

## CA<sup>SM</sup>/HCA/ZCA (Chemical Abstracts)

<b>Subject Coverage</b>	<ul style="list-style-type: none"> <li>Analytical chemistry</li> <li>Applied chemistry</li> <li>Biochemistry</li> </ul>	<ul style="list-style-type: none"> <li>Chemical engineering</li> <li>Macromolecular chemistry</li> <li>Organic chemistry</li> </ul>
<b>File Type</b>	Bibliographic	
<b>Features</b>	<p>Thesauri      Classification Code (/CC), Company Name (/CO), Controlled Term (/CT), Cooperative Patent Classification (CPC), European Patent Classification (/ECLA), F-Term (/FTERM), ICO (in-computer-only) Classification (/ICO), International Patent Classifications (/IPC), National Patent Classifications Current (/NCL), National Patent Classifications Issue (/INCL), and Role (/RL)</p> <p><a href="#">Alerts (SDIs)</a>      Biweekly</p> <p><a href="#">CAS Registry Number® Identifiers</a>      <input checked="" type="checkbox"/>      Page Images      <input checked="" type="checkbox"/>      STN® AnaVist™      <input type="checkbox"/></p> <p><a href="#">Keep &amp; Share</a>      <input checked="" type="checkbox"/>      <a href="#">SLART</a>      <input checked="" type="checkbox"/>      STN Easy®      <input type="checkbox"/></p> <p><a href="#">Learning Database</a>      <input checked="" type="checkbox"/>      Structures      <input checked="" type="checkbox"/></p>	
<b>Record Content</b>	<ul style="list-style-type: none"> <li>Bibliographic information, indexing, and available abstracts</li> <li>Cited references for journals, conference proceedings, and basic patents from the U.S., EPO, WIPO, and German patent offices added to CAS databases since 1997</li> <li>Patent examiner citations from British and French patents (2003-present), Canadian patents (2005-present), Japanese patents (2011-present), as well as nearly 300,000 patent records from 1982-2008</li> <li>Citing references</li> <li>Legal status information for U.S. patents since 1980</li> <li>Patent classifications: IPC, CPC, ECLA, ICO, NCL and FTERM</li> <li>Claims (from US, WIPO and Chinese patents, 1999 – present)</li> </ul>	
<b>File Size</b>	More than 43.3 million records (12/2020)	
<b>Coverage</b>	1907-present plus over 180,000 pre-1907 records	
<b>Updates</b>	Weekly updates (more than 25,000 records)	
<b>Language</b>	English	
<b>Database Producer</b>	<p>Chemical Abstracts Service          2540 Olentangy River Road          P.O. Box 3012          Columbus, Ohio 43210-0012 USA          Phone: 800-753-4227 (North America)          Phone: 614-447-3700 (worldwide)          Fax: 614-447-3751          Email: <a href="mailto:help@cas.org">help@cas.org</a>          Copyright Holder</p>	

**Sources**

- Journals: Thousands of journals are monitored. New indexed records are added weekly.
  - Patents
  - Conference Proceedings
  - Electronic-only Journals
  - Books
  - Dissertations
  - Reviews
  - Technical Disclosures
  - Web Pre-prints
  - Meeting Abstracts
- 

**User Aids**

- Support and training materials are available on the web: [www.cas.org](http://www.cas.org)
  - Online Helps (HELP DIRECTORY lists all help messages available)
  - STNGUIDE
- 

**Clusters**

None

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**Related Databases**

- CPlus
  - LCA
- 

**Pricing**

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## Search and Display Field Codes

Fields that allow left truncation are indicated by an asterisk (\*). The minimum stem length for left truncation is three (3) characters.

### General Search Fields

Search Field Name	Search Code	Search Examples	Display Codes
Basic Index * (contains single words from title (TI), supplementary term (ST), index term (IT), and abstract (AB) fields, as well as CAS Registry Numbers)	None (or /BI or /IA)	S 50-21-5 S TRANSGENIC COTTON S ?FLUOROCARBON? S (WATER(S)OIL)/BI	AB, IT, ST, TI
Basic Index plus Claims *	/BI,BIEX or /BI,CLM	S ALLOPURINOL/BI,BIEX S TRANSGENIC/BI,CLM(W)COTTON/BI,CLM	BIB CLM ALL CLM
Abstract *	/AB	S (WATER(1W)OIL)/AB S LD50/AB S HIGH TEMP?/AB S (HIV(S)TREAT?)/AB	AB
Accession Number	/AN	S 65:109061/AN	AN
Author (inventor)	/AU	S LEHNINGER A?/AU S (DUCHEYNE P?(S)EDITOR#)/AU S ANON/AU	AU, IN
CA Section Cross Reference (1,2) (number and title)	/SX	S 1/SX S ANALYTICAL/SX S RADIATION CHEMISTRY/SX	CC
Classification Code (2,3) (contains CA section-subsection number, if available, section title, and section group codes)	/CC (or /SC)	S 1/CC S 80-6/CC S TOXICOLOGY/CC S RADIATION CHEMISTRY/CC S L1 AND BIO/CC	CC
Classification Code Section Descriptor (2)	/CCN (or /SCN)	S TOXICOLOGY/SCN S RADIATION CHEMISTRY/CCN	SCN, CCN
Company Name (3)	/CO	E DOW CHEMICAL/CO	CO, CS, PA
Controlled Term (3,4)	/CT	S ANTITUMOR AGENTS/CT	CT, IT
Controlled Word (4)	/CW	S OPTIC?/CW	CT, IT
Corporate Source (2) (organization name, patent assignee)	/CS	S DOW/CS S DOW CHEM MIDLAND/CS S "DOW CORNING"?/CS	CS, PA
Country of Author	/CYA	S USA/CYA	CS, CYA, PA
Digital Object Identifier	/DOI (or /FTDOI)	S 10.1101?/DOI	DOI, FTDOI
Document Type (code and text)	/DT (or /TC)	S P/DT S PATENT/DT S REVIEW/DT	DT
Entry Date (5)	/ED	S ED>20010511 S ED>MAY 11, 2001	ED
Field Availability	/FA	S L1 AND ABS/FA	Not displayed
File Segment	/FS	S BIO/FS AND L2	FS
Index Term * (6)	/IT	S 75-28-5(2W)CRACKING OF/IT S DETN OF/IT	IT
International Standard (Document) Number (contains CODEN, ISBN, and ISSN) (7)	/ISN	S JOCRAM/ISN S 0021-9673/ISN	ISN, SO
Issue Number of Publication (5,8)	/IS	S 1-3/IS AND 32/VL	SO
Journal Title (11)	/JT	S J CHROMATOGR/JT S COMPT REND?/JT	JT, SO
Journal Title Keyword	/JTW	S NANO/JTW	SO

## General Search Fields (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
Language (code and text) <b>(9)</b>	/LA	S L1 AND EN/LA S L1 AND ENGLISH/LA S L1 NOT DE/LA	LA
Original Reference Number <b>(10)</b>	/OREF	S 63:5967A/OREF	OREF
Other Source <b>(1)</b>	/OS	S L1 AND MARPAT/OS	OS
Publication Date <b>(5)</b>	/PD	S PD>20010400 S JUNE 1992-SEPT 1993/PD	PI, SO
Publication Year <b>(5)</b>	/PY	S 1947-1949/PY	PI, PY, SO
Publisher <b>(2)</b>	/PB	S ACADEMIC/PB	PB
Publisher Item Identifier <b>(1)</b>	/PUI	S "S 0014-5793(96)01227-6"/PUI	PUI
CAS Registry Number (CAS RN) <b>(12)</b>	/RN	S 50-78-2/RN S 50-78-2D/RN S 50-78-2DP/RN S 50-78-2P/RN	RN
Role <b>(1,3)</b>	/RL	S 99685-96-8(L)SPN/RL S 99685-96-8/SPN S FULLERENES(L)SPN/RL S FULLERENES/SPN	IT, RL
Source (contains publication title, date, publisher, conference title, meeting date, volume, issue, pagination, CODEN, ISBN, ISSN, and URL) <b>(7)</b>	/SO	S INORG CHEM/SO S JOCRAM/SO S 0021-9673/SO S AM CERAM SOC/SO S 1992/SO	SO
Supplementary Term * <b>(1)</b>	/ST	S LIVER METAB?/ST	ST
Title *	/TI	S LIVER/TI S SPIN SPIN/TI S (METABOLISME(S)VEGETAUX)/TI	TI
Uniform Resource Locator <b>(1)</b>	/URL	S "HTTP://WWW.BIOSCIENCE.ORG/BIOSCIENCE/1996/V1/D/CHINTALL/HTMLS/324-339.HTM"/URL	SO, URL
Update Date <b>(5)</b>	/UP	S L1 AND UP>20010400 S UP>APRIL 1, 2001	Not displayed
Update Date, Addition of Registered Substance <b>(5)</b>	/UPIT	S L2 AND UPIT>20080200	Not displayed
Volume and Issue of CA	/VI	S 41-17/VI	Not displayed
Volume Number of Publication <b>(5)</b>	/VL	S 105-106/VL AND SCIENCE/JT	VL, SO

- (1)** Content of this field is available for records from 1967 to the present except for the PREP (Preparation) role that has been assigned back to 1907. ISBNs are included only for records added since December 17, 2001.
- (2)** Search with implied (S) proximity is available in this field.
- (3)** A thesaurus is available in this field.
- (4)** Pre-1967 subject index headings are searchable in the /CT and /CW field only if they matched the index headings in the CA Lexicon database. Unmatched pre-1967 subject headings are searchable as single words in the /IT and /BI fields.
- (5)** Numeric search field that may be searched with numeric operators or ranges.
- (6)** Stopwords are not removed from this field.
- (7)** ISBNs are included only for records added since December 17, 2001.
- (8)** Content of this field is available only for records from 1963 to the present.
- (9)** Language is available only for records from 1967 to the present and for some journals prior to 1967.
- (10)** OREF contains the CA volume number and page location information for abstracts published 1907-1966.
- (11)** Full Journal Titles are available for most records from 1907 to the present.
- (12)** Search for a non-specific derivative of a substance, a non-specific derivative's preparation, or a preparation by placing a "D", "DP", or "P" following the CAS RN. A non-specific derivative (D) is a compound that is not fully described in the source document. A "P" designation following a CAS RN means that the source document describes preparation of the specific compound. A "DP" denotes the preparation of the non-specific derivative.

## Patent Search Fields

Search Field Name	Search Code	Search Examples	Display Codes
Claim * (15) Cooperative Patent Classification (3,13) Cooperative Patent Classification, Action Date Cooperative Patent Classification, Combination Sets Cooperative Patent Classification, Keywords (13) Cooperative Patent Classification, Version Cooperative Patent Initial Classification Country Number Count (1) Designated States (2) Designated States, Basic (2) European Classifications (3)	/CLM or /BIEX /CPC /CPC.ACD /CPC.CS /CPC.KW /CPC.VER /CPCI /CYC /DS /DS.B /ECLA (or /EPC or /EPCLA)	S COBALT (L) SALT#/CLM S C12N0009/CPC S 20121113/CPC.ACD S (H01L2224-48091 (S) H01L2924-00014)/CPC.CS S C12N0009/CPC (S) I/CPC.KW S 20130101/CPC.VER S A61K0006-0014/CPCI S L1 AND 4-5/CYC S FR/DS;S R DE/DS S DE/DS.B S C01B003/ECLA S C01B003/00D2/ECLA	CLM CPC CPC.TAB CPC.TAB CPC.TAB CPC.TAB CPCI CY.CNT DS, PI DS, PI CLASS, ECLA, EPC, EPCLA
European Classification Keywords	/ECLA.KW (or /EPC.KW or /EPCLA.KW)	S A1F1/ECLA.KW	CLASS, ECLA, EPC, EPCLA
Exemplary Claim * (15) Extended Basic Index Family Accession Number Family Accession Number Count (1)	/ECLM /BIEX or /CLM /FAN /FAN.CNT (or FAM.CNT)	S COBALT (L) MIXTURE/ECLM S ALLOPURINOL/BIEX S 1998:98369/FAN S L1 AND FAN.CNT>1	ECLM CLM FAN FAN
F-Terms (Patent Classifications from the Japanese Patent Office) (4)	/FTERM (or /FTCLA or /JPCLA)	S 4C002/BB03/FTERM S 4C002/FTERM	CLASS, FTERM, FTCLA, JPCLA
ICO (in-computer-only) Classification (3)	/ICO	S K61B0010:00L10/ICO	ECLA, EPC, EPCLA, ICO
International Patent Classification, Action Date (1)	/IPC.ACD	S 20050101/IPC.ACD	IPC.TAB
International Patent Classification, Additional or Supplementary (2,6)	/ICA	S B01J/ICA S B01J027/ICA S CYANOGEN/ICA	ICA
International Patent Classification, All (5)	/IPC	S A61K/IPC S A61K0031-473/IPC S G01N0001-28/IPC.B	IPC
International Patent Classification, Basic Patent	/IPC.B		IPC.B
International Patent Classification, Index or Complementary (2,6)	/ICI	S A61K/ICI S A61K031/ICI S AMMONIA/ICI	ICI
International Patent Classification, Keywords	/IPC.KW	S G01N000128/IPC(S)BASIC/IPC.KW	IPC.TAB
International Patent Classification, Main (2,6)	/ICM	S A01N/ICM S A01N025/ICM S AMMONIA/ICM	IC, ICM
International Patent Classification, Main and Secondary (6)	/IC	S C07C/IC S C07C015/IC S C07C015-04/IC S CYANOGEN/IC	IC
International Patent Classification, Main Group, Range Searchable (1,2,6)	/MGR	S 10-20/MGR(S)C07C/IC	IC
International Patent Classification, Secondary (2,6)	/ICS	S C02F/ICS S C02F001/ICS S AMMONIA/ICS	IC, ICS
International Patent Classification, Subgroup, Range Searchable (1,2,6)	/SGR	S SGR=>30000(S)C01B031/IC	IC
International Patent Classification, Version	/IPC.VER	S 6/IPC.VER	IPC.TAB

## Patent Search Fields (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
International Patent Initial Classification	/IPCI	S H01L0023-29/IPCI	IPCI
International Patent Reclassification	/IPCR	S C08L0061-00/IPCR	IPCR
Inventor	/IN	S PATTON JERRY R/IN	IN
National Patent Classification, Current (7)	/NCL (or /USNCL or /USCLA)	S 106035000/NCL S 106/035.000/NCL S 433/227-433/229/NCL S ZEOLITES/NCL	NCL, CLASS
National Patent Classification, Issue (8)	/INCL	S 433228000/INCL S 433/227-433/229/INCL	INCL, CLASS
National Patent Classification, Issue, Range Searchable (1,8)	/NCLR	S 106020000-106040000/NCLR	NCL, CLASS
Number of Claims (15)	/CLMN	S CLMN>20	CLMN
Patent Application Country	/AC	S DE/AC	AI, PI
Patent Application Country, Basic	/AC.B	S DE/AC.B	AI, PI
Patent Application Date (1,9)	/AD	S AD>19920100 S AD>JANUARY 20, 1993	AI, PI
Patent Application Date, Basic (1,4)	/AD.B	S 19970220/AD.B	AI, PI
Patent Application Number (2,10,14)	/AP	S EP83-304630/AP S 83EP-0304630/AP S JP87-10001/AP S 87JP-0010001/AP S US2013-13261341/AP S US2013-261341/AP	AI, PI
Patent Application Number, Basic (2,10,14)	/AP.B	S JP87-10001/AP.B	AI, PI
Patent Application Number Count	/AP.CNT	S 4/AP.CNT	Not displayed
Patent Application Year (1,9)	/AY	S 1990-1992/AY	AI, PI
Patent Application Year, Basic (1,9)	/AY.B	S AY.B>1997	AI, PI
Patent Assignee (11)	/PA	S PFIZER/PA S PFIZER CORP/PA S BADISCHE ANILIN/PA OR BASF/PA	PA
Patent Country	/PC	S WO/PC	PI
Patent Country, Basic	/PC.B	S JP/PC.B	PI
Patent Kind Code (2)	/PK	S DEA1/PK	PI
Patent Kind Code, Basic (2)	/PK.B	S DEA1/PK.B	PI
Patent Number (10)	/PN	S EP536930/PN S EP-536930/PN S WO8402426/PN S JP04000104/PN S JP62000031/PN S IP6243D/PN	PI
Patent Number, Basic (10)	/PN.B	S JP60008341/PN.B	PI
Patent Number Count (1)	/PNC (or /PN.CNT)	S 3/PNC	PN.CNT
Patent Number/Kind Code	/PNK	S US20050136407/PNK	PNK
Patent Number/Kind Code of the Basic Patent	/PNK.B	S US20050136407/PNK.B	PNK.B
Priority Application Country	/PRC	S US/PRC	PRAI
Priority Application Country, Basic	/PRC.B	S US/PRC.B	PRAI
Priority Application Date (1,9)	/PRD	S PRD>19910600 S June 20 1991/PRD	PRAI
Priority Application Date, Basic (1,9)	/PRD.B	S PRD.B>19940100	PRAI
Priority Application Number (2,10,12,14)	/PRN	S US91-635890/PRN S 91US-0635890/PRN S IP2002-6243D/PRN S US2013-61686038/PRN S US2013-686038P/PRN	PRAI
Priority Application Number, Basic (2,10,12,14)	/PRN.B	S US91-721765/PRN.B	PRAI
Priority Application Year (1,9)	/PRY	S 1990-1992/PRY	PRAI
Priority Application Year, Basic (1,9)	/PRY.B	S 1997/PRY.B	PRAI

Publication Date (Patent, Basic) (1)	/PD.B	S 19980109/PD.B	PI
Publication Year (Patent, Basic) (1)	/PY.B	S 1990-1991/PY.B	PI
Update Date Patent Family (1,2)	/UPP	S US5837509/PN AND UPP>19990100	UPP, PI
Update Date, Maximum (contains /UP and /UPP) (1,2)	/UPM	S L1 and UPM>=20040400	UPP

- (1) Numeric search field that may be searched with numeric operators or ranges.
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- (3) A thesaurus is available in this field.
- (4) Content of this field is available only for records from January 2004 to the present. A thesaurus is available in this field.
- (5) This field contains all IPCs (pre-IPC Reform and post-IPC Reform) for the basic patents and family members. A thesaurus is available in this field.
- (6) This field contains the IPCs only for the basic patents published with pre-IPC Reform codes. This field will not be updated with the IPC Reform codes. Use the /IPC field to search all IPCs (pre-IPC Reform and post-IPC Reform) for the basic patent documents and family members.
- (7) This field contains current US Patent Classifications applied to records for basic and family U.S. patents from 1907 to the present. An online thesaurus is available. Current National Patent Classifications may be range-searchable in Manual of Classification order. However, the /NCL field is not a numeric field and may not be searched using numeric operators.
- (8) This field contains US Patent Classifications that were in effect when the patent was originally published. Content is available for basic patents only. An online thesaurus is available. Issued National Patent Classifications may be range-searchable in Manual of Classification order. However, the /INCL field is not a numeric field and may not be searched using numeric operators.
- (9) Data are available from 1962 (vol. 56) to the present.
- (10) Either STN or Derwent format may be used.
- (11) Search with implied (S) proximity is available in this field.
- (12) U.S. provisional priority numbers are searched only with the P appended, e.g., US1999-121903P/PRN.
- (13) When searching combinations of CPC and CPC.KW data, use (T) proximity operator.
- (14) Application numbers for U.S. utility patents from series code 13 forward, design patents (series code 29) and provisional patent applications (series code 60 and 61) may be searched either with or without their series code. Include the series code if known to ensure precision. Note that provisional patent application numbers searched without their series codes must have a P appended to the end of the number (e.g., US2013-686038P). Series code information is not available for U.S. patent application numbers with series codes below 13.
- (15) Coverage includes PCT (WO), US, and China, from 1999 to present (November 2020).

## Super Search Fields

Enter a super search code to execute a search in one or more fields that may contain the desired information. Super search fields facilitate crossfile and multfile searching. EXPAND may not be used with super search fields. Use EXPAND with the individual field codes instead.

Search Field Name	Search Code	Fields Searched	Search Examples	Display Codes
Cooperative Patent Classification <b>(3)</b> IPC of the Basic Patent (Old version of the /IPC super search field) <b>(1)</b> Patent Application and Priority Number <b>(2,3,4)</b>	/CPC /IPC.OLD /APPS	/CPCI, /CPCR /IC, /ICA, /ICI /AP, /PRN	S C09K2200-0655/CPC S A01B/IPC/OLD S A01B001/IPC.OLD S DE84-3400052/APPS S 84DE-3400052/APPS S US2013-13261341/APPS S US2013-261341/APPS S DE84-3400052/APPS.B	CPC, CPCI, CPCR IC, ICA, ICI APPS, AI, PI, PRAI
Patent Application and Priority Number, Basic <b>(2,3,4)</b> Patent Countries Patent Countries, Basic	/APPS.B /PCS /PCS.B	/AP.B, /PRN.B /PC, /DS /PC.B, /DS.B	S DE/PCS S AT/PCS.B	APPS.B, AI, PI, PRAI DS, PI DS, PI
Patent Numbers <b>(3)</b>	/PATS	/PN	S EP536930/PATS S EP-536930/PATS S WO8402426/PATS S JP04000104/PATS S JP62000031/PATS S WO9850074/PATS.B	PI, SO
Patent Numbers, Basic <b>(3)</b>	/PATS.B	/PN.B		PATS.B, PI, SO

**(1)** Numeric search field that may be searched with numeric operators or ranges.

**(2)** Content of these fields is available only for records from 1967 to the present.

**(3)** Either STN or Derwent format may be used.

**(4)** Application numbers for U.S. utility patents from series code 13 forward, design patents (series code 29) and provisional patent applications (series code 60 and 61) may be searched either with or without their series code. Include the series code if known to ensure precision. Note that provisional patent application numbers searched without their series codes must have a P appended to the end of the number (e.g., US2013-686038P). Series code information is not available for U.S. patent application numbers with series codes below 13.



## Cited References Search Fields

Search Field Name	Search Code	Search Examples	Display Codes
Cited Reference (contains referenced author, inventor, or assignee, year, volume, page, work title, or patent number)	/RE (or /CIT)	S BLONDELLE S, 1999?/RE S DE 3604874?/RE	RE
Cited Reference Accession Number in Caplus	/RAN.CAPLUS	S 1995:998201/RAN.CAPLUS	Not displayed
Cited Reference Accession Number in CA	/RAN.CA	S 122:196348/RAN.CA	Not displayed
Cited Reference Accession Number in MEDLINE	/RAN.MED	S 96233652/RAN.MED	Not displayed
Cited Reference Author Name	/RAU	S O REILLY/RAU	RE
Cited Reference File Availability	/FILE.CIT	S L1 AND CAPLUS/FILE.CIT S L1 AND MEDLINE/FILE.CIT	Not displayed
Cited Reference Inventor Name	/RIN	S ABBOTT ?/RIN	RE
Cited Reference Page Number (first)	/RPG	S 200/RPG	RE
Cited Reference Patent Country Code	/RPC	S DE/RPC	RE
Cited Reference Patent Kind Code	/RPK	S DEA1/RPK	RE
Cited Reference Patent Number	/RPN	S US5792845/RPN	RE
Cited Reference Publication Year (1)	/RPY	S 1997-1998/RPY	RE
Cited Reference Series Issue Number	/RIS	S (2 OR 3)/RIS	RE
Cited Reference Series Volume Number	/RVL	S (3 OR 4)/RVL	RE
Cited Reference Source Information (2) (contains year, volume, issue, page, and publication title)	/RSO	S (MOL AND BIOL AND 1997)/RSO	RE
Cited Reference Work (Publication Title)	/RWK	S CANCER RES/RWK	RE
Cited References Count (1)	/RE.CNT (or /REC)	S REC>0 S 1-20/RE.CNT	RE RE.CNT (REC)

(1) Numeric search field that may be searched with numeric operators or ranges.

(2) Search with implied (S) proximity is available in this field.

## Citing References Search Fields

Search Field Name	Search Code	Search Examples	Display Codes
Citing Reference Accession Numbers	/OS.G (/OS.CITING.AN)	S 2008:610804/OS.G	OS.G
Citing Reference Count (1)	/OSC.G (/CITING.CNT)	S 2-5/OSC.G	OSC.G
Date Last Citing Reference Entered STN	/UPOS.G (/CITING.UP)	S 16 Feb 2009/UPOS.G S UPOS.G>20090216	UPOS.G
Update Date, Citing Reference (1)	/UPOG	S 20091026/UPOG	UPOS.G

(1) Numeric search field that may be searched with numeric operators or ranges.

## REGISTRY Search Fields

You can search directly in CA any REGISTRY search term, including structures, with REG1stRY. To search a REGISTRY term in CA, enter the SEARCH command and your term followed by the REGISTRY field code, followed by /REG, e.g., SEARCH FENFLURAMINE/CN/REG. The REGISTRY search and crossover to CA are executed automatically and only the final CA answer set L-number is shown.

To suppress the automatic REG1stRY processing when searching CAS Registry Numbers in CA, enter SET REG1stRY OFF at an arrow prompt. To retain the OFF setting beyond the current session, enter SET REG1stRY OFF PERM at an arrow prompt.

Enter HELP FIRST at an arrow prompt in CA for more information.

## CA Section (/CC) Thesaurus

The CA Section (/CC) thesaurus is available for records from 1907 to the present.

All Relationship Codes may be used with both the SEARCH and EXPAND command in the /CC thesaurus.

Code	Content	Examples
ALL	All associated terms (BT, SELF, NOTE, HNTE, OLD, CUR, REPL, NT)	E 57 CERAMICS, 1967 TO PRESENT+ALL/CC
BT	Broader Terms (BT, SELF)	E 1 PHARMACOLOGY, 1982 TO PRESENT+BT/CC
CUR	Current Terms (SELF, CUR)	E 1 PHARMACODYNAMICS, 1972-1981+CUR/CC
HIE	Hierarchy (Broader and Narrower Terms) (BT, SELF, NT)	E 31 ALKALOIDS, 1967 TO PRESENT+HIE/CC
HIS	History (SELF, HNTE, CUR, OLD, REPL)	E 17 FOOD AND FEED CHEMISTRY, 1982 TO PRESENT+HIS/CC
HNTE	History Note (SELF, HNTE)	E 1 PHARMACOLOGY, 1982 TO PRESENT+HNTE/CC
KT	Keyword Terms (SELF, KT)	E TOXICITY+KT/CC
NOTE	Notes associated with the term (SELF, NOTE, HNTE)	E 4 TOXICOLOGY, 1972 TO PRESENT+NOTE/CC
NT	Narrower Terms (SELF, NT)	E 4 TOXICOLOGY, 1972 TO PRESENT+NT/CC
RT	Related Terms (SELF, RT)	E 33 CARBOHYDRATES, 1967 TO PRESENT+RT/CC
STD	Standard (Broader Terms, Notes, Narrower Terms) (BT, SELF, HNTE, NOTE, NT)	E 32 STEROIDS, 1967 TO PRESENT+STD/CC
UF	Used For (Forbidden Terms) (SELF, UF)	E 32 STEROIDS, 1967 TO PRESENT+UF/CC
USE	Use (Preferred Terms) (SELF, USE)	E IMMUNOCHEMISTRY+USE/CC

## Field Descriptors for the /CC Thesaurus

Code	Description
→	Self
BT	Broader Term (CA section grouping)
CUR	Current Term (current CA section)
HNTE	History Note (section history note)
KT	Keyword Terms (thesaurus terms containing the SELF term)
NOTE	Note (CA section content note)
NT	Narrower Term (subsections for CA sections from 1972 to the present)
OLD	Old Term (previously used sections)
REPL	Replacing Term (more recent, but not current, section)
RT	Related Term (related concurrently existing sections)
UF	Used for Term (non-preferred terms or sections)
USE	Use Term (preferred terms)

## Company Name (/CO) Thesaurus Search Aid

The Company Name thesaurus search aid is available in the /CO field with the most frequently occurring major company names for records from 1907 to the present.

All Relationship Codes may be used with both the SEARCH and EXPAND command in the /CO field.

Code	Content	Examples
ALL	All Associated Terms (CNUM, NAME, SELF, RT, NOTE)	E DOW CHEMICAL CO+ALL/CO
CNUM	CAS Assigned Number (CNUM, SELF, NOTE, NAME, RT)	E HONDA MOTOR CO LTD+CNUM/CO
NAME	Highest level company name information (NAME, SELF, NOTE, RT)	E DOW CHEMICAL+NAME/CO E ANGUS CHEMICAL COMPANY+NAME/CO
NOTE	Note (SELF, NOTE)	E CANON INC+NOTE/CO
RT	Related Term (SELF, RT, NAME, NOTE)	E CANON INC+RT/CO

## Field Descriptors for the Company Name Thesaurus Search Aid

Code	Description
→	Self
NAME	Preferred name for the highest level company name
CNUM	CAS Assigned Number to identify each company family
NOTE	Note associated with the term
RT	Related Term

## Controlled Term (/CT) Thesaurus for the CA Lexicon

The CA Lexicon is an online search tool for the CA indexing terms for concepts, chemical classes, and taxonomic vocabulary. The thesaurus is available for records from 1967 to the present.

All Relationship Codes may be used with both the SEARCH and EXPAND command in the /CT thesaurus.

Code	Content	Examples
ALL	All Associated Terms except for LT terms (BT, SELF, HN, NOTE, UF, USE, OLD, NEW, NT, RT, RTCS)	E AZO DYES+ALL/CT
BT	Broader Terms (BT, SELF, HN)	E BRAIN+BT/CT
HIE	Hierarchy (Broader and Narrower Terms) (BT, SELF, NT)	E BOROXINS+HIE/CT
KT	Keyword Terms (SELF, KT)	E DYES+KT/CT
HN	History Note (HN)	E PHOTOLYSIS+HN/CT
LT	Linking Terms (index heading modifying term)	E RADIOLYSIS+LT/CT
MAX	All Associated Terms, including LT terms (BT, SELF, HN, NOTE, UF, USE, OLD, NEW, NT, RT, RTCS, LT)	E DRUG DELIVERY SYSTEMS+MAX/CT
NEW	New Terms (replace OLD terms)	E NEOPLASM INHIBITORS+NEW/CT
NOTE	Notes associated with the term (SELF, HN, NOTE)	E FISH+NOTE/CT
NT	Narrower Terms (SELF, NT)	E ANTIBIOTICS+NT/CT
OLD	Old term (replaced by NEW term)	E ANTITUMOR AGENTS+OLD/CT
PFT	Preferred and Forbidden Terms (SELF, OLD, NEW, USE, UF)	E PERFUMES+PFT/CT
RT	Related Terms (SELF, RT, RTCS)	E PHOTORESISTS+RT/CT
RTCS	Related Chemical Substance Terms (SELF, RTCS)	E REFRIGERANTS+RTCS/CT
STD	Standard Terms (SELF, BT, HN, NOTE, NT, RT, RTCS)	E SUNSCREENS+STD/CT
UF	Used For (Forbidden terms) (SELF, UF)	E ARECA CATECHU+UF/CT
USE	Use Terms (SELF, USE)	E BETEL NUT+USE/CT

## Field Descriptors for the /CT Thesaurus

Code	Description
→	Self
BT	Broader Term
HN	History Note
KT	Keyword Terms
NOTE	Indexing Note
NT	Narrower Term
RT	Related Term
UF	Used For
USE	Use
RTCS	Related Chemical Substance Terms
LT	Linking Terms (index heading modifying term)
OLD	Old term (replaced by NEW term)
NEW	New Terms (replace OLD terms)

## CPC (/CPC) Thesaurus

The Cooperative Patent Classification (CPC) is jointly developed and maintained by the European Patent Office and the US Patent and Trademark Office. This thesaurus is available in the /CPC search field. All relationship codes can be used with both the EXPAND and SEARCH commands.

Relationship Code	Content	Search Examples
ALL	All usually required terms (BT, SELF, CODE, DEF)	E C12M0001-005+ALL/CPC
AUTO (1)	Automatic relationship (BT, SELF, CODE, DEF)	E G01J003-443+AUTO/CPC
BT	Broader terms (BT, SELF)	E G01J003-443+BT/CPC
CODE	Classification Code (SELF, CODE)	E CARTRIDGES+CODE/CPC
DEF	Definition (SELF, DEF)	E B65G0045-16+DEF/CPC
HIE	Hierarchy terms (all broader and narrower terms) (BT, SELF, DEF, NT)	E A01B0001-00+HIE/CPC
KT	Keyword terms (SELF, KT)	E LASER+KT/CPC
MAX	All associated terms	E G01J003-44+MAX/CPC
NEXT	Next classification within the same class (SELF, NEXT)	E A01B0001-24+NEXT/CPC
NEXT(n)	Next n classification within the same class	E A01B0001-24+NEXT3/CPC
NT	Narrower terms	E G05B0001-04+NT/CPC
PREV	Previous Code within the same class (SELF, PREV)	E G05B0019-00+PREV/CPC
PREV(n)	Previous n classifications within the same class	E G05B0019-00+PREV2/CPC
TI	Complete Title of SELF Term and Broader Terms (BT, SELF)	E G05B0001-03+TI/CPC

(1) Automatic Relationship is SET OFF. In case of SET REL ON the result of EXPAND or SEARCH without any relationship code is the same as described for AUTO.

## European Patent Classification (/ECLA or /EPC) and ICO Thesauri

These thesauri are available in the /EPC search field (for ECLA codes) and /ICO search field (for in-computer-only codes). All relationship codes can be used with both the EXPAND and SEARCH commands.

Relationship Code	Content	Search Examples
ALL	All associated terms	E C12M0001-34H2+ALL/EPC
AUTO (1)	Automatic relationship (BT, SELF, CODE, DEF)	E G01J003-443+AUTO/EPC
BT	Broader terms (BT, SELF, DEF)	E G01J0003-443+BT/EPC
CODE	Classification Code (SELF, CODE)	E SCRAPER BIASING MEANS+CODE/EPC
DEF	Definition (SELF, DEF)	E B65G0045-16+DEF/EPC
HIE	Hierarchy terms (all broader and narrower terms) (BT, SELF, DEF, NT)	E A01B0001+HIE/EPC
KT	Keyword terms (SELF, KT)	E LASER+KT/EPC
MAX	All associated terms	E G01J0003-44B+MAX/EPC
NEXT	Next classification within the same class (SELF, NEXT, DEF)	E A01B0001-24+NEXT/EPC
NEXT(n)	Next n classification within the same class	E A01B0001-24+NEXT3/EPC
NT	Narrower terms (SELF, NT, DEF)	E G05B0001-04+NT/EPC
PREV	Previous Code within the same class (PREV, SELF, DEF)	E G05B0019-418N1+PREV/EPC
PREV(n)	Previous n codes within the same class	E G05B0019-418N1+PREV2/EPC
TI	Complete Title of the SELF Term and Broader Terms (BT, SELF, DEF)	E G05B0001-03+TI/EPC

(1) Automatic Relationship is SET OFF. In case of SET REL ON the result of EXPAND or SEARCH without any relationship code is the same as described for AUTO.

## F-Term Thesaurus

This thesaurus is available in the F-Term (/FTERM) field that contains patent classifications from the Japanese Patent Office in records from January 2004 to the present.

Code	Content	Example
ALL	All associated terms (BT, SELF, TI, NT)	E 4K001/AA16+ALL/FTERM
BRO(n) (1)	Browse n preceding and following Classifications	E 4K001/AA20+BRO3/FTERM
BT	Broader Terms (BT, SELF)	E 4K001/AA25+BT/FTERM
HIE	Hierarchy (BT, SELF, NT)	E 4K001/AA14+HIE/FTERM
NEXT(n) (1)	Next n Classifications	E 4K001/AA16+NEXT5/NCL
NT	Narrower Terms (SELF, NT)	E 4K001+NT/FTERM
PREV(n) (1)	Previous n Classifications	E 5K002+PREV3/FTERM
RT	Related term	E 4K001+RT/FTERM
TI	Complete Title of the SELF Term	E 4K001/AA07+TI/FTERM

(1) When using this code in the F-Term thesaurus, you must specify a number between 1-999 as shown in example.

## Field Descriptors for the F-Term Thesaurus

Code	Description
→	Self
BT	Broader Term
NT	Narrower Term
TI	Title

## IPC Thesaurus

The classifications and catchwords for the main headings and subheadings from the current (8<sup>th</sup>) edition of the WIPO International Patent Classification (IPC) manual are available. The classifications from the previous editions (1-7) are also available as separate thesauri. To EXPAND and SEARCH in the thesauri for editions 1-7, use the field code followed by the edition number, e.g., /IPC2, for the 2<sup>nd</sup> edition. Catchwords are included only in the thesauri for the 8<sup>th</sup>, 7<sup>th</sup>, 6<sup>th</sup>, and 5<sup>th</sup> editions. The IPC thesauri are available for records from 1967 to the present.

Code	Content	Examples
ALL	All Associated Terms (BT, SELF, NT, RT)	E C01C003-00+ALL/IPC
ADV	Advanced Terms (SELF, ADVANCED)	E A01N0047-02+ADV/IPC
BRO (MAN)	Complete Class	E C01C+BRO/IPC
BT	Broader Terms (BT, SELF)	E C01F001-00+BT/IPC
COR	Core Terms (SELF, CORE)	E A01N0041-12+COR/IPC
ED	Complete title of the SELF term and IPC manual edition	E C01F001-00+ED/IPC
HIE	Hierarchy Terms (Broader and Narrower Terms) (BT, SELF, NT)	E C01C003-00+HIE/IPC
INDEX	Complete title of the SELF term	E C01F001-00+INDEX/IPC
KT	Keyword Terms (catchwords) (SELF, KT)	E CYANOGEN+KT/IPC
NEXT	Next Classification	E C01C001-00+NEXT5/IPC
NT	Narrower Terms (SELF, NT)	E C01C+NT/IPC
PREV	Previous Classification	E C01C001-12+PREV10/IPC
RT (SIB)	Related Terms (SELF, RT)	E C01C003-20+RT/IPC
TI	Complete Title of the SELF Term and Broader Terms (BT, SELF)	E C01F001-00+TI/IPC

## Field Descriptors for the IPC Thesaurus

Code	Description
→	Self
BT	Broader Term
KT	Keyword Term
NT	Narrower Term
RT	Related Term
TI	Title

## National Patent Classification Thesaurus

A thesaurus is present for the National Patent Classification, Current (/NCL) and the National Patent Classification, Issue (INCL) fields.

Code	Content	Example
ALL	All associated terms (BT, SELF, TI, NT)	E 210190000+ALL/NCL
BRO(n)	Browse n preceding and following Classifications	E 502060000+BRO3/NCL
BT	Broader Terms (BT, SELF)	E 502060000+BT/NCL
HIE	Hierarchy (BT, SELF, NT)	E 502060000+HIE/NCL
KT	Keyword Terms <b>(1)</b> (SELF, KT)	E ZEOLITES+KT/NCL
NEXT(n)	Next n Classifications	E 210660000+NEXT5/NCL
NT	Narrower Terms (SELF, NT)	E 502060000+NT/NCL
PREV(n)	Previous n Classifications	E 210665000+PREV3/NCL
RT	Related Term	E 220+RT/NCL
TI	Complete Title of the SELF Term	E 502060000+TI/NCL

**(1)** Keyword terms are the catchwords corresponding to the USPTO Manual of Classifications subject index headings and subheadings.

## Field Descriptors for the National Patent Classification Thesaurus

Code	Description
→	Self
BT	Broader Term
KT	Keyword Term
NT	Narrower Term
TI	Title

## Role (/RL) Thesaurus

The thesaurus is available for records from 1967 to the present.

Code	Content	Examples
ALL	All associated terms, including Notes (BT, SELF, NOTE, NT)	E SPN+ALL/RL
BT	Broader Terms (SELF, BT)	E CAT+BT/RL
HIE	Hierarchy Terms (Broader and Narrower Terms) (BT, SELF, NT)	E FFD+HIE/RL
NOTE	Any Notes (role definitions) (SELF, NOTE)	E IMF+NOTE/RL
NT	Narrower Terms (SELF, NT)	E USES+NT/RL

## Field Descriptors for the Role Thesaurus

Code	Description
→	Self
BT	Broader Term
NOTE	Note
NT	Narrower Term

## DISPLAY and PRINT Formats

Any combination of formats may be used to display or print answers. Multiple codes must be separated by spaces or commas, e.g., D L1 1-5 TI AU; D L1 1-5 TI,AU. The fields are displayed or printed in the order requested.

Hit-term highlighting is available in all fields except FAN. In the table-like display of the PI (Patent Information) field, highlighting is shown by an arrow on the right side pointing to the line that includes the hit terms. Highlighting must be on during SEARCH in order to use the FHITSEQ, FHITSTR, HIT, HITIND, HITRN, HITSEQ, HITSTR, KWIC, and OCC display formats.

Format	Content	Examples
AB	Abstract Text	D TI AB
AI (AP) (1,2)	Patent Application Information	D AI
AI.B (AP.B) (1,2)	Patent Application Information, Basic	D AI.B
AN	Accession Number and Original Reference Number	D 1-5 AN
AU	Author Name	D AU, TI
CC (SC)	CA Classification Code (CA section and section cross-references)	D CC
CCN (SCN)	CA Classification Code Section	D SCN
CLM (2)	Claim Text	D CLM
CLM(n) (2)	Claim Text for Claim n	D CLM(9)
CLMN	Number of Claims	D CLMN
CO	Corporate Name	D CO
CPC	Cooperative Patent Classification	D CPC
CPC.TAB	CPC, Tabular Display	D CPC.TAB

**DISPLAY and PRINT Formats (cont'd)**

<b>Format</b>	<b>Content</b>	<b>Examples</b>
CPC.UNIQ	CPC codes unique for a basic patent and equivalents	D CPC.UNIQ
CPCI	CPC Initial Classification	D CPCI
CPCR	CPC Reclassification	D CPCR
CS	Corporate Source	D TI AU CS
CS.DIV	Corporate Source Division	D CS.DIV
CS.ORG	Corporate Source Organization	D CS.ORG
CT (2)	Controlled Term	D CT
CUR (3)	Patent Currency Status	D CUR ALL
CYA (2)	Country of Author	D CYA
CYC (CY.CNT) (2)	Patent Country Count	D CYC
DOI (FTDOI)	Digital Object Identifier	D DOI
DS (2)	Designated States	D DS
DS.B (2)	Designated States, Basic	D DS.B
DT (TC)	Document Type	D DT
ECLA (EPC, EPCLA)	Patent Family European Classifications associated with patent numbers	D ECLA
ED (2)	Entry Date	D ED
ECLM (2)	Exemplary Claim	D ECLM
FS (2)	File Segment	D FS
FTERM (FTCLA, JPCLA)	File Forming Terms from the Japanese Patent Office associated with patent numbers	D FTERM
GI (2)	Graphic Image or Graphic Image Information	D GI
IC	Main and Secondary IPC	D IC
ICA	Additional or Supplementary IPC	D ICA
ICI	Index or Complementary IPC	D ICI
ICM	Main IPC	D ICM
ICO	ICO Classification	D ICO
ICS	Secondary IPC	D ICS
IN	Inventor Name	D IN
INCL	Issued National Classification	D INCL
IPC.B	IPC of the Basic Patent	D IPC.B
IPC.F	IPC, First Invention	D IPC.F
IPC.TAB	IPC, Tabular Display	D IPC.TAB
IPC.UNIQ	IPC codes unique for a basic patent and equivalents	D IPC.UNIQ
IPCI	IPC Initial Classification	D IPCI
IPCR	IPC Reclassification	D IPCR
ISN (2)	International Standard (Document) Number	D ISN
IT (4)	Index Term and Role	D AN IT
JT (2)	Journal Title	D JT
JTA (2)	Journal Title, Abbreviated	D JT
JTF (2,5,7)	Journal Title, Full	D JTF 1-3
LA	Language	D LA
LSUS (2)	Legal status information for U.S. patents	D LSUS
NCL	National Patent Classification, Current	D PI IC NCL
OREF (5)	Original Reference Number	D OREF
OS	Other Source	D TI OS
OS.G (OS.CITING.AN)	Citing Reference Accession Numbers	D OS.G
OSC.G (CITING.CNT)	Citing Reference Count	D OSC.G
PA	Patent Assignee	D PA
PB	Publisher	D PB
PI (1)	Patent Information Table	D TI PI
PI.B (PN.B) (1,2)	Patent Information, Basic	D PI.B
PN	Patent Number	D PN
PNC (PN.CNT) (2)	Patent Number Count	D PNC
PNK	Patent Number/Kind Code	D PNK
PNK.B	Patent Number/Kind Code of the Basic Patent	D PNK.B
PRAI (PRN) (1)	Priority Application Information	D PRAI
PRAI.B (PRN.B) (1,2)	Priority Application Information, Basic	D PRAI.B
PUI (2)	Publisher Item Identifier	D PUI
PY (2)	Publication Year	D TI PY
PY.B (2)	Publication Year, Basic	D TI PY.B



**DISPLAY and PRINT Formats (cont'd)**

Format	Content	Examples
RE (5) RETABLE (2,5)  RE.CNT (REC) (5) RL (4) RN (2) RNK (10) RNKM (10) SO ST SX (2,7) TI UPOS.G (CITING.UP) UPP (1) URL (2)	Cited References Cited References Table  Cited References Count Index Term and Role CAS Registry Number Rank, Relevance Score Rank Multifiles Source Supplementary Term (CA Keyword) CA Section Cross Reference Code Title of Document Date Last Citing Reference Entered STN Update Date, Patent Family Uniform Resource Locator	D TI RE D TI AU RETABLE D REC D RL D AN RN D RNK D RNKM D TI AU SO D ST D TI SX DIS TI 1-10 D UPOS.G D UPP D URL
ABS ALL (1,4)  APPS (1) APPS.B (1) BIB (1)  CAN CBIB (1) CLASS  CPC CPC.TAB CPC.UNIQ DMAX (1,4) FAM  FAN FBIB (1) IABS (1,4) IALL (1,4) IBIB IMAX (1,4) IND (4)  IPC  IPC.B IPC.TAB IPC.UNIQ ISTD (1) MAX (1,4) OBIB (1)  OIBIB (1) OSG OSG.MAX OS.GMAX PAGE (8) PATS (1) PATS.B (1)	GI, AB AN, OREF, ED, TI, AU, IN, CS, PA, SO, DOI, PB, DT, LA, CLMN, CC, FAN.CNT, PI, PRAI, CLASS, OS, GI, AB, ST, IT, RL, OSC.G, UPOS.G, OS.G, RE, RE.CNT AI, PRAI AI, PRAI (for Basic Patent) AN, OREF, TI, AU, IN, CS, PA, SO, DOI, PB, DT, LA, FAN.CNT, PI, PRAI, OS, OSC.G, RE.CNT (BIB is the default) List of CA Abstract Numbers, no L-number headers AN, OREF, plus compressed bibliographic data Classifications (IPC, CPC, NCL, ECLA, ICO and FTERM codes) associated with basic patent and family members CPCI, CPCR for the basic patent and patent family members CPC, CPC.KW, CPC.ACD, CPC.VER in tabular format Deduplicated list of CPC codes for the patent family MAX, delimited for post-processing AN, FAN.CNT, PI for the accession number, plus PI for other family accession numbers Family Accession Number (AN, FAN.CNT, FAN) BIB plus PI for other family accession numbers ABS, with text labels ALL, indented with text labels BIB, indented with text labels IMAX, indented with text labels INCL, IPCI, IPCR, CPCI, CPCR, NCL, ECLA, ICO, FTERM, CC, SX, ST, IT, RL International Patent Classifications for the basic patent and patent family members IPC of the Basic Patent IPC, Tabular Display IPC codes unique for a basic patent and equivalents STD, indented with text labels ALL, plus FAN and PI for other family accession numbers BIB, Original, without patent family data (AN, OREF, TI, AU, IN, CS, PA, SO, DOI, PB, PI, PRAI, DT, LA, OS) OBIB, indented with text labels OSC.G, UPOS.G, OS.G (up to 50 accession numbers) OSC.G, UPOS.G, and OS.G (up to 1020 accession numbers) OS.G (up to 1020 accession numbers) Page images of CA pages containing the AN of a record PI, SO PI, SO for basic patents	D ABS D 1-30 ALL  D APPS D APPS.B D 1 3  D CAN D L2 1 CBIB D CLASS  D CPC D CPC.TAB D CPC.UNIQ D MAX D FAM  D FAN D FBIB D IABS D IALL D IBIB D IMAX D TI IND  D L2 1 IPC  D IPC.B D IPC.TAB D IPC.UNIQ D ISTD D MAX D OBIB  D OIBIB D OSG D OSG.MAX D OS.GMAX D PAGE D PATS D PATS.B

**DISPLAY and PRINT Formats (cont'd)**

Format	Content	Examples
SAM (SAMPLE) (4) SBIB (1)	INCL, IPCI, IPCR, CPCI, CPCR, NCL, ECLA, ICO, CC, TI, ST, IT, RL BIB, Standard, without cited references (AN, OREF, TI, AU, IN, CS, PA, SO, DOI, PB, DT, LA, FAN.CNT, PI, PRAI, OS)	DIS SAM 1-5 D 1 3 SBIB
SCAN (5,9)	INCL, IPCI, IPCR, CPCI, CPCR, NCL, ECLA, ICO, FTERM, CC, TI, ST, IT fields will appear if available (random display, no answer numbers)	D SCAN
SIBIB (1) STD (1)	BIB, without RE.CNT AN, OREF, TI, AU, IN, CS, PA, SO, DOI, PB, DT, LA, FAN.CNT, PI, PRAI, CLASS, OS, OSC.G, RE.CNT	D SIBIB D STD
CPC.HIT (HITCPC) FHITSEQ	HIT display of CPC code searched First hit CAS Registry Number, its role, text modification, its CA index name, and the sequence diagram	D CPC.HIT or D HITCPC D CBIB FHITSEQ
FHITSTR	First hit CAS Registry Number, its role, text modification, its CA index name, and the structure diagram	D CBIB FHITSTR
HIT HITIND	Fields containing hit terms NCL, CC, ST, IT, and RL containing hit terms	D HIT 1-5 D HITIND
HITRN HITSEQ	Hit CAS Registry Number, its role, and text modification Hit CAS Registry Number, its role, text modification, its CA index name, and its sequence diagram	D HITRN D HITSTR KWIC
HITSTR	Hit CAS Registry Number, its role, text modification, its CA index name, and its structure diagram	D HITSTR KWIC
IPC.HIT (HITIPC) KWIC	Hit IPC Hit terms plus 20 words on either side (Key-Word-In-Context)	D IPC.HIT or D HITIPC D 1-7 TI KWIC
OCC (5)	Number of occurrences of hit terms and fields in which they occur	D OCC

- (1) By default, patent, application, and priority numbers are displayed in STN format. To display them in Derwent format, enter SET PATENT DERWENT at an arrow prompt. To reset the display to STN format, enter SET PATENT STN.
- (2) Custom display only.
- (3) CUR must be entered on the command line, e.g., D CUR. The patent status information displays before the requested records.
- (4) By default, roles are displayed as codes and text. To suppress display of role codes and text, enter SET ROLES OFF. To display only codes, enter SET ROLES CODES.
- (5) No online display fee for this format.
- (6) Full journal titles are available for most records from 1907.
- (7) SX displays all information in the CC field, i.e., CA section and section cross-references.
- (8) The PAGE format is used in the DISPLAY command to download images of pages of printed CA with abstracts published in 1907-1998. If the abstract is located on more than one page, all the relevant pages are automatically downloaded.
- (9) SCAN must be specified on the command line, i.e., D SCAN or DISPLAY SCAN.
- (10) The RNK and RNKM formats display only the hit term occurrence ranking for the record, with the following line:  
RELEVANCE SCORE ##. RNK is for the single file environment, while RNKM is for the multifile environment.

**Displaying CApus, CA, or MEDLINE documents for cited references**

Enter the following in the DISPLAY command: L-number for the answer set; answer number (only one may be specified); RAN.CAPLUS(x-y), RAN,CA(x-y), RAN.MED(x-y), where (x-y) is the cited reference number, numbers, or range of numbers; and the display format for the document to display, e.g., BIB ABS. For example, to display CA records for the cited references 1 and 2 from answer 2 in the answer set L5, enter the following:

=> D RAN.CA(1-2) L5 2 BIB ABS

## SELECT, ANALYZE, and SORT Fields

The SELECT command is used to create E-numbers containing terms taken from the specified field in an answer set.

The ANALYZE command is used to create an L-number containing terms taken from the specified field in an answer set.

The SORT command is used to rearrange the search results in either alphabetic or numeric order of the specified field(s).

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
Abstract	AB	Y	N
Accession Number	AN	Y (2)	N
Author	AU	Y	Y
CA Classification Code (section and subsection)	CC	Y	Y
CA Classification Code Section Descriptor	CCN (SCN)	Y	Y
CA Section Cross-Reference	SX	Y	Y
CAS Registry Number	RN	Y (2)	N
Citation	CIT	Y (3,4)	N
Cited References	RE	Y	N
Cited Reference(n)	RE(n)	Y (5)	N
Cited Reference Accession Number in CA	RAN.CA	Y (6)	N
Cited Reference Accession Number(n) in CA	RAN.CA(n)	Y (5,6)	N
Cited Reference Accession Number in MEDLINE	RAN.MED	Y (7)	N
Cited Reference Accession Number(n) in MEDLINE	RAN.MED(n)	Y (5,7)	N
Cited Reference Author Name	RAU	Y	N
	RIN	Y (8)	N
Cited Reference Count	RE.CNT (REC)	Y	Y
Cited Reference Page Number (first)	RPG	Y	N
Cited Reference Patent Number	RPN	Y	N
Cited Reference Publication Year	RPY	Y	N
Cited Reference Volume Number	RVL	Y	N
Cited Reference Work Title	RWK	Y	N
Citing Reference Accession Numbers (up to 50)	OS.G (OS.CITING.AN)	Y	N
Citing Reference OS.G Information (up to 1020 accession numbers)	OS.GMAX	Y	N
Citing Reference Information (OSC.G, UPOS.G, OS.G)(up to 1020 accession numbers)	OSG.MAX	Y	N
Citing Reference Count	OSC.G (CITING.CNT)	Y	Y
Citing Reference Date	UPOS.G (CITING.UP)	Y	Y
Claim Text	CLM	Y	N
CODEN	CODEN	Y (9)	Y
Company Name	CO	Y	Y
Controlled Term	CT	Y	Y
CPC Classification	CPC	Y	N
CPC, Initial	CPCI	Y	N
CPC, Reclassified	CPCR	Y	N
CPC Hit Display	CPC.HIT (HITCPC)	N	Y
CPC Codes Deduplicated for patent family	CPC.UNIQ	N	Y
Corporate Source	CS	Y	Y
Corporate Source, Division	CS.DIV	Y	N
Corporate Source, Organization	CS.ORG	Y	N
Country Name of Author	CYA	Y	Y
Designated States	DS	Y	N
Designated States, Basic	DS.B	Y (4,10)	N
Digital Object Identifier	DOI (FTDOI)	N	Y
Document Type	DT (TC)	Y	Y
Entry Date	ED	Y	Y

**SELECT, ANALYZE, and SORT Fields (cont'd)**

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
European Classifications	ECLA (EPC, EPCLA)	Y	N
Exemplary Claim Text	ECLM	T (4,11)	N
Family Accession Number	FAN	Y (4,11)	N
File Forming Terms	FTERM (FTCLA, JPCLA)	Y	N
File Segment	FS	Y (4)	Y
Genbank Number	GENBANK (GBN)	Y (2,4)	N
ICO Classification	ICO	Y	N
Index Term	IT	Y	N
International Standard Book Number	ISBN	Y (12)	Y
International Standard (Document) Number	ISN	Y (12)	N
International Standard Serial Number	ISSN	Y (12)	Y
Inventor Name	IN	Y	Y
IPC	IPC	Y (13)	N
IPC Initial Classification	IPCI	Y	N
IPC Reclassification	IPCR	Y	N
IPC, Additional or Supplementary	ICA	Y	Y
IPC, Basic Patent	IPC.B	Y (13)	N
IPC, First	IPC.F	Y (13)	N
IPC, Index or Complementary	ICI	Y	Y
IPC, Main	ICM	Y	Y
IPC, Main and Secondary	IC	Y	Y
IPC, Secondary	ICS	Y	Y
Issued National Classification	INCL	Y	Y
Journal Title	JT	Y	Y
Journal Title, Abbreviated	JTA	Y (13)	Y
Journal Title, Full	JTF	Y (14)	Y
Language	LA	Y	Y
National Patent Classification, Current	NCL	Y	N
Occurrence of Hit Terms	OCC	N	Y
Original Reference Number	OREF	Y (4,11)	Y
Other Source	OS	Y	Y
Patent Application Country	AC	Y (4)	Y
Patent Application Country, Basic	AC.B	Y (4,15)	Y
Patent Application Date	AD	Y (4)	Y
Patent Application Date, Basic	AD.B	Y (16)	Y
Patent Application Information	AI	Y (4,17,18)	Y
Patent Application Information, Basic	AI.B	Y (4,17,18)	Y
Patent Application Number	AP	Y (4,18)	Y
Patent Application Number, Basic	AP.B	Y (17,18)	Y
Patent Application and Priority Number	APPS	Y (4,18,19)	N
Patent Application and Priority Number, Basic	APPS.B	Y (4,18,19)	N
Patent Application Year	AY	Y	Y
Patent Application Year, Basic	AY.B	Y (20)	Y
Patent Assignee	PA	Y	Y
Patent Countries	PCS	Y (4,21)	N
Patent Countries, Basic	PCS.B	Y (4,21)	N
Patent Country	PC	Y (4)	Y
Patent Country, Basic	PC.B	Y (4,22)	Y
Patent Country Count	CYC (CY.CNT)	Y (23)	N
Patent Information	PI	Y (4,18,24)	Y
Patent Information, Basic	PI.B	Y (18,24)	Y
Patent Kind Code	PK	Y (4)	Y
Patent Kind Code, Basic	PK.B	Y (4,25)	Y
Patent Number	PN	Y (4,18)	Y
	PATS	Y (4,18,26)	N

**SELECT, ANALYZE, and SORT Fields (cont'd)**

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
Patent Number, Basic	PN.B	Y (18,24)	Y
Patent Number Count	PATS.B	Y (18,24)	N
Patent Number/Kind Code	PNC (PN.CNT)	Y (29)	N
Patent Number/Kind Code of the Basic Patent	PNK	Y	Y
Priority Application Country	PNK.B	Y	Y
Priority Application Country, Basic	PRC	Y (4)	Y
Priority Application Date	PRC.B	Y (4,30)	Y
Priority Application Date, Basic	PRD	Y (4)	Y
Priority Application Information	PRD.B	Y (31)	Y
Priority Application Information, Basic	PRAI	Y (4,18,32)	Y
Priority Application Number	PRAI.B	Y (18,32)	Y
Priority Application Number, Basic	PRN	Y (4,18)	Y
Priority Application Year	PRN.B	Y (18,32)	Y
Priority Application Year, Basic	PRY	Y (4)	Y
Publication Date	PRY.B	Y (33)	Y
Publication Date, Basic	PD	Y (4)	Y
Publication Year	PD.B	Y (34)	Y
Publication Year, Basic	PY	Y	Y
Publisher	PY.B	Y (35)	Y
Publisher Item Identifier	PB	Y	N
Role	PUI	Y	N
Source of Document	RL	Y (4)	N
Supplementary Term	SO	Y (36)	N
Title	ST	Y	N
Treatment Code	TI	Y (default)	Y
Uniform Resource Locator	TC	Y (37)	Y
Volume Number	URL	Y	N
	VL	Y	Y

- (1) HIT may be used to restrict terms extracted to terms that match the search expression used to create the answer set, e.g., SEL HIT RN.
- (2) Appends /BI to the terms created by SELECT.
- (3) Extracts first author, publication year, volume, and first page with a truncation symbol appended and with /RE appended to the terms created by SELECT.
- (4) SELECT HIT and ANALYZE HIT are not valid with this field.
- (5) (n) may be a single number, range, or list of numbers separated by a space or comma.
- (6) Selects or analyzes cited reference accession number in CA or CPlus and appends /AN to the terms created by SELECT.
- (7) Selects or analyzes cited reference accession number in MEDLINE and appends /AN to the terms created by SELECT.
- (8) Selects or analyzes cited reference author name and appends /RAU to the terms created by SELECT.
- (9) Selects or analyzes the CODEN and appends /ISN to the terms created by SELECT.
- (10) Appends /DS to the terms created by SELECT.
- (11) Appends /AN to the terms created by SELECT.
- (12) Appends /ISN to the terms created by SELECT.
- (13) Selects or analyzes the IC, ICA, ICI and appends /IPC to the terms created by SELECT.
- (14) Selects or analyzes JTF and appends /JT to the terms created by SELECT.
- (15) Appends /AC to the terms created by SELECT.
- (16) Appends /AD to the terms created by SELECT.
- (17) Appends /AP to the terms created by SELECT.
- (18) Enter SET PATENT DERWENT at an arrow prompt (=>) to SELECT or ANALYZE patent, application, and priority numbers in Derwent format.
- (19) Appends /APPS to the terms created by SELECT.
- (20) Appends /AY to the terms created by SELECT.
- (21) Selects or analyzes the country codes and appends /PCS to the terms created by SELECT.
- (22) Appends /PC to the terms created by SELECT.
- (23) Appends /CY.CNT to the terms created by SELECT.
- (24) Appends /PN to the terms created by SELECT.
- (25) Appends /PK to the terms created by SELECT.
- (26) Selects or analyzes the Patent Number and appends /PATS to the terms created by SELECT.
- (27) Appends /PN to the terms created by SELECT.
- (28) Selects or analyzes Basic Patent Number and appends /PATS to the terms created by SELECT.
- (29) Appends /PN.CNT to the terms created by SELECT.
- (30) Appends /PRC to the terms created by SELECT.
- (31) Appends /PRD to the terms created by SELECT.
- (32) Appends /PRN to the terms created by SELECT.
- (33) Appends /PRY to the terms created by SELECT.

**CA/HCA/ZCA**

(34) Appends /PD to the terms created by SELECT.

(35) Appends /PY to the terms created by SELECT.

(36) Selects or analyzes the CODEN and the ISSN and appends /SO to the terms created by SELECT.

(37) Appends /DT to the terms created by SELECT.

**Sample Records****DISPLAY ALL (Patent)**

L2 ANSWER 1 OF 265280 CA COPYRIGHT 2020 ACS on STN

AN 173:950723 CA

ED Entered STN: 03 Dec 2020

TI Radio wave absorber

IN Hashimoto, Hirokazu

PA Fujifilm Corporation, Japan

SO PCT Int. Appl., 55pp.

CODEN: PIXXD2

DT Patent

LA Japanese

CLMN 9

CC 76-14 (Electric Phenomena)

Section cross-reference(s): 49, 77

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2020230709	A1	20201119	WO 2020-JP18622	20200508
JP 2019-91327	A	20190514		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2020230709	IPCI	H05K0009-00 [I]; C01G0049-00 [I]; C08K0003-22 [I]; C08L0101-00 [I]; H01F0001-34 [I]; H01F0001-37 [I]; H01Q0017-00 [I]
	IPCR	H05K0009-00 [I]; C01G0049-00 [I]; C08K0003-22 [I]; C08L0101-00 [I]; H01F0001-34 [I]; H01F0001-37 [I]; H01Q0017-00 [I]

AB Provided is a radio wave absorber contg. a magnetic powder and a binder, wherein the vol. filling rate of the magnetic powder in the radio wave absorber is .ltoreq.35 vol.%, and the radio wave absorber has a transmission attenuation amt. of .gtoreq.8.0 dB and a reflection attenuation amt. of .gtoreq.8.0 dB.

ST radio wave absorber

IT Binders

Magnetic powders

Radio wave

(manufg. of radio wave absorber)

IT Polyolefin rubber

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(manufg. of radio wave absorber)

IT Ferrites

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(manufg. of radio wave absorber)

IT Absorbents

(radio wave; manufg. of radio wave absorber)

IT 116768-92-4P, Aluminum iron strontium oxide (Al<sub>2</sub>Fe<sub>10</sub>SrO<sub>19</sub>)

2490576-78-6P, Cobalt gallium iron titanium oxide

(Co<sub>0.05</sub>Ga<sub>0.22</sub>Fe<sub>1.68</sub>Ti<sub>0.05</sub>O<sub>3</sub>)

RL: IMF (Industrial manufacture); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufg. of radio wave absorber)

IT 7782-61-8, Ferric nitrate nonahydrate 7784-13-6, Aluminum chloride

hexahydrate 10025-70-4, Strontium chloride hexahydrate 10025-77-1,  
Ferric chloride hexahydrate 10026-22-9, Cobalt nitrate hexahydrate  
13494-90-1, Gallium nitrate 13693-11-3, Titanium sulfate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manufg. of radio wave absorber)

**DISPLAY BIB LSUS (Patent)**

L1 ANSWER 1 OF 1 CA COPYRIGHT 2013 ACS on STN  
AN 149:264451 CA [Full-text](#)  
TI MicroRNA expression abnormalities in pancreatic endocrine and acinar  
tumors  
IN Croce, Carlo M.; Calin, George A.  
PA The Ohio State University Research Foundation, USA  
SO PCT Int. Appl., 133 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007081680	A2	20070719	WO 2007-US24	20070103
	WO 2007081680	A3	20071227		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
	RW:	AP, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, EA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, EP, 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, OA, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	AU 2007205257	A1	20070719	AU 2007-205257	20070103
	CA 2635616	A1	20070719	CA 2007-2635616	20070103
	EP 1968622	A2	20080917	EP 2007-716208	20070103
	R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR			
	JP 2009521952	T	20090611	JP 2008-549532	20070103
	US 20080306018	A1	20081211	US 2008-160064	20080703
	US 7670840	B2	20100302		
	CN 101384273	A	20090311	CN 2007-80005791	20080818
	US 20100197774	A1	20100805	US 2010-700286	20100204
PRAI	US 2006-756502P	P	20060105		
	WO 2007-US24	W	20070103		
	US 2008-160064	A3	20080703		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ASSIGNMENT HISTORY FOR US 20080306018

LSUS RAD: 20080703  
RAUP: 20081211  
RAK: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).  
PAO: CROCE, CARLO M. (DATE EXECUTED: 20080627)  
CALIN, GEORGE A. (DATE EXECUTED: 20080616)  
RAC: THE OHIO STATE UNIVERSITY, 1960 KENNY ROAD, COLUMBUS, OHIO 43210,  
UNITED STATES  
RAA: MACMILLAN SOBANSKI & TODD, LLC, ONE MARITIME PLAZA FIFTH FLOOR,  
720 WATER STREET, TOLEDO, OH 43604-1619  
MRN: 21195 MFN: 793 (5 Page(s))

LSUS RAD: 20090330  
RAUP: 20090330

**CA/HCA/ZCA**

RAK: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).  
 PAO: THE OHIO STATE UNIVERSITY (DATE EXECUTED: 20090327)  
 RAC: THE OHIO STATE UNIVERSITY RESEARCH FOUNDATION, 1216 KINNEAR ROAD,  
 COLUMBUS, OHIO 43212, UNITED STATES  
 RAA: MACMILLAN, SOBANSKI & TODD, LLC, 720 WATER STREET, ONE MARITIME  
 PLAZA, FIFTH FLOOR, TOLEDO, OH 43604  
 MRN: 22469 MFN: 445 (4 Page(s))

LSUS RAD: 20080703  
 RAUP: 20100302  
 RAK: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).  
 PAO: CROCE, CARLO M. (DATE EXECUTED: 20080627)  
 CALIN, GEORGE A. (DATE EXECUTED: 20080616)  
 RAC: THE OHIO STATE UNIVERSITY, 1960 KENNY ROAD, COLUMBUS, OHIO 43210,  
 UNITED STATES  
 RAA: MACMILLAN SOBANSKI & TODD, LLC, ONE MARITIME PLAZA FIFTH FLOOR,  
 720 WATER STREET, TOLEDO, OH 43604-1619  
 MRN: 21195 MFN: 793 (5 Page(s))

LSUS RAD: 20090330  
 RAUP: 20100302  
 RAK: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).  
 PAO: THE OHIO STATE UNIVERSITY (DATE EXECUTED: 20090327)  
 RAC: THE OHIO STATE UNIVERSITY RESEARCH FOUNDATION, 1216 KINNEAR ROAD,  
 COLUMBUS, OHIO 43212, UNITED STATES  
 RAA: MACMILLAN, SOBANSKI & TODD, LLC, 720 WATER STREET, ONE MARITIME  
 PLAZA, FIFTH FLOOR, TOLEDO, OH 43604  
 MRN: 22469 MFN: 445 (4 Page(s))  
 OSC.G 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (22 CITINGS)

**DISPLAY OSG**

L1 ANSWER 1 OF 1 CA COPYRIGHT 2013 ACS on STN  
 OSC.G 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (10 CITINGS)  
 UPOS.G Date last citing reference entered STN: 27 Feb 2012  
 OS.G CAPLUS 2012:181723; 2010:1328434; 2010:548903; 2009:1288101;  
 2009:637424; 2007:75901; 2005:702147; 2005:3368; 2003:236743;  
 2001:230866

**DISPLAY IPC.TAB**

L1 ANSWER 1 OF 1 CA COPYRIGHT 2013 ACS on STN

PI WO 2007081680

IPCI CODE	VERSION	POS	INV	CC	ASSIGNMENT	DATE	STAT
A61N0001-30	(200601)	F	I	US	Human	20070719	O
A61K0038-00	(200601)	F	I	US	Human	20071227	O
A61K0038-00	(200601)	F	I	US	Human	20071227	O
C12Q0001-58	(200601)	L	I	US	Human	20071227	O
C12Q0001-58	(200601)	L	I	US	Human	20071227	O

IPCR CODE	VERSION	POS	INV	CC	ASSIGNMENT	DATE	STAT
A61N0001-30	(200601)	F	I	US	Human	20070719	O

PI AU 2007205257

IPCI CODE	VERSION	POS	INV	CC	ASSIGNMENT	DATE	STAT
A61K0038-00	(200601)	F	I	US	Human	20080129	O
A61K0038-00	(200601)	F	I	US	Human	20080129	O
C12Q0001-58	(200601)	L	I	US	Human	20080129	O
C12Q0001-58	(200601)	L	I	US	Human	20080129	O



IPCR CODE	VERSION	POS	INV	CC	ASSIGNMENT	DATE	STAT
A61K0038-00	(200601)	F	I	US	Human	20080129	O
C12Q0001-58	(200601)	L	I	US	Human	20080129	O

PI CA 2635616

• • •

**DISPLAY ALL (PRE-1907 JOURNAL RECORD)**

L1 ANSWER 1 OF 1 CA COPYRIGHT 2013 ACS on STN

AN 0:419 CA [Full-text](#)

ED Entered STN: 07 Dec 2003

TI CIII. - A new synthesis of phloroglucinol

AU Jerdan, David Smiles

CS Heidelberg University Chemical Laboratory, Heidelberg, Germany

SO Journal of the Chemical Society, Transactions (1897), 71, 1106-1114

CODEN: JCHTA3; ISSN: 0368-1645

DOI 10.1039/ct8977101106

DT Journal

LA English

CC 10 (Organic Chemistry)

OS CASREACT 0:419

AB Recent researches in the terpene series, and especially investigations into the nature of camphor, have led to the development of various formulae to represent the constitution of the latter. Especially prominent within the last few years have been the formulae proposed by Tiemann and others, in which camphor is represented as containing two variously substituted pentamethylene rings, which have three carbon atoms in common. The proposed formulae may also be described as consisting of a substituted hexamethylene ring in which two carbon atoms in the para position are united by single bonds to a seventh carbon atom. At the suggestion of the late Professor Victor Meyer, the author made various experiments with a view to the synthesis of a substance of analogous constitution. Although, unfortunately, the end in view was not attained, the experiments resulted in a new synthesis of phloroglucinol from ethylic acetonedicarboxylate, and thus added another to the many known methods of passing from the fatty to the aromatic series. Phloroglucinol itself has already been prepared synthetically from another member of the fatty series by Baeyer (Ber., 1885, 18, 3457) who, by heating the monosodium derivative of ethylic malonate, obtained the ethylic salt of phloroglucinoltricarboxylic acid. The ethereal salt, when melted with potash, yielded phloroglucinol.

IT Charcoal, bone  
Crystallization  
Etherification  
Fractionation  
Hydrazones  
Hydrolysis  
Lactones  
Wood, pine

(new synthesis of phloroglucinol)

IT 64-17-5, Ethyl alcohol 64-19-7, Acetic acid 67-56-1, Methyl alcohol  
67-66-3, Chloroform 71-43-2, Benzene 76-22-2, Camphor 100-63-0,  
Phenylhydrazine 105-50-0, Ethyl acetonedicarboxylate 106-93-4,  
Ethylene dibromide 107-07-3, Ethylene chlorhydrin 108-73-6,  
Phloroglucinol 124-38-9, Carbon dioxide 141-82-2, Malonic acid  
497-19-8, Sodium carbonate 513-77-9, Barium carbonate 7440-23-5,  
Sodium 7647-01-0, Hydrogen chloride 7664-93-9, Sulfuric acid  
7705-08-0, Ferric chloride 7726-95-6, Bromine 7783-89-3, Silver  
bromate 8002-05-9, Petroleum 8032-32-4, Ligroin 17194-00-2, Barium  
hydroxide 129874-08-4, Terpene  
(new synthesis of phloroglucinol)

**EXPAND in the CA Section Thesaurus (/CC)**

**CA/HCA/ZCA****=> E CERAMICS+ALL/CC**

E1 506928 --> CERAMICS/CC  
 E2 1860 USE 17 CERAMICS, 1962 ONLY/CC  
 E3 9758 USE 21 CERAMICS, 1963-1966/CC  
 E4 490140 USE 57 CERAMICS, 1967 TO PRESENT/CC  
 \*\*\*\*\* END \*\*\*\*\*

**=> E E4+ALL**

E5 7573149 BT1 APPLIED/CC  
 E6 490140 --> 57 CERAMICS, 1967 TO PRESENT/CC  
 NOTE THIS SECTION INCLUDES THE PREPARATION, COMPOSITION,  
 ANALYSIS, PROPERTIES, AND USES OF GLASS, CERAMICS,  
 GLAZES, ENAMELS, REFRACTORIES, CLAY PRODUCTS,  
 ABRASIVES, AND CARBON PRODUCTS. ORGANIC GLASSES ARE  
 INCLUDED IN SECTION 37. STUDIES OF RAW MATERIALS ARE  
 INCLUDED IN SECTION 53 WHEN THE INTEREST IS OF  
 GEOLOGICAL SIGNIFICANCE AND ULTIMATE USE IS  
 INCIDENTAL. CERMETS CONTAINING MORE THAN ONE PERCENT  
 METAL ARE INCLUDED IN SECTION 56. SOME SPECIFIC USES  
 AND PROPERTIES OF CERAMICS ARE COVERED IN OTHER  
 SECTIONS (E.G., 63, 65, 75, AND 76).

E7 1860 OLD 17 CERAMICS, 1962 ONLY/CC  
 E8 496 OLD 19 GLASS AND CERAMICS, 1908-1909/CC  
 E9 4422 OLD 19 GLASS AND CERAMICS, 1911-1920/CC  
 E10 1044 OLD 19 GLASS AND POTTERY, 1906-1907/CC  
 E11 46601 OLD 19 GLASS, CLAY PRODUCTS, REFRACTORIES, AND ENAMELED  
 METALS, 1921-1961/CC  
 E12 252 OLD 20 GLASS AND CERAMICS, 1910 ONLY/CC  
 E13 9758 OLD 21 CERAMICS, 1963-1966/CC  
 E14 0 NT1 57-0 CERAMICS, 1972 TO PRESENT, REVIEWS/CC  
 E15 0 NT1 57-1 CERAMICS, 1972 TO PRESENT, GLASS (OXIDE AND  
 NONOXIDE GLASSES)/CC  
 E16 0 NT1 57-2 CERAMICS, 1972-1981, CLAYS AND CLAY PRODUCTS/CC  
 E17 0 NT1 57-2 CERAMICS, 1982 TO PRESENT, CERAMICS/CC  
 E18 0 NT1 57-3 CERAMICS, 1972-1981, GLAZES/CC  
 E19 0 NT1 57-3 CERAMICS, 1982 TO PRESENT, PORCELAIN/CC  
 E20 0 NT1 57-4 CERAMICS, 1972-1981, WHITEWARE/CC  
 E21 0 NT1 57-4 CERAMICS, 1982 TO PRESENT, GLAZES AND GLASSY  
 COATINGS/CC  
 E22 0 NT1 57-5 CERAMICS, 1972-1981, REFRACTORIES/CC  
 E23 0 NT1 57-5 CERAMICS, 1982 TO PRESENT, CLAYS AND CLAY  
 PRODUCTS/CC  
 E24 0 NT1 57-6 CERAMICS, 1972-1981, ABRASIVES/CC  
 E25 0 NT1 57-6 CERAMICS, 1982 TO PRESENT, REFRACTORIES/CC  
 E26 0 NT1 57-7 CERAMICS, 1972-1981, OTHER/CC  
 E27 0 NT1 57-7 CERAMICS, 1982 TO PRESENT, ABRASIVES/CC  
 E28 0 NT1 57-8 CERAMICS, 1982 TO PRESENT, CARBON PRODUCTS/CC  
 E29 0 NT1 57-9 CERAMICS, 1982 TO PRESENT, OTHER/CC  
 \*\*\*\*\* END \*\*\*\*\*

**EXPAND in /CT Thesaurus for the CA Lexicon****=> E SUNFLOWER+ALL/CT**

E1 7005 --> Sunflower/CT  
 HNTE Valid heading during volumes 1-135 (1907-2001) only.  
 E2 8213 NEW Helianthus annuus/CT  
 \*\*\*\*\* END \*\*\*\*\*

**=> E AZO DYES+ALL/CT**

E1 14659 BT3 Chemical compounds/CT  
E2 60367 BT2 Organic compounds/CT  
E3 5673 BT1 Azo compounds/CT  
E4 32096 BT3 Materials/CT  
E5 13049 BT2 Coloring materials/CT  
E6 136743 BT1 Dyes/CT  
E7 10012 --> Azo dyes/CT  
HNTE Valid heading during volume 126 (1997) to present.  
E8 12084 OLD Dyes, azo/CT  
E9 UF Azo dye/CT  
E10 UF Azodye/CT  
E11 UF Azodyes/CT  
E12 0 NT1 1-(Phenylazo)-2-naphthol/CT  
E13 0 NT1 4-(Dimethylamino)azobenzene/CT  
E14 0 NT1 4-Amino-4'-nitroazobenzene/CT  
E15 0 NT1 4-Aminoazobenzene/CT  
E16 0 NT1 Amaranth (dye)/CT  
E17 0 NT1 C.I. Acid Red 14/CT  
E18 0 NT1 Carmine 6B/CT  
E19 0 NT1 Congo red/CT  
E20 0 NT1 Disperse Red 1/CT  
E21 0 NT1 Eriochrome Black T/CT  
E22 0 NT1 Methyl orange/CT  
E23 0 NT1 Methyl red/CT  
E24 0 NT1 New Coccine/CT  
E25 0 NT1 Pigment Yellow 12/CT  
E26 0 NT1 Pigment Yellow 128/CT  
E27 1056 NT1 Reactive azo dyes/CT  
E28 0 NT2 4-(2-Sulfatoethylsulfonyl)aniline/CT  
E29 0 NT1 Sunset Yellow/CT  
E30 0 NT1 Tartrazine/CT  
E31 0 NT1 Trypan blue/CT  
E32 264 RT Formazans/CT  
E33 45065 RT Pigments, nonbiological/CT  
E34 677 RT Stains, coloring materials/CT  
E35 RTCS 2,5-Dimethoxyaniline/CT  
E36 RTCS 4-Phenylazophenol/CT  
\*\*\*\*\* END \*\*\*\*\*

**EXPAND in /RL Thesaurus****=> E PREP+ALL/RL**

E1 5299444 --> PREP/RL  
E2 5299444 Preparation/RL  
NOTE Vol. 1 (1907) to present - Assigned to a substance in studies of the synthesis of the substance as a distinct chemical entity, formed with preparative intent, via a chemical, biochemical, or nuclear reaction. The recovery, purification, separation, or other intentional formation with preparative intent of a desired substance also receives a PREP role.  
E3 85501 NT1 BMF/RL  
E4 190130 NT1 BPN/RL  
E5 64754 NT1 BYP/RL  
E6 2933 NT1 CPN/RL  
E7 713210 NT1 IMF/RL  
E8 173903 NT1 PNU/RL  
E9 375278 NT1 PUR/RL  
E10 2529014 NT1 SPN/RL  
\*\*\*\*\* END \*\*\*\*\*

**EXPAND in the Company Name (/CO) Thesaurus Search Aid**

## CA/HCA/ZCA

=&gt; E DOW CHEMICAL+NAME/CO

E1 17194 NAME DOW CHEMICAL CO/CO  
 E2 88 --> DOW CHEMICAL/CO  
 \*\*\*\*\* END \*\*\*\*\*

=&gt; E E1+ALL

E3 0 CNUM CAS1000235/CO  
 E4 17194 --> DOW CHEMICAL CO/CO  
 NOTES 1886: Joy Morton & Co. established  
 1897: Dow Chemical Co. incorporated  
 1898: Firma Johann Haltermann founded  
 1900: Midland Chemical Co. merged into Dow Chemical Co.  
 1907: Rohm & Haas Co. founded  
 1910: Joy Morton & Co. renamed Morton Salt Co.  
 1917: Union Carbide & Carbon Corp. incorporated  
 1920: Carbide and Carbon Chemicals Corp. established  
 1933: Ethyl Dow Co. formed  
 1940: Carlisle Chemical Co. founded  
 1942: Dow Chemical of Canada organized  
 1955: Carlisle Chemical Co. acquired Advance Solvents  
 & Chemical Co.  
 1957: Shipley Co. founded  
 1957: Union Carbide & Carbon Corp. renamed Union  
 Carbide Corp.  
 1970: Rodel Inc. established  
 1980: Carlisle Chemical Co. renamed Carstab Corp.  
 1989: DowElanco formed  
 1989: Morton International, Inc. acquired Carstab Corp.  
 1992: Rohm & Haas Co. acquired Shipley Co.  
 1995: Union Carbide Corp. acquired Shell Polypropylene  
 Company  
 1997: ChiroTech Technology Ltd. established  
 1997: Dow Chemical Co. acquired full ownership of Dow  
 Mitsubishi Chemical Ltd.  
 1998: Dow Chemical Co. acquired Hampshire Chemical  
 Corp.  
 1998: Dow Chemical Co. acquired Mycogen Corp.  
 1998: Dow Chemical Co. acquired Sentrachim Ltd.  
 integrated  
 1999: Dow Chemical Co. acquired Angus Chemical Company  
 1999: Rohm & Haas Co. acquired LeaRonal, Inc.  
 1999: Rohm & Haas Co. acquired Morton International,  
 Inc.  
 2001: Dow-Reichhold Specialty Latex LLC formed  
 2001: Dow Chemical Co. acquired ChiroTech Technology  
 Ltd.  
 2001: Dow Chemical Co. acquired Haltermann AG  
 2001: Dow Chemical Co. acquired Michael Cotts Chemicals  
 2001: Dow Chemical Co. acquired Union Carbide Corp.  
 2004: Shipley Co. and Rodel Inc. merged to form Rohm &  
 Haas Electronic Materials  
 2006: Dow Chemical Co. acquired Zhejiang Omex  
 Environmental Engineering Ltd  
 2007: Dow Chemical Co. acquired Wolff Walsrode AG  
 2008: Dow-Reichhold Specialty Latex LLC dissolved  
 2009: Dow Chemical Co. acquired Rohm & Haas  
 E5 40 RT1 ADVANCE SOLVENTS CHEMICAL CORP/CO  
 E6 32 RT1 AGRIGENET ADV SCI CO/CO  
 E7 33 RT1 AGRIGENET CORP/CO  
 E8 66 RT1 AGRIGENETICS INC/CO  
 E9 14 RT1 AGRIGENETICS RESEARCH ASSOCIATES LTD/CO  
 E10 18 RT1 AMERCHOL CORP/CO  
 E11 19 RT1 AMERCHOL CORPORATION/CO  
 E12 9 RT1 ANGUS CHEM CO/CO

E13	36	RT1	ANGUS CHEMICAL CO/CO
E14	65	RT1	ANGUS CHEMICAL COMPANY/CO
E15	13	RT1	ANGUS CHEMIE GMBH/CO
E16	8	RT1	AWD TECHNOLOGIES INC/CO
E17	13	RT1	BENFIELD CORP/CO
E18	2	RT1	BORIDE PRODUCTS INC/CO
E19	65	RT1	BUNA SOW LEUNA OLEFINVERBUND G M B H/CO
E20	52	RT1	BUNA SOW LEUNA OLEFINVERBUND GMBH/CO
E21	68	RT1	BUSHY RUN RES CENT/CO
E22	11	RT1	CARBIDE AND CARBON CHEM CO/CO
• • •			
E323	1	RT1	UNION CARBIDE SERVICES K K/CO
E324	1	RT1	UNION CARBIDE SOUTH AFRICA PTY LTD/CO
E325	1	RT1	UNION CARBIDE STELLITE CO/CO
E326	12	RT1	UNION CARBIDE TECH CENT/CO
E327	9	RT1	UNION CARBIDE TECHNICAL CENTER/CO
E328	1	RT1	UNION CARBIDE THAILAND LTD/CO
E329	6	RT1	UNION CARBIDE U K LTD/CO
E330	6	RT1	UNION CARBIDE UK LTD/CO
E331	2	RT1	WESTERN CARBIDE CORP/CO
E332	12	RT1	WOLFF CELLULOSICS G M B H CO K G/CO
E333	16	RT1	WOLFF CELLULOSICS GMBH CO KG/CO
E334	242	RT1	WOLFF WALSRODE A G/CO
E335	115	RT1	WOLFF WALSRODE AG/CO
E336	21	RT1	WOLFF WALSRODE AKTIENGESELLSCHAFT/CO
E337	1	RT1	WOLFF WALSRODE GMBH CO KG/CO
E338	11	RT1	ZHEJIANG OMEX ENVIRONMENTAL ENGINEERING CO LTD/CO
E339	4	RT1	ZHEJIANG OMEX ENVIRONMENTAL ENGINEERING LIMITED/CO
E340	13	RT1	ZHEJIANG OMEX ENVIRONMENTAL ENGINEERING LTD/CO

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

### EXPAND in the International Patent Classification (IPC) Thesaurus

#### => E A23G001-00/IPC

E#	FREQUENCY	AT	TERM
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E1	13332	24	A23G/IPC
E2	2925		A23G0001/IPC
E3	2261	25 -->	A23G0001-00/IPC
E4	178	2	A23G0001-02/IPC
E5	190	10	A23G0001-04/IPC
E6	1		A23G0001-05/IPC
E7	21	2	A23G0001-06/IPC
E8	3	2	A23G0001-08/IPC
E9	1		A23G0001-09/IPC
E10	52	2	A23G0001-10/IPC
E11	16	2	A23G0001-12/IPC
E12	3	2	A23G0001-14/IPC

#### => E E3+ALL

E13	0	BT4	A/IPC SECTION A - HUMAN NECESSITIES
E14	0	BT4	FOODSTUFFS; TOBACCO/IPC
E15	0	BT3	A2/IPC
E16	0	BT2	A23/IPC FOODS OR FOODSTUFFS; THEIR TREATMENT, NOT COVERED BY OTHER CLASSES Note (1) Attention is drawn to the following places: - Polysaccharides, derivatives thereof - Animal or vegetable oils, fats, fatty substances or waxes - Biochemistry, beer, spirits, wine, vinegar
E17	13332	BT1	A23G/IPC COCOA; COCOA PRODUCTS, e.g. CHOCOLATE; SUBSTITUTES FOR

COCOA OR COCOA PRODUCTS; CONFECTIONERY; CHEWING GUM;  
ICE-CREAM; PREPARATION THEREOF

Note

(1) In this subclass, the following term is used with the meaning indicated:

- "ice-cream" includes any edible frozen or congealed semi-liquid or pasty substance, e.g. slush-ice.

(2) In this subclass, subject matter which cannot be completely classified in a single one of the main groups should be classified in each relevant main group.

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E18      2261  -->  A23G0001-00/IPC
                Cocoa; Cocoa products, e.g. chocolate; Substitutes
                therefor (kitchen equipment for cocoa preparation A47J,
                e.g. apparatus for making beverages A47J0031-00)
                CORE
                VALID FROM 19680901 TO PRESENT ( IPC EDITION: 1-8 )
E19      178   NT1  A23G0001-02/IPC
                . Preliminary treatment, e.g. fermentation of cocoa
                (machines for roasting cocoa A23N0012-00)
                ADVANCED
                VALID FROM 19680901 TO PRESENT ( IPC EDITION: 1-8 )
E20      190   NT1  A23G0001-04/IPC
                . Apparatus specially adapted for manufacture or
                treatment of cocoa or cocoa products (machines for
                roasting cocoa A23N0012-00; crushing or grinding
                apparatus in general B02C)
                ADVANCED
                VALID FROM 19680901 TO PRESENT ( IPC EDITION: 1-8 )
E21      21    NT2  A23G0001-06/IPC
                . . Apparatus for preparing or treating cocoa beans or
                nibs
                ADVANCED
                VALID FROM 19680901 TO PRESENT ( IPC EDITION: 1-8 )
. . .
E46      173   NT3  A23G0001-54/IPC
                . . . Composite products, e.g. layered, coated, filled
                ADVANCED
                VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )
E47      509   NT2  A23G0001-56/IPC
                . . Liquid products; Solid products in the form of
                powders, flakes or granules for making liquid products,
                e.g. for making chocolate milk
                ADVANCED
                VALID FROM 20060101 TO PRESENT ( IPC EDITION: 8 )

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

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