoenzymes: for cancer: for hepatitis: involving monoclonal antibodies: involving limulus lysate
G01N 33/68	Investigating or analysing materials by specific methods not covered by the preceding groups: involving proteins, peptides or amino acids
G01N 33/74	Investigating or analysing materials by specific methods not covered by the preceding groups: involving hormones
G01N 33/76	Investigating or analysing materials by specific methods not covered by the preceding groups: human chorionic gonadotropin
G01N 33/78	Investigating or analysing materials by specific methods not covered by the preceding groups: thyroid gland hormones
G01N 33/88	Investigating or analysing materials by specific methods not covered by the preceding groups: involving prostaglandins
G01N 33/92	Investigating or analysing materials by specific methods not covered by the preceding groups: involving lipids, e.g. cholesterol

** Those IPC codes also include subgroups up to one digit (0 or 1 digit). For example, in addition to the code G01N 33/53, the codes G01N 33/531, GO1N 33/532, etc. are included.*

Codes put in bold are those that changed with the update to IPC 8th edition, version 1st January 2006.