



CAS STN<sup>next</sup><sup>®</sup> COFFEE LECTURE 

# Monitoring IPC/CPC classifications in CAS STN<sup>next</sup><sup>®</sup>

Paul Peters, ACS International / CAS

© 2024 American Chemical Society. All rights reserved.

 **FIZ Karlsruhe**  
Leibniz Institute for Information Infrastructure

**CAS**   
A division of the  
American Chemical Society

# Agenda

## Monitoring IPC/CPC on CAS STNext

The IPC-CPC classification system

In which STN database can these be searched?

Attributes of the IPC/CPC symbols

Overlap and difference between CAplus concepts and IPC/CPC

What happens when a new symbol is introduced?

How to look for new symbols in your subject area?

Future changes in the IPC/CPC system

# The IPC/CPC classification system

IPC – International Patent Classification system by WIPO

In force since 1968, administered by WIPO supported by a panel of subject matter specialists, mainly patent examiners

Since the larger 8<sup>th</sup> IPC reform symbols are not only assigned to aspects of invention, but can also be used for additional pointers

To overcome the inflexibility of the previous 5-year revision cadence, IPC updates happen now 3-4 times per year

Some patent offices started to assign IPC classification symbols using an AI algorithm of the claims text, which may lead to obscure results

Contains over 650 subclasses (e.g., A61K) and 78K subgroups (e.g., A61K9/02)

# The IPC/CPC classification system

CPC – Cooperative Patent Classification system by EPO/USPTO

After the EPO created an extension of the IPC, called ECLA and the USPTO used their own national classification, both offices saw the limitations of their systems and in 2010 joined forces into the CPC

CPC is now assigned by 38 offices, mainly EP, US, CA, CN, KR, RU, MX, TR, etc. Most notably not by JP, DE, FR.

CPC is assigned to patent families; 90% of German patents can be searched by CPC for instance; 30% of the JP; 40% of the CN

EPO/USPTO ensure that the CPC and the IPC are still very much aligned at a higher level of classification, but now has 260K symbols

AI generated CPC is used for patent routing to examiners at EPO and USPTO at a 90% accuracy level

# More depth in the CPC than the IPC

More precise results, fewer documents to review for relevance

		H01M 4/00	Electrodes [2006.01]	
			Note(s) [2] In classifying electrodes of hybrid cells, the individual half-cells of the hybrid cell are considered separately, e.g. an electrode in the primary half of a primary/fuel type hybrid cell is considered to be a primary-cell electrode covered by H01M 4/06.	
		H01M 4/02	• Electrodes composed of, or comprising, active material [2006.01]	
		H01M 4/04	•• Processes of manufacture in general [2006.01]	
		H01M 4/06	•• Electrodes for primary cells [2006.01]	
		<b>NOTE</b>		
		In classifying electrodes of hybrid cells, the individual half-cells of the hybrid cell are considered separately, e.g. an electrode in the primary half of a primary/fuel type hybrid cell is considered to be a primary-cell electrode covered by H01M 4/06.		
		- H01M 4/02	. Electrodes composed of, or comprising, active material	
		H01M 2004/021	. . {Physical characteristics, e.g. porosity, surface area}	
		H01M 2004/022	. . {Electrodes made of one single microscopic fiber}	
		H01M 2004/023	. . {Gel electrode}	
		H01M 2004/024	. . {Insertable electrodes}	
		H01M 2004/025	. . {with shapes other than plane or cylindrical}	
		- H01M 2004/026	. . {characterised by the polarity}	
		H01M 2004/027	. . . {Negative electrodes}	
		H01M 2004/028	. . . {Positive electrodes}	
		H01M 2004/029	. . . {Bipolar electrodes}	
		- H01M 4/04	. . Processes of manufacture in general	
		- H01M 4/0402	. . . {Methods of deposition of the material}	
		H01M 4/0404	. . . . {by coating on electrode collectors}	
		H01M 4/0407	. . . . {by coating on an electrolyte layer}	
				IPC
				CPC
				CAS division of the American Chemical Society

# Which databases contain IPC/CPC

Search STNGuide for IPC/sfield

The obvious patent databases: Inpadocdb, Inpafamdb

Full text patent databases: AUpatful, CANpatful, CNfull, DEfull, EPfull, FRfull, GBfull, INfull, JPfull, KRfull, PCTfull, RUfull, TWfull, USpatful, USpat2, USpatold

Further patent databases WPIndex (WPIDS, WPIX), Geneseq, IFIPAT, RDisclosure,

Technical databases: CAplus, CASREACT, Inspec, Tulsa,

# The hierarchy of the patent classifications

## Hierarchy for polysiloxanes in IPC and CPC

<b>C02F 3/00</b>	<b>Biological treatment of water, waste water, or sewage [2023.01]</b>
C02F 3/02	• Aerobic processes [2023.01]
C02F 3/04	•• using trickle filters [2023.01]
C02F 3/06	•• using submerged filters [2023.01]
C02F 3/08	•• using moving contact bodies [2023.01]
C02F 3/10	•• Packings; Fillings; Grids [2023.01]
C02F 3/12	•• Activated sludge processes [2023.01]
C02F 3/14	••• using surface aeration [2023.01]
C02F 3/16	•••• the aerator having a vertical axis [2023.01]
C02F 3/18	•••• the aerator having a horizontal axis [2023.01]
C02F 3/20	••• using diffusers [2023.01]
C02F 3/22	••• using circulation pipes [2023.01]
C02F 3/24	••• using free-fall aeration or spraying [2023.01]
C02F 3/26	••• using pure oxygen or oxygen-rich gas [2023.01]
C02F 3/28	• Anaerobic digestion processes [2023.01]
C02F 3/30	• Aerobic and anaerobic processes [2023.01]
C02F 3/32	• characterised by the animals or plants used, e.g. algae [2023.01]
C02F 3/34	• characterised by the microorganisms used [2023.01]

<b>3/00</b>	<b>Biological treatment of water, waste water, or sewage {(C02F 1/006 takes precedence)}</b>
2003/001	• {using granular carriers or supports for the microorganisms}
2003/003	•• {using activated carbon or the like}
3/005	• {Combined electrochemical biological processes (aeration by electrolytically produced oxygen bubbles C02F 3/202)}
3/006	• {Regulation methods for biological treatment}
2003/008	• {using anaerobic baffled reactors}
3/02	• Aerobic processes
3/025	•• {Biological purification using sources of oxygen other than air, oxygen or ozone}
3/04	•• using trickle filters
3/043	••• {Devices for distributing water over trickle filters}
3/046	••• {Soil filtration}
3/06	•• using submerged filters
3/08	•• using moving contact bodies
3/082	••• {Rotating biological contactors}
3/085	••• {Fluidized beds}
3/087	•••• {Floating beds with contact bodies having a lower density than water}
3/10	•• Packings; Fillings; Grids (packing elements in general B01J 19/30, B01J 19/32)
3/101	••• {Arranged-type packing, e.g. stacks, arrays}
3/102	••• {Permeable membranes}
3/103	••• {Textile-type packing}
3/104	••• {Granular carriers}
3/105	••• {Characterized by the chemical composition}

# Using the hierarchy of IPC/CPC on STNext

## Aerobic water treatment processes in WPIIndex

=> s c02f0003-02+nt/ipc

L1 64887 C02F0003-02+NT/IPC (13 TERMS)

=> s c02f0003-02+nt/cpc

L2 30703 C02F0003-02+NT/CPC (57 TERMS)

=> s l1 or l2

L3 73296 L1 OR L2



# Attributes of the IPC/CPC

Attributes for IPC/CPC can be found in IPC.KW and CPC.KW field

The patent office assigning the IPC symbol can be found searching the patent office two-letter code in this field: EP/IPC.KW

Here are further entries found in Inpadocdb:

E4	555386	ADDITIONAL/IPC.KW	E4	36162314	ADDITIONAL/CPC.KW
E5	112733210	ADVANCED/IPC.KW	E11	4512886	COMBINATION SET/CPC.KW
E24	240092	CORE/IPC.KW	E12	10260697	CONCORD/CPC.KW
E44	88894417	FIRST/IPC.KW	E21	68764331	FIRST/CPC.KW
E57	72541196	HUMAN/IPC.KW	E24	6023053	GENERATED/CPC.KW
E68	326265	INDEX/IPC.KW	E28	69805619	HUMAN/CPC.KW
E69	72385616	INITIAL/IPC.KW	E31	70166601	INVENTION/CPC.KW
E70	113510362	INVENTION/IPC.KW	E34	59920725	LATER/CPC.KW
E80	63901652	L/IPC.KW	E38	72180243	ORIGINAL/CPC.KW
E81	63901652	LATER/IPC.KW	E42	12039461	RECLASSIFICATION/CPC.KW
E87	46885845	MACHINE/IPC.KW			
E88	36713585	MAIN/IPC.KW			
E101	6827302	NON-INVENTION/IPC.KW			
E105	72384412	ORIGINAL/IPC.KW			
E112	47513053	RECLASSIFICATION/IPC.KW			
E119	17734942	SECONDARY/IPC.KW			
E125	1323805	SUBCLASS/IPC.KW			
E135	1375345	VARIOUS/IPC.KW			

# Linking the attribute to the symbol

## Using the (S) operator

FILE 'WPINDEX' ENTERED AT 07:30:29 ON 04 JUN 2024

L1 64887 S C02F0003-02+NT/IPC

L2 30703 S C02F0003-02+NT/CPC

L3 73296 S L1 OR L2

=> S L1(S)(FIRST OR INVENTION)/IPC.KW OR L2(S)(FIRST OR INVENTION)/CPC.KW

57409624 FIRST/IPC.KW

62918847 INVENTION/IPC.KW

63333 L1(S)(FIRST OR INVENTION)/IPC.KW

25873822 FIRST/CPC.KW

26806260 INVENTION/CPC.KW

24022 L2(S)(FIRST OR INVENTION)/CPC.KW

L4 66299 L1(S)(FIRST OR INVENTION)/IPC.KW OR L2(S)(FIRST OR INVENTION)/CPC.KW

# Display the tabular data for details

IPC.TAB and CPC.TAB in family-based files can be long

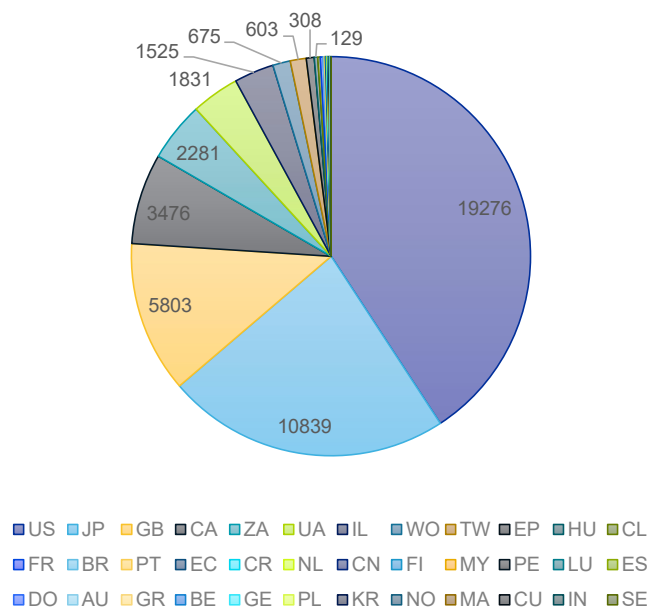
=> D IPC.TAB CPC.TAB 4000

```
L4 ANSWER 4000 OF 66299 WPINDEX COPYRIGHT 2024 CLARIVATE on STN
IPC CODE          VERSION  POS INV LEVEL  CC ASSIGNMENT DATE  STAT
-----
IPCI C02F0101-16   (200601) L  N  Advanced          0
IPCI C02F0003-10   (202301) L  I  Advanced          0
IPCI C02F0003-12   (202301) F  I  Advanced          0
IPCI C02F0003-28   (202301) L  I  Advanced          0
CPC CODE          VERSION  POS INV  CC ASSIGNMENT DATE  STAT
-----
C02F2101-16       (20130101) L  A          0
C02F0003-104     (20130101) L  I          0
C02F0003-1226    (20130101) L  I          0
C02F0003-1263    (20130101) F  I          0
C02F0003-28       (20130101) L  I          0
```

# Not all patents are published with IPC-CPC

In Inpadocdb there are 46K patents from 2024 without IPC

2024 patent documents without IPC



FILE 'INPADOCDB' ENTERED AT 12:32:18 ON 03 JUN 2024

```
L1 46752 S 2024/PY NOT (FIRST OR INITIAL)/IPC.KW
L2 ANALYZE L1 1- PC : 36 TERMS
L3 41278 S L1 NOT ORIGINAL/CPC.KW
```

FILE 'CAPLUS' ENTERED AT 12:57:59 ON 03 JUN 2024

```
L4 47 S 2024/PY.B AND P/DT NOT (FIRST OR INITIAL)/IPC.KW
L5 47 S L4 NOT CURRENT/CPC.KW
```

FILE 'WPINDEX' ENTERED AT 12:59:18 ON 03 JUN 2024

```
L6 59 S L4
L7 29 S L6 NOT CURRENT/CPC.KW
```

In Inpadocdb there are 41K patents from 2024 without either IPC or CPC

In CAplus this is just 47, resp 47

In WPIndex this is just 59, resp 29

# Comparing classification to keywords

## CAplus controlled Concepts versus IPC/CPC

The IPC/CPC symbol for toothpaste is A16Q11/00

Here below is the CAplus search comparing these:

```
L1      17761 S (TOOTHPASTES/CT OR DENTIFRICES/CT) AND P/DT
L2      26723 S A61Q0011/IPC
L3      18601 S A61Q0011/CPC
L4      9929 S L1 AND L2 AND L3
L5      3266 S L1 NOT L2,L3
L6      5089 S L2 NOT L1,L3
L7      905 S L3 NOT L1,L2
L8      31208 S L1 OR L2 OR L3
```

# Keep in mind that not all patents have CPC

L4 has a set of patents with IPC but not with any CPC

CPC symbol A23L11/33 is for removal of undesirable substances from vegetables or fruits using enzymes

The corresponding IPC symbol is A23L11/30 which about removing these substances but not specific to the method

```
FILE 'CAPLUS' ENTERED AT 17:51:31 ON 02 JUN 2024
```

```
L1          342 S A23L0011-33/CPC
L2         1838 S A23L0011-30/IPC
L3          423 S L2 NOT A23L/CPC
L4          294 S L2 NOT CURRENT/CPC.KW
L5           98 S L3 AND ENZYM?/BI,CLM
L6           58 S L4 AND ENZYM?/BI,CLM
L7          440 S L1 OR L5
```

# The IPC-CPC version is also searchable

Using the IPC.VER or the CPC.VER search field

=> e 20230000/ipc.ver

```
E1    1192885    20210101/IPC.VER
E2    1705487    20220101/IPC.VER
E3          0 --> 20230000/IPC.VER
E4    790518    20230101/IPC.VER
E5    99327     20240101/IPC.VER
**** END OF FIELD ****
```

=> e 20230000/cpc.ver

```
E6    688321    20220501/CPC.VER
E7    123556    20220801/CPC.VER
E8          0 --> 20230000/CPC.VER
E9    1417060    20230101/CPC.VER
E10   740118    20230201/CPC.VER
E11   172943    20230501/CPC.VER
E12   142712    20230801/CPC.VER
E13   783770    20240101/CPC.VER
E14   43988     20240501/CPC.VER
**** END OF FIELD ****
```

<https://www.wipo.int/classifications/ipc/en/ITsupport/Version20240101/>

<https://www.cooperativepatentclassification.org/CPCRevisions/NoticeOfChanges>

# Any new symbols in A61K?

## Linking the broad subgroup to the version

=> S A61K/CPC(S)CPC.VER>20230000

3736600 A61K/CPC  
3197600 CPC.VER>20230000  
(CPC.VER>20230000)

L8 70231 A61K/CPC(S)CPC.VER>20230000

=> ANA HIT CPC 1-1000

L9 ANALYZE L8 1-1000 CPC HIT : 151 TERMS

=> d

L9 ANALYZE L8 1-1000 CPC HIT : 151 TERMS

TERM #	# OCC	# DOC	% DOC	CPC
1	584	584	58.40	A61K0039-4611
2	477	477	47.70	A61K0039-4631
3	264	264	26.40	A61K2239-38
4	215	215	21.50	A61K2239-31
5	214	214	21.40	A61K0039-464412
6	171	171	17.10	A61K2239-48
7	140	140	14.00	A61K0039-4644
8	138	138	13.80	A61K0039-4613
9	130	130	13.00	A61K0039-4632
10	88	88	8.80	A61K0031-658



# More details on the CPC website

CPC NOTICE OF CHANGES 1552

DATE: MAY 1, 2024

PROJECT RP11670

## 1. CLASSIFICATION SCHEME CHANGES

### A. New, Modified or Deleted Group(s)

**SUBCLASS A61K 36/00 - Medicinal preparations of undetermined constitution containing material from algae, lichens, fungi or plants, or derivatives thereof, e.g. traditional herbal medicines {(antigens from pollen A61K 39/36)}**

<u>Type*</u>	<u>Symbol</u>	<u>Indent Level Number of dots (e.g. 0, 1, 2)</u>	<u>Title</u> <u>“CPC only” text should normally be enclosed in {curly brackets}**</u>	<u>Transferred to*</u>
C	A61K36/07	2	Basidiomycota, e.g. Cryptococcus	A61K36/07, A61K36/071, A61K36/078

# New symbols were introduced

=> e a61k0036-348+all/cpc

E19 11142 BT3 A61K0036-00/CPC  
Medicinal preparations of undetermined constitution  
containing material from algae, lichens, fungi or  
plants, or derivatives thereof, e.g. traditional herbal  
medicines CPC-specific-text: reference:

E20 1525 BT2 A61K0036-18/CPC  
Magnoliophyta (angiosperms)(2013-01-01)

E21 76959 BT1 A61K0036-185/CPC  
Magnoliopsida (dicotyledons)(2013-01-01)

E22 0 --> A61K0036-348/CPC  
CPC-specific-text: Cannabaceae(2024-05-01)

E23 14 NT1 A61K0036-3482/CPC  
CPC-specific-text: Cannabis(2024-05-01)

E24 0 NT1 A61K0036-3486/CPC  
CPC-specific-text: Humulus(2024-05-01)

\*\*\*\*\* END \*\*\*\*\*

# Are there still patents on old symbols?

=> s a61k0036-348+nt/cpc

L16 14 A61K0036-348+NT/CPC (3 TERMS)

=> s e20-e21 and cannab?

1525 A61K0036-18/CPC

76959 A61K0036-185/CPC

22650 CANNAB?

L17 5462 (A61K0036-18/CPC OR A61K0036-185/CPC) AND CANNAB?

=> s l17 and ed>20240500

730115 ED>20240500

(ED>20240500)

L18 82 L17 AND ED>20240500

# Display of CPC details

=> d ti cpc.tab

L18 ANSWER 1 OF 82 INPADOCDB COPYRIGHT 2024 EPO/FIZ KA on STN  
TIES TECNOLOGIA DE ENCAPSULACION DE **CANNABINOIDES**.

CPC CODE	VERSION	POS	INV	CC	ASSIGNMENT	DATE	STAT
<b>A61K0036-185</b>	<b>(20130101)</b>	<b>L</b>	<b>I</b>	<b>AU</b>	<b>Human</b>	<b>20211118</b>	<b>0</b>
A61K0031-575	(20130101)	L	I	EP		20220530	0
<b>A61K0036-185</b>	<b>(20130101)</b>	<b>L</b>	<b>I</b>	<b>EP</b>	<b>Human</b>	<b>20220530</b>	<b>0</b>
A61K0047-36	(20130101)	L	I	EP	Human	20220530	0
A61K0031-352	(20130101)	L	I	EP	Human	20220530	0
A61K0031-05	(20130101)	F	I	EP	Human	20220530	0
A61K0009-5036	(20130101)	L	I	EP	Human	20220920	0
A61K0009-5089	(20130101)	L	I	EP	Human	20220920	0
A61K0009-0053	(20130101)	L	I	EP	Human	20220920	0
A61K0031-05	(20130101)	F	I	IL	Human	20230605	0
A61K0031-352	(20130101)	F	I	AU	Human	20211130	0
A61K0009-0053	(20130101)	L	I	IL	Human	20230605	0
<b>A61K0036-185</b>	<b>(20130101)</b>	<b>L</b>	<b>I</b>	<b>IL</b>	<b>Human</b>	<b>20230605</b>	<b>0</b>
A61K0031-352	(20130101)	L	I	IL	Human	20230605	0

It is useful to also search older classes

# Even very old revised symbols have data

C12N5/06 was transferred to C12N5/07+ in Jan 2010!

```
=> file inpafamdb caplus wpindex
```

```
FILES 'INPAFAMDB, CAPLUS, WPINDEX' ENTERED AT 07:26:13 ON 04 JUN 2024  
ALL COPYRIGHTS AND RESTRICTIONS APPLY.
```

```
3 FILES IN THE FILE LIST
```

```
=> s c12n0005-06/ipc not c12n0005-07+nt/ipc
```

```
L17      9774 FILE INPAFAMDB  
L18     12837 FILE CAPLUS  
L19     13583 FILE WPINDEX
```

```
TOTAL FOR ALL FILES
```

```
L20     36194 C12N0005-06/IPC NOT C12N0005-07+NT/IPC
```

# Summary

## Using IPC-CPC in patent monitoring

IPC-CPC classifications are useful as additional subject terms, maybe as synonyms to keywords

Review the definition of an IPC-CPC symbol and see if more detailed symbols are available

Truncation or the thesaurus function +NT may be useful to include narrower symbols

Attributes to the IPC-CPC can be useful in some cases

Look for modifications to the IPC-CPC that may impact your alerts

Even after new symbols have been introduced it takes a while for the backfile to be reclassified and examiners adopt new symbols

Between problems  
and progress  
are connections  
that matter



**Paul Peters**

Director, Customer Success Specialists  
ppeters@acs-i.org

## CONTACT

**CAS**  
help@cas.org  
cas.org

**FIZ Karlsruhe**  
EMEAhelp@cas.org