



Topic 8: **IPC and CPC Basics**

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INID codes

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Priority data

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kin...
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: NITROGEN-EFFICIENT MONOCOT PLANTS

Title



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1. (WO2007076115) NITROGEN-EFFICIENT MONOCOT PLANTS

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Priority Data: 60/753,818 23.12.2005 US

Title
(EN) NITROGEN-EFFICIENT MONOCOT PLANTS
(FR) PLANTES MONOCOTYLEDONES AYANT UN RENDEMENT EFFICACE EN AZOTE

Abstract: **(EN)** Methods of increasing nitrogen utilization efficiency in monocot plants through genetic modification to increase the levels of alanine aminotransferase expression and plants

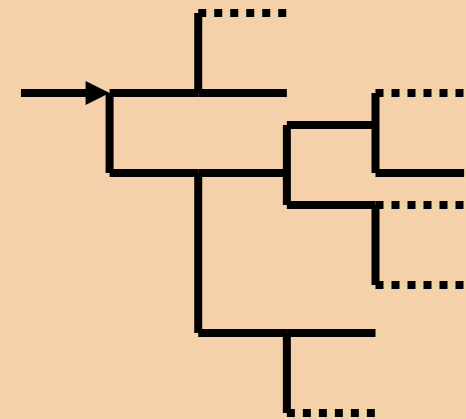
Schematic of Key Steps in Nitrogen Utilization in a Plant Cell

Basics of IPC

The following presentation addresses:

- ▶ Elements of IPC scheme:
 - symbols, hierarchy, titles
 - other elements of IPC scheme
- ▶ Scope of IPC places

Tree-like
hierarchy





IPC and CPC

- IPC - International Patent Classification
- CPC - Cooperative Patent Classification
- IPC based on international treaty: Strassbourg Agreement
- IPC Classification is required for all PCT applications
- IPC is effectively applied to all patent applications world wide
- CPC is derived from former EPO's ECLA classification which was based on IPC
- CPC is applied by EPO and USPTO; in future also by KIPO and CIPO
 - all EP and US documents are classified with CPC (in Espacenet, not on front pages) and IPC (derived from CPC)
 - Some other patent documents, depending on reclassification by EPO examiner, i.e. some IPC classified documents of other countries are given an additional CPC classification by an EPO examiner



IPC and CPC

- IPC and CPC are mostly compatible, i.e. CPC is a finer subdivision of the IPC
 - Exception: Y02 class is not in IPC
- CPC codes can easily be converted to IPC codes by rolling them up to the hierarchically higher code which is in the IPC



Guide to the IPC

The official **Guide to the IPC** provides comprehensive information on the IPC. It is available for download on the WIPO website of the IPC at:

http://www.wipo.int/export/sites/www/classifications/ipc/en/guide/guide_ipc_2009.pdf

In the lower left corner of many of the following slides you will find references to the paragraphs of the official Guide which cover the subject matter explained on a slide.





Format of IPC Symbols

A23G 9/02

- ▶ complete **group symbol**; consists of different components

A Section (A, B, ... H)

A23 Class (any 2 digits)

A23G Subclass (any letter)

A23G 9/02 Group

Main group part


/

Subgroup part



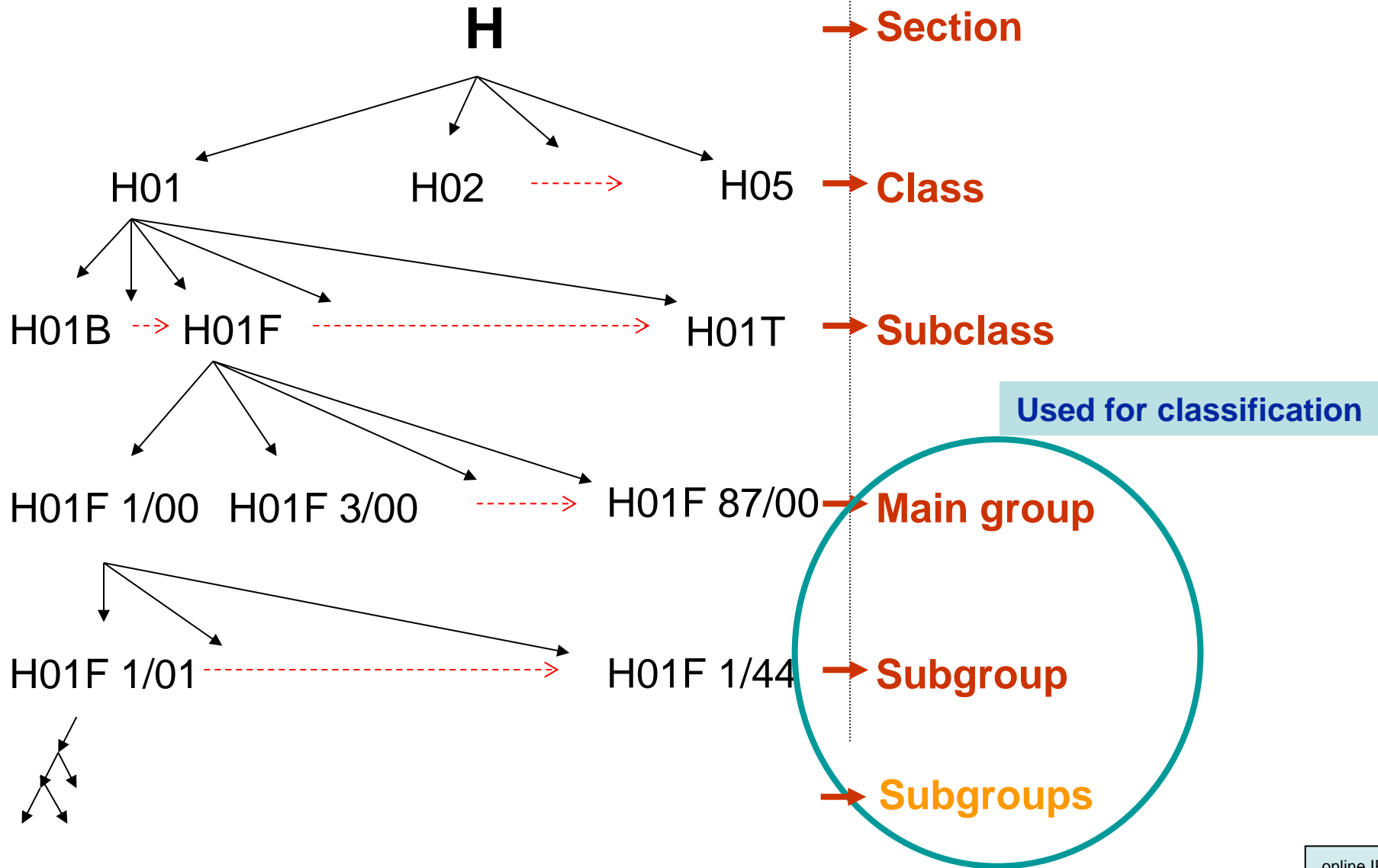
IPC logical/hierarchical structure

- ▶ hierarchical top level: 8 Sections

A	SECTION A — HUMAN NECESSITIES
B	SECTION B — PERFORMING OPERATIONS; TRANSPORTING
C	SECTION C — CHEMISTRY; METALLURGY
D	SECTION D — TEXTILES; PAPER
E	SECTION E — FIXED CONSTRUCTIONS
F	SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
G	SECTION G — PHYSICS
H	SECTION H — ELECTRICITY 

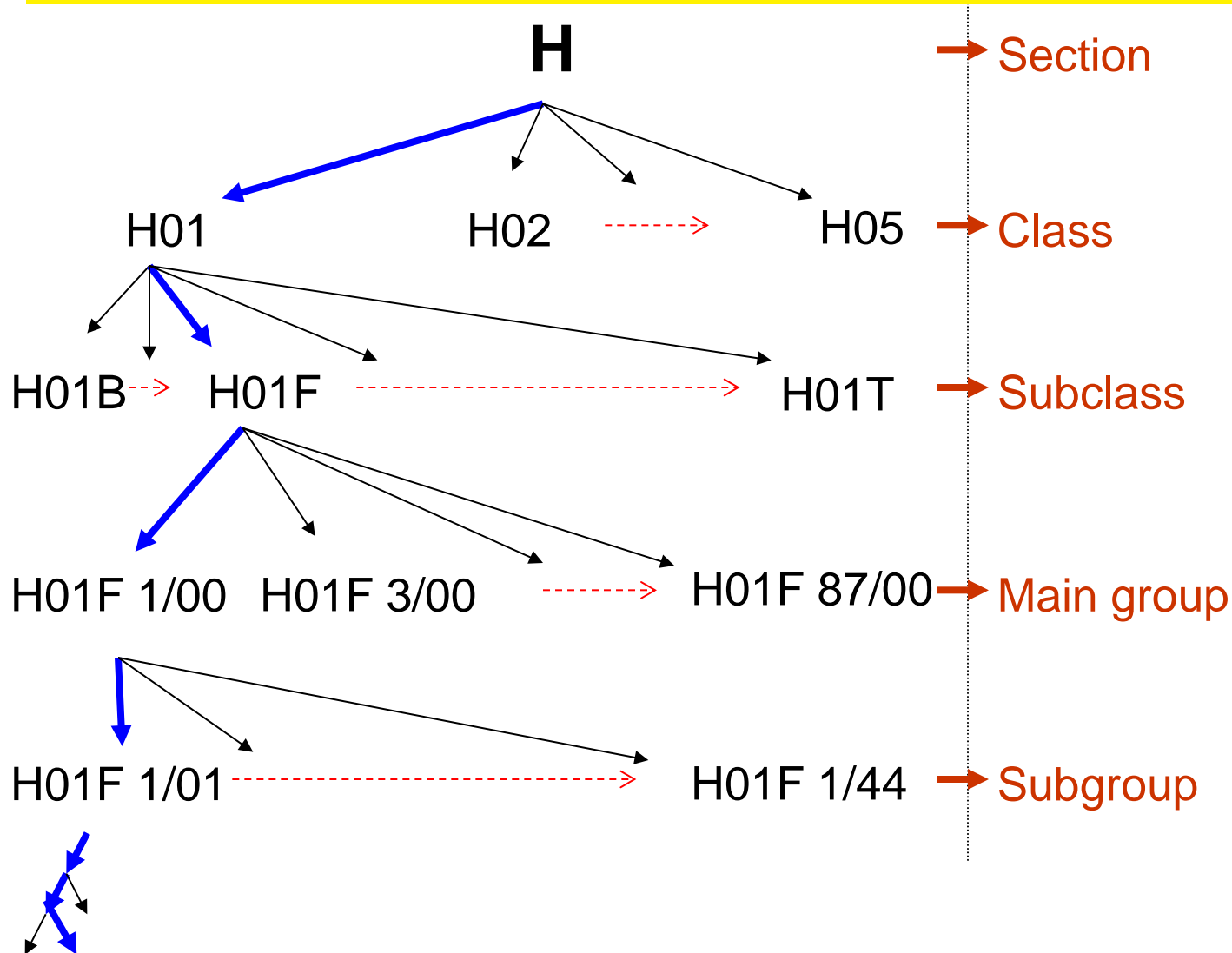
next slide

IPC hierarchical structure





IPC hierarchical structure





34 159 documents

H SECTION H — ELECTRICITY

Section

H01 BASIC ELECTRIC ELEMENTS

Class

H01F MAGNETS; INDUCTANCES; TRANSFORMERS; SELECTION OF MATERIALS FOR THEIR MAGNETIC PROPERTIES (ceramics based on ferrites C04B 35/26; alloys C22C; thermomagnetic devices H01L 37/00; loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers H04R)

Subclass

H01F 1/00 Magnets or magnetic bodies characterised by the magnetic materials thereof; Selection of materials for their magnetic properties (thin magnetic films characterised by the

Main group

- H01F 1/01 · of inorganic materials
- H01F 1/03 · · characterised by their coercivity [6]
- H01F 1/032 · · · of hard-magnetic materials [6]
- H01F 1/04 · · · · metals or alloys [6]
- H01F 1/047 · · · · · Alloys characterised by their composition [5,6]
- H01F 1/053 · · · · · containing rare earth metals [5,6]
- H01F 1/055 · · · · · and magnetic transition metals, e.g. SmCo₅ [6]
- H01F 1/057 · · · · · and IIIa elements, e.g. Nd₂Fe₁₄B [6]
- H01F 1/058 · · · · · and IVa elements, e.g. Gd₂Fe₁₄C [6]
- H01F 1/059 · · · · · and Va elements, e.g. Sm₂Fe₁₇N₂ [6]

Subgroups



12th level

One point for each subdivision

98 docs

607 docs

▶ sufficiently small numbers

Hierarchy of Subgroups

► Level of hierarchy:

indicated by dots

number of dots > indentation level, hierarchical level

> **Independent of numbering of subgroups !**

G01N 33/483 •• Physical analysis of biological material
33/487 ••• of liquid biological material
33/49 •••• blood
33/50 •• Chemical analysis of biological material, e.g. blood

Lesson: Hierarchical level is independent of the number

Examples of titles

- A 47 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY;
HUNTING; TRAPPING; FISHING
- A01J Manufacture of dairy products
- A01C Planting; Sowing; Fertilising
- A47D Furniture specially adapted for children

Single part title

Multi part titles: separated by “;”
> accumulation of different subject matter

Subgroup titles

- A01K 31/00 Housing birds
 - :
 - 31/06 . Cages
 - 31/07 . . **T**ransportable cages (31/08 takes precedence)
 - 31/08 . . **C**ollapsible cages

> upper case letters: independent titles

- H01S 3/00 Lasers
 - 3/14 . **c**haracterised by the material used as the active medium

> lower case: titles as continuation of preceding title



Attention !

B64C AEROPLANES; HELICOPTERS

5/00 Stabilising surfaces

5/06 . Fins

5/08 . mounted on, or supported by, wings

5/10 . adjustable

Observe hierarchy when combining titles !

Combined titles:

5/08 . Stabilising surfaces mounted on, or supported by, wings

5/10 . Adjustable stabilising surfaces



Scope of IPC entries

► **Scope** (content) is defined by titles

- sections, classes: titles only broadly indicative of content
- subclasses, groups: titles should define content as precisely as possible

N.B.: Scope is always defined by title of place + titles of hierarchically higher places

e.g.:	H01S	3/00	Lasers
	:		
	H01S	3/05	. Construction or shape of optical resonators



Complex example

Section:	H		ELECTRICITY
Class:	H01		BASIC ELECTRIC ELEMENTS
Subclass:	H01F		MAGNETS
Main group:	H01F	1/00	. Magnets or magnetic bodies characterised by the magnetic materials therefor
One-dot subgroup:		1/01	.. of inorganic materials
Two-dot subgroup:		1/03	... characterised by their coercivity
Three-dot subgroup:		1/032 of hard magnetic materials
Four-dot subgroup:		1/04 Metals or alloys
Five-dot subgroup:		1/047 Alloys characterised by their composition
Six-dot subgroup:		1/053 containing rare earth metals

Group H01F 1/053 thus actually concerns:

“Magnets of inorganic materials characterised by their coercivity, comprising hard magnetic alloys specifically containing rare earth metals”



IPC without hierarchy ?

▶ NO !

- Just an (excel) table of numbers and 'current' titles does not work:
 - combining of hierarchically dependent titles would not work
 - each group would need to have the full title
 - similarity of scope would not become clear

Overlap, similarity of scopes

- A61B 5/00 Measuring for diagnostic purposes

↔

G01 Measuring

- F16F Springs; Shock absorbers

↔

B60G Vehicle suspensions

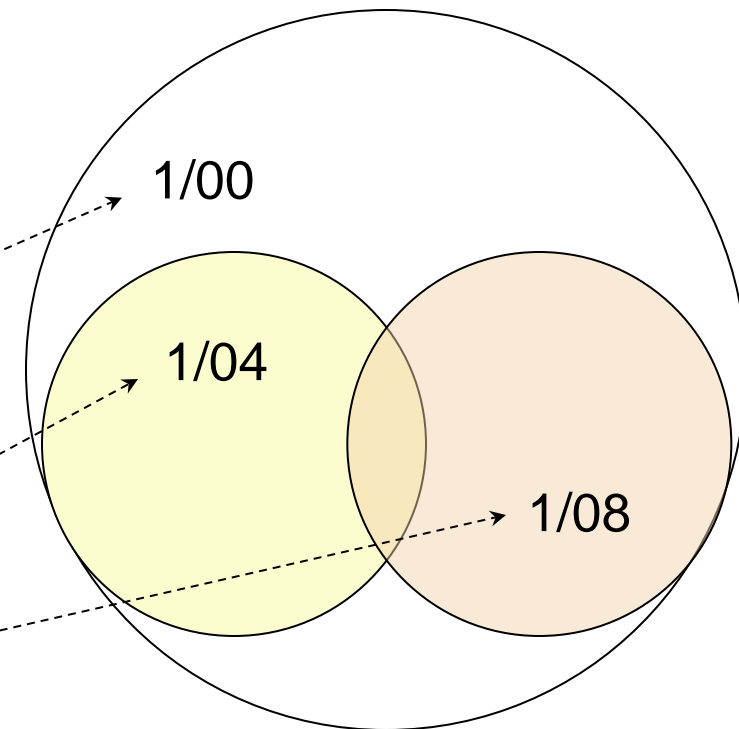
▶ Requires expertise in using the IPC

▶ Requires additional features in IPC clarifying scope

Scope of IPC Groups

- Mutually exclusive scopes are ideal situations
- Overlap is possible

G02B 1/00 Optical elements
1/02
1/04 . made of organic materials
1/06
1/08 . made of polarising materials



Precedence references

G02B 1/00 Optical elements

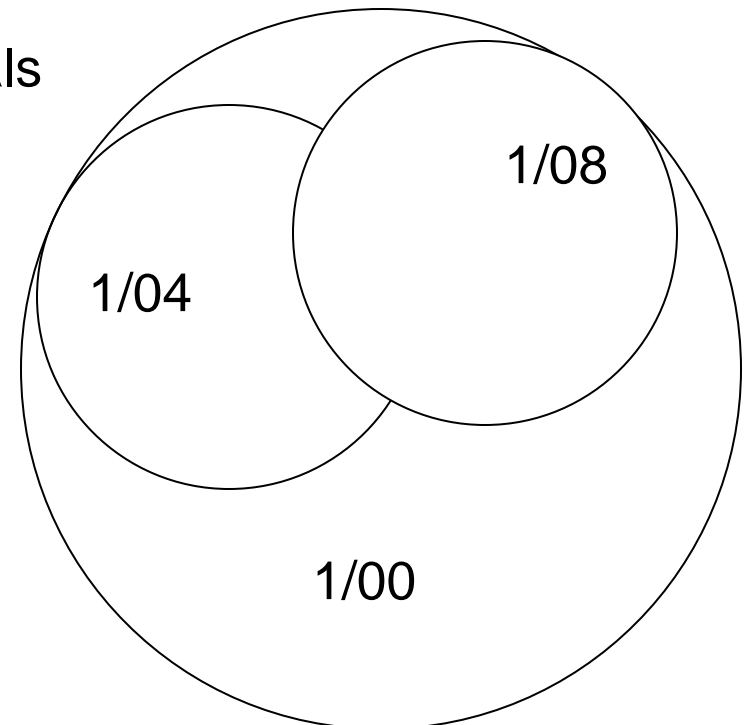
1/02

1/04 . made of organic materials (1/08 takes preference)

1/06

1/08 . made of polarising materials

Overlap eliminated by
reference





Elements of IPC scheme

- Classification places: Symbol + Title + Hierarchy
- References
- **Notes:**
 - > Separate statements after entries
 - > Apply only to the place where they are, including all hierarchically lower places
 - > Explain scope ([G01N 21/00](#))
 - > Define terminology ([B22F](#), [G02](#))
 - > Indicate classification rules (note 5 after [G01R](#))



Elements of IPC scheme

- Classification places: Symbol + Title + Hierarchy
- References
- Notes
- Guidance headings
- Subclass indices
- Class indices
- Subsections



Determine **effective scope** of groups



Elements of IPC scheme

- Classification places: symbol + title + hierarchy
- References
- Notes
- Guidance headings
- Subclass indices
- Class indices
- Subsections



Facilitate use of IPC



CPC and IPC

IPC: approximately 70000 codes

CPC: approximately 200000 code

- > Finer subdivision of IPC
- > Additional Y section which is not in IPC

Example:

CPC group F04D 14/042 is placed in IPC group [F04D 14/04](#)



CPC in IPC

IPC Home Page - Help

Version: 2016.01

Current symbol: F04D

Language: English

View mode: full

Show CPC/FI: checked

Guidance Headings: checked

Notes: checked

Search: Terms, Cross-references

Assistance: STATS, Text categorization (IPCCAT)

Scheme	RCL	Compilation	Catchwords	Guide to the IPC
	F04D 17/06	· Helico-centrifugal pumps [2006.01]		
	F04D 17/08	· Centrifugal pumps [2006.01]		
CPC	F04D 17/10	· · for compressing or evacuating [2006.01]		
CPC	F04D 17/12	· · · Multi-stage pumps [2006.01]		
	F04D 17/14	· · · · with means for changing the flow-path through the stages, e.g. series/parallel (surge control F04D 27/02) [2006.01]		
CPC	F04D 17/16	· · for displacing without appreciable compression [2006.01]		
	F04D 17/18	· · characterised by use of centrifugal force of liquids entrained in pumps [2006.01]		
CPC	F04D 19/00	Axial-flow pumps specially adapted for elastic fluids (F04D 21/00 takes precedence) [2006.01]		
CPC	F04D 19/02	· Multi-stage pumps [2006.01]		
CPC	F04D 19/04	· · specially adapted to the production of a high vacuum, e.g. molecular pumps [2006.01]		
	F04D 19/042	· · · Turbomolecular vacuum pumps		
	F04D 19/044	· · · Holweck-type pumps		
	F04D 19/046	· · · Combinations of two or more different types of pumps		
	F04D 19/048	· · · comprising magnetic bearings		
	F04D 21/00	Pumps specially adapted for elastic fluids involving supersonic speed of pumped fluids [2006.01]		
CPC	F04D 23/00	Other rotary non-positive-displacement pumps specially adapted for elastic fluids (pumping installations or systems F04D 25/00) [2006.01]		
	F04D 25/00	Pumping installations or systems specially adapted for elastic fluids (controlling F04D 27/00) [2006.01]		
CPC	F04D 25/02	· Units comprising pumps and their driving means (predominant aspects of the driving means, see the relevant classes for such means) [2006.01]		
CPC	F04D 25/04	· · the pump being fluid-driven [2006.01]		
CPC	F04D 25/06	· · the pump being electrically driven (F04D 25/08 takes precedence) [2006.01]		
CPC	F04D 25/08	· · the working fluid being air, e.g. for ventilation [2006.01]		
CPC	F04D 25/10	· · · the unit having provisions for automatically changing the direction of output air [2006.01]		
	F04D 25/12	· · · the unit being adapted for mounting in apertures [2006.01]		
	F04D 25/14	· · · · and having shutters, e.g. automatically closed when not in use [2006.01]		
CPC	F04D 25/16	· Combinations of two or more pumps [2006.01]		



Example: Turbomolecular pumps

- Search in Espacenet all EP docs with CPC:
 - Q1: F04D 19/042 **105 hits**

 - Keyword search EP docs in Espacenet for
 - Q2: “Turbomolecular pumps” **433 hits**
 - Q3: “Turbo molecular pumps” **65 hits**
 - Q2 OR Q3 **681 hits**

 - Q1 AND (Q2 OR Q3) **53 hits**
- 52 documents classified in F04D 19/042 have neither “turbomolecular pump” nor “turbo molecular pump” !**



Identifying IPC codes

- Search the Catchword index on IPC homepage:
- <http://wipo.int/ipcpub/>
- Search IPC scheme for keywords
- Search patent database for keywords and consider most frequent IPC classifications of relevant patent documents
- Use IPCCAT on IPC homepage (subclass and maingroup symbols only)
- "Bridge" on IPC homepage permits for each symbol in IPC scheme to initiate searches for patents in different databases
- Classifying applications filed by foreigners: research patent family members in Espacenet