Cooperative Patent Classification (CPC)

Combination Sets

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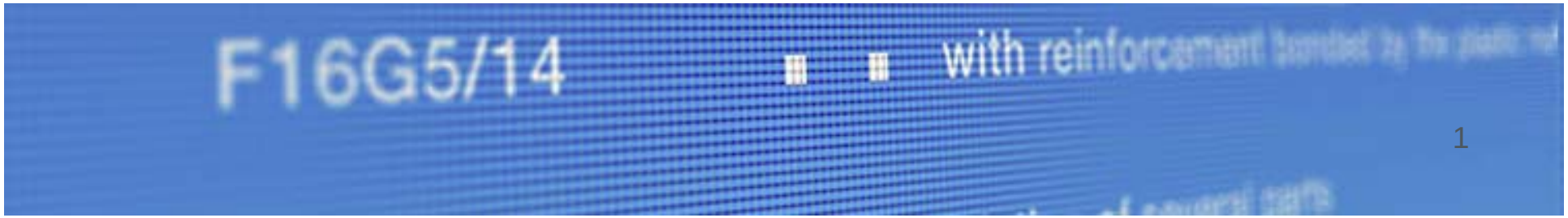

What are Combination Sets?

Groups of "Linked symbols" – each C-set identifies the **presence of technical features taken "in combination"** or **"together"**

- All classification symbols used must be **valid symbols**
- Relate to a **special classification / search technique** used in **a limited number of technical fields**
- Use of Combination Sets in a field should be **clearly identified** in the Notes in the Scheme and/or from relevant Definitions
- **Available in Espacenet / DocDB**, **searchable in EPODOC**, making use of the dedicated field **/CLC**

Major areas:

- **Preparation of organic compounds (C07C)**
  - single symbols: compound 1, compound 2, process 1, process 2
  - by using a **set of linked symbols**, one can indicate that compound 1 is made by process 1, compound 2 is made by process 2 and so on.
- **Compositions / Mixtures**
  - every constituent of the mixture is part of a set of linked information
  - a constituent of the mixture also receives a separate classification symbol e.g. CCI when it is special or of importance or described in detail.
    - **Pesticides (A01N)**
    - **Polymer mixtures** (**C08L**)
      - the set indicates the major polymeric component and minor amounts of polymeric and non-polymeric constituents
    - **Cements (C04B**)

Acyclic and carbocyclic compounds (C07C)

Combination sets in this area consist of a **process group** (base symbol), followed by and linked to the **group of the product**.

Combination Sets — example 1

Preparation of **lactic acid by oxidation**

C07C 51/16 **C07C 59/08**

C07C 51/16, C07C 59/08

/CLC C07C 51/16 L C07C59/08

/CLC C07C 51/16 S C07C59/08

Combination Sets — example 2

Preparation of **hydroxyethyl acrylate**
by **reacting acrylic acid with** | **ethylene oxide**

C07C67/02 , **C07C69/54**

/CLC **C07C67/02** L **C07C69/54**

/CLC **C07C67/02** S **C07C69/54**

Combination Sets Record — example 3

- **GB2111984**

  1. A method for producing **phloroglucin** which comprises **decomposition of 1,3,5- triisopropyl benzene tri-hydro peroxide (hereinafter referred to as THPO), in the presence of an acid catalyst** [...].

- CCI - **C07C37/08**
  CLC - **C07C37/08**, **C07C39/10**, INV

- **Search in EPODOC:**
- /CCI C07C37/08 -> 445 families
  /CLC **C07C37/08** s C07C**39/10** -> 4 families

Advantage of combination sets in C07C

- Indication of **process products does not "flood" groups meant for novel compounds** (different database fields)
  - increased search efficiency for novel compounds

- **Retain link between a process and its product**
  - **increased precision** when a document contains two or more different processes, leading to two or more different products
  - **no extra costs** (process and product have to be identified anyway)

Display in EPODOC

[EPODOC: SS 1] gb2111984/pn

Results in EPODOC **1**

[SS 2] ..li

1/1	© EPODOC / EPO
PN	- **GB2111984** A 19830713
PNFP	- **GB2111984** B 19851002
PR	- JP19810193939 19811201
AP	- **GB19820032916** 19821118
DT	- *
CCI	- **C07C37/08**
CLC	- **C07C37/08**, **C07C39/10** , INV
EC	- **C07C37/08**
ECL	- C07C37/08, C07C39/10
PA	- (A B) SUMITOMO CHEMICAL CO
TI	- (A B) METHOD FOR PRODUCING PHLOROGLUCIN

Mapping to EC/ECL to be discontinued from 1 Nov 2014 !!!

Display in Espacenet

Bibliographic data: GB2111984 (A) — 1983-07-13

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METHOD FOR PRODUCING PHLOROGLUCIN

Page bookmark	GB2111984 (A) - METHOD FOR PRODUCING PHLOROGLUCIN
Inventor(s):	CHIYODA TSUTOMU; NAKAMURA MAKOTO; HASEGAWA SHINICHI +
Applicant(s):	SUMITOMO CHEMICAL CO +
Classification:	**- international:** ***B01J27/00; B01J27/04; B01J27/06; C07C27/00; C07C37/08; C07C37/50; C07C39/10; C07C67/00;*** (IPC1-7): C07C39/10
	- cooperative: **C07C37/08** → more
Application number:	GB 19820032916 19821118
Priority number(s):	JP19810193939 19811201
Also published as:	→ GB2111984 (B) US4463199 (A) NL8204640 (A) JPS5896034 (A) → JPH0380785 (B2)

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	- cooperative: **default** **C07C37/08**
	C-sets **C07C37/08**, **C07C39/10** → less
Application number:	GB 19820032916 19821118
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Combination Sets in Pesticides – Example 4

PN - US2010173121 A1 20100708
TI - Method and Treatment Composition for Imparting Durable Antimicrobial Properties to Carpet
AB - A treatment compositions for imparting durable antimicrobial properties to a carpet comprising a fluoropolymer and an antimicrobial compound selected from zinc pyrithione and/or a silver-containing antimicrobial compound and a foamer.

CCI - A01N25/30; D06M11/79; D06M11/83; D06M13/47; D06M15/277; D06M15/295; D06M15/33; D06M15/3335; D06M15/576; D06M15/657; D06M15/71; D06M16/00; D06M23/04
CLC - A01N25/30, A01N25/10, A01N43/40, A01N59/16, INV
- A01N25/30, A01N2300/00, INV

A01N2300/00 indicates that this is a mixture

A01N2300/00	Combinations or mixtures of active ingredients covered by classes A01N27/00to A01N65/48 with other active or formulation relevant ingredients, e.g. specific carrier materials or surfactants, covered by classes A01N25/00to A01N65/48

Combination Sets in Polymer Chemistry

- **C08L:** Compositions of Macromolecular Compounds
- **C08K:** Additives as Compounding Ingredients
- **C08F/C08G:** Polymers formed from C=C-bonds

Compositions of Macromolecular Compounds (C08L)

A combination set for a polymeric blend uses a **base symbol** for the **main polymeric component**, and **additional symbols** for the **other polymeric components and additives**.

Example 5:

A composition of 90 wt% polypropylene and 5 wt% polyamide and 5 wt% carbon black:

CLC - C08L23/10, C08L77/00, C08K3/04

In addition, further groups may be used in combination with the C-sets in order to characterize **features of the composition**. Such groups are classified and searched in the field **/CCA** outside the C-set.

C08L2205/00 **Polymer mixtures characterised by other features**

C08L2205/02	• containing two or more polymers of the same C08L-group
C08L2205/03	• containing three or more polymers in a blend
C08L2205/04	• containing interpenetrating networks
C08L2205/08	• containing additives to improve the compatibility between two polymers
C08L2205/12	• containing additives being liquid crystalline or anisotropic in the melt
C08L2205/14	• containing polymeric additives characterised by shape
C08L2205/24	• Crystallisation aids

Combination Sets in Cements (C04B)

PN - US2008178771 A1 20080731

TI - Fiber reinforced cement composition and products and manufacturing process

AB - A fiber reinforced cement composition comprising a hydraulic inorganic material (Portland cement), a siliceous material (pearl stone and/or fly ash), a woody reinforcement (used paper) and a finely dividing fiber reinforced cement product which is produced by said raw materials and cured in an autoclave. It additionally comprises expanded perlite or mica and a water-soluble resin

CCI - C04B28/04

CLC - C04B28/04, C04B14/185, C04B14/22, C04B18/08, C04B18/241, C04B40/024, C04B2103/0053, INV

- C04B28/04, C04B14/20, C04B14/22, C04B18/08, C04B18/241, C04B40/024, C04B2103/0053, INV

C-sets in cements indicate:

- individual components of a mixture in combination
- alternative compositions
- the role played by a specific component
- additional features / properties / uses

C-set structure

- The first symbol in a C-set is called the **base symbol**
- Base symbol can be **Invention** (CCI) or **Additional** (CCA) information
- **Base symbol** determines whether the **combination set as a whole** is to be considered as "**invention** information set" or as "**additional** information set“
- Base symbol determines the "**authorisation**" rights for the allocation/deletion
- Every combination set is a separate paragraph indicated by a –
- Up to 99 symbols are allowed in each paragraph
- Up to 99 paragraphs per document

Combination sets in EPOQUE

- **/CLC** CPC Linked symbols, Confirmed
- **/CLU** CPC Linked symbols, Unreviewed
- **/CLQ** CPC Linked symbols, Raise-Hand by EPO

- **/CL** /CLC /CLQ /CLU

Database indexing – short forms

/CLC C04B41/52 L C04B41/4523 L C04B41/4884

is equivalent to

/CLC C04B41/52 **L "/4523" L "/4884"**
/CLC C04B41/52 **L 41/4523 L 41/4884**
/CLC C04B41/52 **L B41/4523 L B41/4884**

- While searching, it is **allowed to omit the part of further symbols which is also found in the first or "base" symbol**
  - main group (everything before the slash), e.g. C04B41
  - sub-class (first four characters), e.g. C04B
  - class (first three characters), e.g. C04

/LOW

Only with **long form**!

Long form: /CL C07C67/08 L C07C69/54

Short form: /CL C07C67/08 L 69/54

/LOW qualifier includes subgroups

/CL C07C67/08 L **C07C69/52/LOW** 

/CL **C07C29/15/LOW** s 31/04 

~~/CL C07C31/15 s ***31/02/LOW***~~ **No! Full symbol needed!**

(here, same as C07C31/15 s 31/02)

Searching in a C-set

- available co-occurrence operators: **L, P, S** gives the possibility to search the linked symbols within a set

- Using the **%** after a symbol means that this symbol must be the **base symbol**

- **Example**

  /CLC C04B28/14 s C04B14/301 s C04B14/42

  /CLC C04B16/08% s C04B20/1066

Occurrence and position of linked symbols

- Contrary to "single" symbols, it is allowed to have duplicate symbols in a set of linked symbols
- **Multiple (>1) occurrence** of symbols is marked by
  %n (with n>1)
- Only combination sets with the same set of symbols in the same order are considered to be full duplicates, a change of order makes it a different combination set
- **Position of a symbol** in a set can be searched by
  .m (with m=position)
- Each combination set starts with a hyphen **'-'** in the CLC field of EPODOC

Example

CLC - C04B28/32, C04B14/02, C04B22/0013, C04B22/068, C04B22/085, C04B22/085%2, C04B22/12, C04B22/12%2, C04B22/14, C04B22/14%2, C04B22/14%3, C04B22/14%4, C04B22/143

- (First) base symbol is indexed C04B28/32%
- **Searching Occurrence**
  - **/CLC C04B22/14%3**
    - searches 3 occurrences of **C04B22/14**
- **Searching Position**
  - **/CLC C04B22/0013.3**
    - searches C04B22/0013 at position 3

Conclusion

Combination Sets:

- are a **powerful classification and search technique**
- **reduce "noise"** in search
- are **easy to apply** in most areas
- **do not require more time** to apply than single symbols, except in special cases (e.g. cements)

Thank you for your attention!

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