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Subject Coverage

- Analytical chemistry
- Applied chemistry
- Biochemistry
- Chemical engineering
- Macromolecular chemistry
- Organic chemistry

File Type

Bibliographic

Features

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)				
Alerts (SDIs)	Daily (Monday-Friday), weekly (default), biweekly				
CAS Registry Number® Identifiers	☑	Page Images	☑	STN® AnaVist™	☑
Keep & Share	☑	SLART	☑		
Learning Database	☑	Structures	☑		

Record Content

- Bibliographic information and available abstracts
- Cited references for journals, conference proceedings, and basic patents from the US, EPO, WIPO, and German patent offices added to CAS databases since 1997
- 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
- Citing references
- Legal status information for U.S. patents since 1980, Patent Status Indicator information.
- Patent classifications: IPC, CPC, ECLA, ICO, NCL and FTERM
- PatentPak®-specific PDF links and data (available to PatentPak subscribers only)
- Claims (from US, WIPO and Chinese patents, 1999 – present)

File Size

More than 54.6 million records (03/2021)

Coverage

[4]
1907-present plus more than 180,000 pre-1907 records

Updates

Daily updates (more than 5000 records)

Language

English

Database Producer

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: help@cas.org

Sources

Journals: Thousands of journals are monitored. All articles, including biographical items, book reviews, editorials, errata, letters to the editor, news announcements, product reviews, meeting abstracts, and miscellaneous items, from nearly 1500 key chemical journals covered since 1994. Bibliographic information and available abstracts for the articles from key journals are added within 1 week of journal receipt. New bibliographic records are added daily.

- Patents
- Conference proceedings
- Electronic-only journals
- Books
- Dissertations
- Reviews
- Technical disclosures
- Web pre-prints
- Meeting abstracts

User Aids

- Training materials are available on the CAS website at www.cas.org
- STNGUIDE
- Online Helps (HELP DIRECTORY lists all help messages available)

Cluster

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- PETROLEUM
- PHARMACOLOGY
- PHYSICS
- POLYMERS
- PV
- SAFETY
- TOXICOLOGY

STN Database Cluster information:
http://www.stn-international.com/en/customersupport/customer-support#cluster+%7C+subjects+%7C+features

Related Databases

- CA
- LCA

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 1966:508061/AN	AN, DN
Author (inventor)	/AU	S LEHNINGER A?/AU S (DUCHEYNE P?(S)EDITOR#)/AU S ANON/AU	AU, IN
CA Section Cross Reference (number and title) **(1,2)**	/SX	S 1/SX S ANALYTICAL/SX S RADIATION CHEMISTRY/SX	CC
Classification Code (contains CA section-subsection number, if available, section title, and section group codes) **(2,3)**	/CC (or /SC)	S 1/CC S 80-6/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 (organization name, patent assignee) **(2)**	/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 Number	/DN	S 41:39650/DN	DN
Document Type (code and text)	/DT (or /TC)	S P/DT S PATENT/DT S NEWS ANNOUNCEMENT/DT	DT
Entry Date **(5)**	/ED	S ED>20060211 S ED>FEB 11, 2006	ED
Field Availability	/FA	S L1 AND ABS/FA	Not displayed
File Segment	/FS	S L1 NOT NONINDEXED/FS S NOSECTION/FS	FS
Index Term * **(6)**	/IT	S 75-28-5(2W)CRACKING OF/IT	IT
International Standard(Document) Number (contains CODEN, ISBN, and ISSN) **(7)**	/ISN	S JOCRAM/ISN S 0021-9673/ISN	ISN, SO

General Search Fields (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
Issue Number of Publication **(5,8)**	/IS	S 1-3/IS and 30/VL	SO
Journal Title	/JT	S J CHROMA TOGR/JT S COMPT REND?/JT S IP.COM JOURNAL/JT	JT, SO
Journal Title Keyword	/JTW	S NANO/JTW	SO
Language (code and text) **(9)**	/LA	S L1 AND EN/LA or S L1 AND ENGLISH/LA S L1 NOT DE/LA	LA
Original Reference Number **(10)**	/OREF	S 63:5967A/OREF	OREF
Other sources **(1)**	/OS	S L1 and MARPAT/OS	OS
Publication Date **(5)**	/PD	S PD>20010400 S JUNE 1992-SEPT 1993/PD	PI, SO
Publication Year **(5)**	/PY	S 1947-1949/PY	PI, PY, SO
Publisher **(2)**	/PB	S ACADEMIC/PB	PB
Publisher Item Identifier **(1)**	/PUI	S "S 0014-5793(96)01227-6"/PUI	PUI
CAS Registry Number (CAS RN) **(12)**	/RN	S 50-78-2/RN S 50-78-2D/RN S 50-78-2DP/RN S 50-78-2P/RN	RN
Role **(1,3)**	/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, URL, and access to prepublication articles in ACS journals) **(7,11)**	/SO	S INORG CHEM/SO S JOCRAM/SO S 0021-9673/SO S AM CERAM SOC/SO S 1992/SO S ACS ASAP/SO S IP COM JOURNAL/SO	SO
Supplementary Term * **(1)**	/ST	S LIVER METAB?/ST	ST
Title *	/TI	S LIVER/TI S SPIN SPIN/TI S (METABOLISME(S)VEGETAUX)/TI	TI
Uniform Resource Locator **(1)**	/URL	S "HTTP://WWW.BIOSCIENCE.ORG/ BIOSCIENCE/1996/V1/D/CHINTALL/ /HTMLS/324-339.HTM"/URL	SO, URL
Update Date **(5)**	/UP	S L1 AND UP>20060400 S UP>APRIL 1, 2006	Not displayed
Update Date, Addition of Registered Substance **(5)**	/UPIT	S L2 AND UPIT>20080200	Not displayed
Update Date, CA Abstract Number and Indexing **(5)**	/UPI	S L1 AND UPI>=200800	Not displayed
Update Date, Maximum **(5)**	/UPM	S L1 AND UPM>=200803	Not displayed
Volume and Issue of CA	/VI	S 41-17/VI	DN
Volume Number of Publication **(5)**	/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.
(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 match the index headings in the CA Lexicon. 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.
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(8) Content 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.
Continued on next page

(10) OREF contains the CA volume number and page location information for abstracts published 1907-1998.

(11) Searching ACS ASAP/SO gives access to the ACS journal references prior to those articles being published in the printed ACS journals. Starting on July 29, 1998, the bibliographic data and the abstracts for ACS documents are added to CAplus records as soon as they become available on the ACS Publications web site (pubs.acs.org). Once the document receives the volume, issue, and pagination, the record is updated with this bibliographic information in the Source (SO) field and the ACS ASAP notation is removed.

(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 * **(16)**	/CLM or /BIEX	S COBALT (L) SALT#/CLM	CLM
Cooperative Patent Classification **(3,14)**	/CPC	S C12N0009/CPC	
Cooperative Patent Classification, Action Date	/CPC.ACD	S 20121113/CPC.ACD	CPC.TAB
Cooperative Patent Classification, Combination Sets	/CPC.CS	S (H01L2224-48091 (S) H01L2924-00014)/CPC.CS	CPC.TAB
Cooperative Patent Classification, Keywords **(14)**	/CPC.KW	S C12N0009/CPC (S) I/CPC.KW	CPC.TAB
Cooperative Patent Classification, Version	/CPC.VER	S 20130101/CPC.VER	CPC.TAB
Cooperative Patent Initial Classification	/CPCI	S A61K0006-0014/CPCI	CPCI
Country Number Count **(1)**	/CYC (or CY.CNT)	S L1 AND 4-5/CYC	CY.CNT
Designated States **(2)**	/DS	S FR/DS S R DE/DS	DS, PI
Designated States, Basic **(2)**	/DS.B	S DE/DS.B	DS, PI
European Classifications **(3)**	/ECLA (or /EPC or /EPCLA)	S C01B003/ECLA S C01B003/00D2/ECLA	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 * **(16)**	/ECLM	S COBALT (L) MIXTURE/ECLM	ECLM
Extended Basic Index	/BIEX or /CLM	S ALLOPURINOL/BIEX	CLM
Family Accession Number	/FAN	S 1998:98369/FAN	
Family Accession Number Count **(1)**	/FAN.CNT (or FAM.CNT)	S L1 AND FAN.CNT>1	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 **(2,7)**	/ICA	S B01J/ICA S B01J027/ICA S CYANOGEN/ICA	ICA, CLASS
International Patent Classification, All **(5)**	/IPC	S A61K/IPC S A61K0031-473/IPC	IPC, CLASS
International Patent Classification, Basic Patent **(6)**	/IPC.B	S G01N0001-28/IPC.B	IPC.B, CLASS
International Patent Classification, Index or Complementary **(2,6)**	/ICI	S A61K/ICI S A61K031/ICI S AMMONIA/ICI	ICI, CLASS
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, CLASS

Patent Search Fields (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
International Patent Classification, Main and Secondary **(2,6)**	/IC	S C07C/IC S C07C015/IC S C07C015-04/IC S CYANOGEN/IC	IC, CLASS
International Patent Classification, Main Group, Range Searchable **(1,2,6)**	/MGR	S 10-20/MGR(S)C07C/IC	IC, CLASS
International Patent Classification, Secondary **(2,6)**	/ICS	S C02F/ICS S AMMONIA/ICS	IC, ICS, CLASS
International Patent Classification, Subgroup, Range Searchable **(1,2,7)**	/SGR	S SGR=>30000(S)C01B031/IC	IC, CLASS
International Patent Classification, Version	/IPC.VER	S 6/IPC.VER	IPC.TAB
International Patent Initial Classification	/IPCI	S H01L0023-29/IPCI	IPCI, CLASS
International Patent Reclassification	/IPCR	S C08L0061-00/IPCR	IPCR, CLASS
,Inventor	/IN	S PATTON JERRY R/IN	IN
National Patent Classification, Current **(8)**	/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 **(9)**	/INCL	S 433228000/INCL S 433/227-433/229/INCL S 433/228.000/INCL	INCL, CLASS
National Patent Classification, Issue, Range Searchable **(1,8)**	/NCLR	S 106020000-106040000/NCLR	NCL, CLASS
Number of Claims **(16)**	/CLMN	S CLMN>20	CLMN
Patent Application Country, Basic	/AC.B		AI, PI
Patent Application Date **(1,10)**	/AD	S AD>19920100 S AD>JANUARY 20, 1993	AI, PI
Patent Application Date, Basic **(1,10)**	/AD.B	S 19970220/AD.B	AI, PI
Patent Application Number **(2,11,15)**	/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 Count	/AP.CNT	S 4/AP.CNT	Not displayed
Patent Application Number, Basic **(2,11,15)**	/AP.B	S JP87-10001/AP.B	AI, PI
Patent Application Year **(1,10)**	/AY	S 1990-1992/AY	AI, PI
Patent Application Year, Basic **(1,10)**	/AY.B	S AY.B>1997	AI, PI
Patent Assignee **(12)**	/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 **(11)**	/PN	S EP536930/PN S EP-536930/PN S WO8402426/PN S JP04000104/PN S JP62000031/PN	PI

Patent Search Fields (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
		S IP6243D/PN	
Patent Number, Basic **(11)**	/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
Patent Status Established Date (**1**)	/STED	S 20210204/STED	STED
Patent Status Established Year (**1**)	/STEY	S 2021/STEY	STEY
Patent Status Indicator	/STI or /PSPI	S DEAD/STI S D/PSPI	STI PSPI
Patent Status Indicator Basic	/STI.B or /PSPI.B	S ALIVE/STI.B S A/PSPI.B	PSPI.B
Patent Status Update Date **(1)**	/STUP	S 20210204/STUP	Not displayed
Patent Status Update Year **(1)**	/STUY	S 2021/STUY	Not displayed
Priority Application Country	/PRC	S US/PRC	PRAI
Priority Application Country, Basic	/PRC.B	S US/PRC.B	PRAI
Priority Application Date **(1,10)**	/PRD	S PRD>19910600 S June 20 1991/PRD	PRAI
Priority Application Date, Basic **(1,10)**	/PRD.B	S PRD.B>19940100	PRAI
Priority Application Number **(2,11,13,15)**	/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 **(2,11,13,15)**	/PRN.B	S US91-721765/PRN.B	PRAI
Priority Application Year **(1,10)**	/PRY	S 1990-1992/PRY	PRAI
Priority Application Year, Basic **(1,10)**	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.
(2) Content of this field is available only for records starting in 1967.
(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.
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(6) This field contains pre-IPC Reform and post-IPC Reform IPCS for the basic patents.
(7) 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.
(8) 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.
(9) This field contains U.S. 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.
(10) Data are available from 1962 (Volume 56) to the present.
(11) Either STN or Derwent format may be used.
(12) Search with implied (S) proximity is available in this field.
(13) U.S. provisional priority numbers are searched only with the P appended, e.g., US1999-121903P/PRN.

Continued on next page

(14) When searching combinations of CPC and CPC.KW data, use (T) proximity operator.
(15) 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.
(16) 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 multifile 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 **(3)**	/CPC	/CPCI, /CPCR	S C09K2200-0655/CPC	CPC, CPCI, CPCR
Old version of the /IPC super search field **(1)**	/IPC.OLD	/IC, /ICA, /ICI	S A01B/IPC.OLD S A01B001/IPC.OLD	IC, ICA, ICI
Patent Application and Priority Number **(2,3,4)**	/APPS	/AP, /PRN	S DE84-3400052/APPS S 84DE-3400052/APPS S US2013-13261341/APPS S US2013-261341/APPS	APPS, AI, PI, PRAI
Patent Application and Priority Number, Basic **(2,3,4)**	/APPS.B	/AP.B, /PRN.B	S DE84-3400052/APPS.B	APPS.B, AI, PI, PRAI
Patent Countries	/PCS	/PC, /DS	S DE/PCS	DS, PI
Patent Countries, Basic	/PCS.B	/PC.B, /DS.B	S AT/PCS.B	DS, PI
Patent Numbers **(3)**	/PATS	/PN	S EP536930/PATS S EP-536930/PATS S WO8402426/PATS S JP04000104/PATS S JP62000031/PATS	PI, SO
Patent Numbers, Basic **(3)**	/PATS.B	/PN.B	S WO9850074/PATS.B	PATS.B, PI, SO

(1) Numeric search field that may be searched with numeric operators or ranges.
(2) Content of this field 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, and patent number)	/RE (or /CIT)	S BLONDELLE S, 1999?/RE S DE 3604874?/RE	RE
Cited Reference Accession Number in CA	/RAN.CA	S 145:292917/RAN.CA	Not displayed
Cited Reference Accession Number in CAPLUS	/RAN.CAPLUS	S 1995:998201/RAN.CAPLUS	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 (contains year, volume, issue, page, and publication title) **(2)**	/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.CNT

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

To suppress the automatic REG1stRY processing when searching CAS Registry Numbers® in CAplus, 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 CAplus 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 commands 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 commands 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 /CO 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 commands 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 (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 G01J0003-443+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 G01J0003-44+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 (/FTERM) 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/FTERM
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 (8th) 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 2nd edition. Catchwords are included only in the thesauri for the 8th, 7th, 6th, and 5th 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 (SELF, BT)	E C01F001-00+BT/IPC
COR	Core Terms (SELF, CORE)	E A01N0047-04+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 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 (SELF, KT) **(1)**	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 Role (/RL) 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 Patent Information (PI) 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, Document 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 Descriptor	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
CPC	Cooperative Patent Classification	D CPC
CPC.TAB	CPC Tabular Display	D CPC.TAB
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

DISPLAY and PRINT Formats (cont'd)

Format	Content	Examples
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
DN	Document Number (CA Reference Number)	D DN
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 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 JTA
JTF **(2,6)**	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
PSPI	Patent Status Patent Information Table	D PSPI
PSPI.B	Patent Status Information, Basic	D PSPI.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
RE **(5)**	Cited References	D TI RE

DISPLAY and PRINT Formats (cont'd)

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

DISPLAY and PRINT Formats (cont'd)

Format	Content	Examples
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 number	D SCAN
SBIB **(1)**	BIB, Standard, without RE.CNT (AN, DN, OREF, TI, AU, IN, CS, PA, SO, DOI, PB, DT, LA, FAN.CNT, DE, AI, PI, PRAI, OS)	D 1 3 SBIB
SIBIB **(1)**	SBIB, indented with text labels	D SIBIB
STD **(1)**	AN, DN, OREF, TI, AU, IN, CS, PA, SO, DOI, PB, DT, LA, FAN.CNT, PI, PRAI, CLASS, OS, OSC.G, RE.CNT (If PatentPak enabled, PPPI and PPAK also included.)	D STD
XML	BIB AB in XML format	D XML
CPC.HIT (HITCPC)	HIT display of CPC code searched	D CPC.HIT or D HITCPC
FHITSEQ	First hit CAS Registry Number, its role, text modification, its CA index name, and the sequence diagram	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	Fields containing hit terms	D HIT 1-5
HITIND	NCL, CC, ST, IT, and RL containing hit terms	D HITIND
HITPPAK **(11)**	Hit PatentPak Substance Names and CAS Registry Number	D HITPPAK
HITRN	Hit CAS Registry Number, its role, and text modification	D HITRN
HITSEQ	Hit CAS Registry Number, its role, text modification, its CA index name, and its sequence diagram	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)	Hit IPC	D IPC.HIT or D HITPIC
KWIC	Hit terms plus 20 words on either side (Key-Word-In-Context)	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 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.
(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.
(11) Custom displays of HITPPAK are available exclusively to PatentPak STN subscribers.

Displaying CAplus 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.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 Caplus records for the cited references 1 and 2 from answer 2 in the answer set L5, enter the following:

=> **D RAN.CAPLUS(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 **(3)**	N
Citation	CIT	Y **(4,5)**	N
Cited References	RE	Y	N
Cited Reference(n)	RE(n)	Y	N
Cited Reference Accession Number in CA	RAN.CA	Y **(6)**	N
Cited Reference Accession Number(n) in CA	RAN.CA(n)	Y **(6)**	N
Cited Reference Accession Number in CAplus	RAN.CAPLUS	Y **(6)**	N
Cited Reference Accession Number(n) in CAplus	RAN.CAPLUS(n)	Y **(6)**	N
Cited Reference Accession Number in MEDLINE	RAN.MED	Y **(6)**	N
Cited Reference Accession Number(n) in MEDLINE	RAN.MED(n)	Y **(6)**	N
Cited Reference Author Name	RAU	Y	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 **(7)**	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 of Author	CYA	Y	Y
Designated States	DS	Y	N
Designated States, Basic	DS.B	Y **(5,8)**	N
Digital Object Identifier	DOI (FTDOI)	N	Y
Document Number	DN	Y	N
Document Type	DT (TC)	Y	Y
Entry Date	ED	Y	Y
European Classifications	ECLA (EPC, EPCLA)	Y	N
Exemplary Claim Text	ECLM	Y	N
Family Accession Number	FAN	Y **(5,6)**	N

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

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
File Forming Terms	FTERM (FTCLA, JPCLA)	Y	N
File Segment	FS	Y	Y
GENBANK® Numbers	GBN (GENBANK)	Y	N
HIT Cited Reference	HITRE	N	Y
ICO Classification	ICO	Y	N
Index Term	IT	Y	N
International Standard Book Number	ISBN	Y **(7)**	Y
International Standard (Document) Number	ISN	Y	N
International Standard Serial Number	ISSN	Y **(7)**	Y
Inventor Name	IN	Y	Y
IPC, All	IPC	Y **(9)**	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 **(9)**	N
IPC, First	IPC.F	Y **(9)**	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 **(10)**	Y
Journal Title, Full	JTF	Y **(10)**	Y
Language	LA	Y	Y
National Patent Classification, Current	NCL	Y	N
Occurrence of Hit Terms	OCC	N	Y
Original Reference Number	OREF	Y **(5,6)**	Y
Other Source	OS	Y	Y
Patent Application Country	AC	Y **(5)**	Y
Patent Application Country, Basic	AC.B	Y **(5,11)**	Y
Patent Application Date	AD	Y **(5)**	Y
Patent Application Date, Basic	AD.B	Y **(12)**	Y
Patent Application Information	AI	Y **(5,13,14)**	Y
Patent Application Information, Basic	AI.B	Y **(13,14)**	Y
Patent Application Number	AP	Y **(5,14)**	Y
Patent Application Number, Basic	AP.B	Y **(5,13,14)**	Y
Patent Application and Priority Number	APPS	Y **(5,13,15)**	N
Patent Application and Priority Number, Basic	APPS.B	Y **(5,13,15)**	N
Patent Application Year	AY	Y	Y
Patent Application Year, Basic	AY.B	Y **(16)**	Y
Patent Assignee	PA	Y	Y
Patent Countries	PCS	Y **(5,17)**	N
Patent Countries, Basic	PCS.B	Y **(5,17)**	N
Patent Country	PC	Y **(5)**	Y
Patent Country, Basic	PC.B	Y **(5,18)**	Y
Patent Country Count	CYC (CY.CNT)	Y **(19)**	N
Patent Information	PI	Y **(5,14,20)**	Y
Patent Information, Basic	PI.B	Y **(14,20)**	Y
Patent Kind Code	PK	Y **(5)**	Y
Patent Kind Code, Basic	PK.B	Y **(5,21)**	Y
Patent Number	PN	Y **(5,14)**	Y
	PATS	Y **(5,14,22)**	N
Patent Number, Basic	PN.B	Y **(14,23)**	Y
	PATS.B	Y **(5,14,22)**	N

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

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
Patent Number Count	PNC (PN.CNT)	Y **(24)**	N
Patent Number/Kind Code	PNK	Y	Y
Patent Number/Kind Code of the Basic Patent	PNK.B	Y	Y
Priority Application Country	PRC	Y **(5)**	Y
Priority Application Country, Basic	PRC.B	Y **(5,25)**	Y
Priority Application Date	PRD	Y **(5)**	Y
Priority Application Date, Basic	PRD.B	Y **(26)**	Y
Priority Application Information	PRAI	Y **(5,14,27)**	Y
Priority Application Information, Basic	PRAI.B	Y **(14,27)**	Y
Priority Application Number	PRN	Y **(5,14)**	Y
Priority Application Number, Basic	PRN.B	Y **(14,27)**	Y
Priority Application Year	PRY	Y **(5)**	Y
Priority Application Year, Basic	PRY.B	Y **(5,28)**	Y
Publication Date	PD	Y **(5)**	Y
Publication Date, Basic	PD.B	Y **(5,29)**	Y
Publication Year	PY	Y	Y
Publication Year, Basic	PY.B	Y **(30)**	Y
Publisher	PB	Y	N
Publisher Item Identifier	PUI	Y	N
Role	RL	Y **(5)**	N
Source of Document	SO	Y **(31)**	N
Supplementary Term	ST	Y	N
Title	TI	Y (default)	Y
Treatment Code	TC	Y **(32)**	Y
Uniform Resource Locator	URL	Y	N
Volume Number	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) Selects or analyzes AN and DN and appends /AN to the terms created by SELECT.
(3) Appends /BI to the terms created by SELECT.
(4) Extracts first author, publication year, volume, and first page with a truncation symbol appended and with /RE appended to the terms created by SELECT.
(5) SELECT HIT and ANALYZE HIT are not valid with this field.
(6) Appends /AN to the terms created by SELECT.
(7) Appends /ISN to the terms created by SELECT.
(8) Appends /DS to the terms created by SELECT.
(9) Selects specified IPC codes and appends /IPC to the terms created by SELECT.
(10) Appends /JT to the terms created by SELECT.
(11) Appends /AC to the terms created by SELECT.
(12) Appends /AD to the terms created by SELECT.
(13) Appends /AP to the terms created by SELECT.
(14) Enter SET PATENT DERWENT at an arrow prompt to SELECT or ANALYZE patent, application, and priority numbers in Derwent format.
(15) Appends /APPS to the terms created by SELECT.
(16) Appends /AY to the terms created by SELECT.
(17) Appends /PCS to the terms created by SELECT.
(18) Appends /PC to the terms created by SELECT.
(19) Appends /CY.CNT to the terms created by SELECT.
(20) Appends /PN to the terms created by SELECT.
(21) Appends /PK to the terms created by SELECT.
(22) Appends /PATS to the terms created by SELECT.
(23) Appends /PN to the terms created by SELECT.
(24) Appends /PN.CNT to the terms created by SELECT.
(25) Appends /PRC to the terms created by SELECT.
(26) Appends /PRD to the terms created by SELECT.
(27) Appends /PRN to the terms created by SELECT.
(28) Appends /PRY to the terms created by SELECT.
(29) Appends /PD to the terms created by SELECT.
(30) Appends /PY to the terms created by SELECT.
(31) Selects or analyzes CODEN and the ISSN and appends /SO to the terms created by SELECT.
(32) Appends /DT to the terms created by SELECT.

Sample Records

DISPLAY ALL (Journal)

```
ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2013 ACS on STN
AN   2000:138202  CAPLUS  Full-text
DN   132:221385
ED   Entered STN:  01 Mar 2000
TI   Production process for recombinant human angiostatin in Pichia pastoris
AU   Lin, J.; Panigraphy, D.; Trinh, L. B.; Folkman, J.; Shiloach, J.
CS   Department of Surgery, Children's Hospital and Harvard Medical School,
     Boston, MA, 02115, USA
SO   Journal of Industrial Microbiology & Biotechnology (2000), 24(1), 31-35
     CODEN: JIMBFL; ISSN: 1367-5435
DOI  10.1038/sj.jim.2900766
PB   Nature Publishing Group
DT   Journal
LA   English
CC   16-2 (Fermentation and Bioindustrial Chemistry)
AB   A pilot-scale production method of recombinant human angiostatin, a 38-kD fragment
of plasminogen which has been reported to have antiangiogenic activity, has been
successfully established by expressing the protein in the methylotrophic yeast Pichia
pastoris.  The secreted protein inhibited cultured endothelial cell proliferation in
vitro and Lewis lung carcinoma growth in mice.  The fermentation process was carried out
using an online methanol controller, administering methanol to the growing culture and
keeping its concentration under 2 g L-1.  The fermentation lasted 90 h, of which 70 h
were growth on methanol.  During growth on methanol the culture volume increased 64%,
from 7 L to 11.5 L, producing 200 mg angiostatin and 5 kg of biomass.
ST   recombinant human angiostatin fermn Pichia
IT   Fermentation
     Komagataella pastoris
        (production process for recombinant human angiostatin in Pichia pastoris)
IT   86090-08-6P, Angiostatin
     RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP
     (Preparation)
        (production process for recombinant human angiostatin in Pichia pastoris)
IT   67-56-1, Methanol, biological studies
     RL: BSU (Biological study, unclassified); BIOL (Biological study)
        (production process for recombinant human angiostatin in Pichia pastoris)
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
RE.CNT  18    THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE   CITED REFERENCES
(1) Brierley, R; Ann NY Acad Sci 1990, V589, P350 CAPLUS
(2) Brierley, R; WO 9003431 International Patent (PCT) Application 1989 CAPLUS
(3) Chen, Y; Proc Biochem 1997, V32, P107
(4) Folkman, J; Proc Natl Acad Sci 1979, V76, P5217 MEDLINE
(5) Guarna, M; Biotechnol Bioeng 1997, V56, P279 CAPLUS
(6) Holmgren, L; Nature Med 1995, V1, P149 CAPLUS
(7) Hsiao, J; Ann NY Acad Sci 1992, V665, P320 CAPLUS
(8) Invitrogen Corp; A Manual of Methods of Expression of Recombinant Proteins
    in Pichia pastoris 1998
(9) Loewen, M; Appl Microbiol Biotechnol 1997, V48, P480 CAPLUS
(10) Mateles, R; Biotechnol Bioeng 1971, V13, P581 CAPLUS
(11) O'Reilly, M; Cell 1994, V79, P315 CAPLUS
(12) Romanos, M; Curr Opin Biotechnol 1995, V6, P527 CAPLUS
(13) Sim, B; Cancer Res 1977, V57, P1329
(14) Sreekrishna, K; Gene 1997, V190, P55 CAPLUS
(15) Sukhatme, P; WO 9929878 International Patent (PCT) application 1999 CAPLUS
(16) Tschopp, J; Nucleic Acid Res 1987, V15, P3859 CAPLUS
(17) Wagner, L; Biotechnol Techniques 1997, V11, P791 CAPLUS
(18) Weidner, N; New Engl J Med 1991, V324, P1 MEDLINE
```

DISPLAY ALL (7CI PATENT RECORD)

ANSWER 1 OF 1 CAPLUS COPYRIGHT 2013 ACS on STN
AN 1966:499665 CAPLUS Full-text
DN 65:99665
OREF 65:18683h,18684a-b
ED Entered STN: 22 Apr 2001
TI Adamantyl compounds
PA Eli Lilly & Co.
SO 8 pp.
DT Patent
LA Unavailable
CC 44 (Amino Acids, Peptides, and Proteins)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 6600403		19660722	NL 1966-403	19660112
PRAI	US		19650121		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
NL 6600403	IPCI	C07C
	IPCR	C07C0069-96 [I]; C07C0271-34 [I]; C07D0207-16 [I]; C07K0001-06 [I]
	CPCI	C07C0271-34 [I]; C07C2103-74; C07D0207-16 [I]; C07K0001-063 [I]; C07K0001-064 [I]

AB New adamantyloxycarbonyl derivs. (I) of α-amino acids were prepared I includes derivs. of naturally occurring α-amino acids and is a suitable blocking group in synthesis of peptides, penicillins, or cephalosporins. This blocking group can be removed with F3CCO2H, anhydrous HCl, or by other known methods. Thus, to 20 g. COCl2 in 100 ml. anhydrous C6H6, a mixture of 8 g. 1-hydroxyadamantane, 6 g. pyridine, and 200 ml. ether was added dropwise at .apprx.20° during 1 hr. to give 1-adamantyl chloroformate, m. 46-7°. Similarly, 3,5-dimethyl-1-hydroxyadamantyl chloroformate, m. .apprx.5-10°, and 3-hydroxyhomoadamantyl chloroformate, m. .apprx.0°, were prepared To 151 mg. D-phenylglycine in 2 ml. H2O and 1.2 ml. N NaOH, a solution of 225 mg. 1-adamantyl chloroformate in 2.5 ml. dioxane and 1 ml. ether was added in 5 portions during 40 min. After addition of 1 ml. N NaOH, the reaction mixture was extracted with ether, acidified with 85% H3PO4 to pH 4.5, and extracted with ether to give N-(1-adamantyloxycarbonyl)-D-phenylglycine, m. 119-20°. Also prepared was the glycine analog, m. 141-2.5°.

IT Lactones
(aza)

IT 1195136-23-2P 1195644-85-9P
RL: SPN (Synthetic preparation); PRP (Properties); PREP (Preparation)
(Adamantyl compounds)

IT 7781-05-7 13525-71-8 92906-69-9 93009-71-3
(Derived from data in the 7th Collective Formula Index (1962-1966))

IT 768-95-6P, 1-Adamantanol, chloroformate and N-esters with N-carboxyglycine and D-N-carboxy-2-phenylglycine 776-99-8P, 2-Propanone, (3,4-dimethoxyphenyl)- 5854-52-4P, Formic acid, chloro-, 1-adamantyl ester 5854-56-8P, Glycine, N-carboxy-, N-1-adamantyl ester 5854-63-7P, Glycine, N-carboxy-2-phenyl-, N-1-adamantyl ester, D- 10144-56-6P, 1-Adamantanol, 3,5-dimethyl-, chloroformate 10144-78-2P, 1-Adamantanol, 3-methyl-, chloroformate 10177-46-5P, Formic acid, chloro-, tricyclo[4.3.1.13,8]undec-3-yl ester
RL: PREP (Preparation)
(preparation of)

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2016 ACS on STN
PatentPak PDF | PatentPak PDF+ | PatentPak Interactive | Full Text
AN **2015:758868** CAPLUS
DN 162:591100
ED Entered STN: 05 May 2015
TI Method of jetting ink
IN Breton, Marcel Philippe; Belelie, Jennifer L.; Goredema, Adela; Smith, Paul F.
PA Xerox Corporation, USA
SO U.S., 31pp.
CODEN: USXXAM
DT Patent
LA English
CLMN 18
CC 42-2 (Coatings, Inks, and Related Products)
Section cross-reference(s): 74
FAN.CNT 1
PPPI

PATENT NO.	KIND	DATE	LANGUAGE	PatentPak
US 9022546	B1	20150505	English	PDF | PDF+ | Interactive
US 20150145920	A1	20150528	English	PDF
DE 102014223318	A1	20150528	German	PDF
JP 2015101103	A	20150604	Japanese	PDF

PI

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 9022546	B1	20150505	US 2013-14089479	20131125
US 20150145920	A1	20150528		
DE 102014223318	A1	20150528	DE 2014-102014223318	20141114
CA 2871394	A1	20150525	CA 2014-2871394	20141117
JP 2015101103	A	20150604	JP 2014-232596	20141117
PRAI US 2013-14089479	A	20131125		

PSPI

PATENT NO.	KIND	STATUS	STATUS DATE
US 9022546	B1	Alive	20201120
US 20150145920	A1	Alive	20201121
DE 102014223318	A1	Alive	20201120
CA 2871394	A1	Alive	20201121
CA 2871394	C	Alive	20201121
JP 2015101103	A	Alive	20201121

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 9022546	INCL	347102000
	IPCI	B41J0002-01 [I]; B41J0011-00 [I]; B41J0011-00 [I]
	IPCR	B41J0002-01 [I]; B41J0011-00 [I]
	CPCI	B41J0002-0057 [I]; B41M0005-0256 [I]; B41M0005-0356 [I]
	NCL	347/102.000; 347/020.000
DE 102014223318	IPCI	B41M0001-42 [I]; B41M0001-20 [I]; C09D0011-30 [I]
	IPCR	B41M0001-42 [I]; B41M0001-20 [I]; C09D0011-30 [I]
	CPCI	B41J0002-0057 [I]; B41M0005-0256 [I]; B41M0005-0356 [I]
CA 2871394	IPCI	B41J0002-04 [I]; C09D0011-30 [I]
	IPCR	B41J0002-04 [I]; C09D0011-30 [I]
	CPCI	B41J0002-0057 [I]; B41M0005-0256 [I]; B41M0005-0356 [I]
JP 2015101103	IPCI	B41M0005-00 [I]; C09D0011-30 [I]; B41J0002-01 [I]
	IPCR	B41M0005-00 [I]; B41J0002-01 [I]; C09D0011-30 [I]
	CPCI	B41J0002-0057 [I]; B41M0005-0256 [I]; B41M0005-0356 [I]

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
OS CASREACT 162:591100
AB An indirect printing process for printing a gel ink is described. The process comprises providing a gel ink compn. in an ink-jet printing app.

Droplets of gel ink are ejected in an imagewise pattern onto an intermediate transfer member, where each ink droplet forms a substantially circular image on the transfer member. The ink droplets are gelled and dried or solidified to form a substantially dry ink pattern on the intermediate transfer member. The substantially dry ink pattern is transferred from the intermediate transfer member to a final substrate.

ST photocurable jet printing gel ink

IT Ink-jet printing
Inks
(indirect printing of gel inks dropwise onto an intermediate transfer member)

IT Inks
(jet-printing, hot-melt; indirect printing of gel inks dropwise onto an intermediate transfer member)

IT Inks
(jet-printing, photocurable; indirect printing of gel inks dropwise onto an intermediate transfer member)

IT Polyesters
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(latex; indirect printing of gel inks dropwise onto an intermediate transfer member)

IT Polyesters
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(sulfonated, latex; indirect printing of gel inks dropwise onto an intermediate transfer member)

IT 445378-05-2, Ethylenediamine-Pripol 1009 copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(gellant; indirect printing of gel inks dropwise onto an intermediate transfer member)

IT 1413974-93-2P, SR 399LV-SR 833S-UNILIN 350 acrylate copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(indirect printing of gel inks dropwise onto an intermediate transfer member)

IT 261949-00-2P, UNILIN 350 acrylate
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(indirect printing of gel inks dropwise onto an intermediate transfer member)

IT 9003-53-6D, Polystyrene, sulfonated, sodium salt 72414-06-3, **Voranol 370**
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(indirect printing of gel inks dropwise onto an intermediate transfer member)

IT 79-10-7, Acrylic acid, reactions 122-99-6, 2-Phenoxyethanol 165169-28-8, Unilin 350
RL: RCT (Reactant); RACT (Reactant or reagent)
(indirect printing of gel inks dropwise onto an intermediate transfer member)

IT 25767-47-9P, Styrene-Butyl Acrylate copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(latex; indirect printing of gel inks dropwise onto an intermediate transfer member)

IT 2177-70-0D, Phenyl Methacrylate, terpolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(latex; indirect printing of gel inks dropwise onto an intermediate transfer member)

PPAK
445378-05-2, Ethylenediamine-Pripol 1009 copolymer, Pg 28
1413974-93-2P, SR 399LV-SR 833S-UNILIN 350 acrylate copolymer, Pg 31

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     261949-00-2P, UNILIN 350 acrylate, Pg 30
     9003-53-6D, Polystyrene, Pg 28
     72414-06-3, Voranol 370, Pg 26
     79-10-7, Acrylic acid, Pg 30
     122-99-6, 2-Phenoxyethanol, Pg 29
     165169-28-8, Unilin 350, Pg 30
     25767-47-9P, Styrene-Butyl Acrylate copolymer, Pg 27
     2177-70-0D, Phenyl Methacrylate, Pg 26
RE.CNT  31    THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE   CITED REFERENCES
(1) Anon; "Dimer Acids," Kirk-Othmer Encyclopedia of Chemical Technology, vol
    8, 4th Ed (1992), pp 223-237 1992
(2) Anon; Eliyahu et al, "Inkjet Ink Containing Polystyrene-Co-Butyl Acrylate
    Latex Suitable for Indirect Printing Method", U.S Appl No 14/067,469, filed
    Oct 30, 2013, 23 Pages 2013
(3) Anon; Eliyahu et al, "Inkjet Ink for Indirect Printing Applications", U.S
    Appl No 14/066,716, filed Oct 30, 2013, 37 Pages 2013
(4) Anon; Jikei et al "Synthesis and Properties of Hyperbranched Aromatic
    Polyamide Copolymers from AB and AB2 Monomers by Direct Polycondensation",
    Macromolecules 2000, 33, pp 6228-6234 (2000) 2000
(5) Bedford; US 7767011 B2 2010 CAPLUS
(6) Belelie; US 8142557 B2 2012 CAPLUS
(7) Breton; US 7172276 B2 2007 CAPLUS
(8) Breton; US 7202883 B2 2007 CAPLUS
(9) Duff; US 5385803 A 1995 CAPLUS
(10) Gervasi; US 8268399 B2 2012 CAPLUS
(11) Goodbrand; US 5208630 A 1993 CAPLUS
(12) Jaeger; US 5621022 A 1997 CAPLUS
(13) Katsen; US 5539038 A 1996 CAPLUS
(14) Keoshkerian; US 6156858 A 2000 CAPLUS
(15) King; US 6221137 B1 2001 CAPLUS
(16) LaMora; US 5202265 A 1993
(17) Larson; US 8350879 B2 2013 CAPLUS
(18) Machell; US 5231135 A 1993 CAPLUS
(19) Morrison; US 5543177 A 1996
(20) Mychajlowskij; US 5945245 A 1999 CAPLUS
(21) Patel; US 5554480 A 1996 CAPLUS
(22) Sacripante; US 5593807 A 1997
(23) VanDusen; US 5146087 A 1992
(24) Winnick; US 5286286 A 1994 CAPLUS
(25) Winnik; US 5145518 A 1992 CAPLUS
(26) Winnik; US 5256193 A 1993 CAPLUS
(27) Winnik; US 5271764 A 1993 CAPLUS
(28) Winnik; US 5275647 A 1994 CAPLUS
(29) Winnik; US 5378574 A 1995 CAPLUS
(30) Wright; US 5225900 A 1993
(31) Wright; US 5301044 A 1994
PPAK
     72414-06-3, Voranol 370, Pg 26
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DISPLAY OSG

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ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2013 ACS on STN
OSC.G   10    THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (22 CITINGS)
UPOS.G  Date last citing reference entered STN:  08 May 2012
OS.G   CAPLUS 2012:562677; 2011:720785; 2011:145582; 2010:1528889;
              2010:1345624; 2010:564089; 2010:305677; 2009:1367821;
              2009:425398; 2009:233307
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DISPLAY IPC.TAB

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ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2013 ACS on STN

PI   WO 2007081680
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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
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DISPLAY CPC.TAB

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PI   WO 2007081680

CPCI CODE        VERSION    POS INV CC ASSIGNMENT   DATE   STAT
---------------- ---------- --- --- -- ---------- -------- ----
G01N0033-57438  (20130101)      I  EP Human      20130101  O
A61N0001-30     (20130101)      A  EP Human      20130101  O
C12Q0001-6886   (20130101)      I  EP Human      20130101  O
C12Q2600-106    (20130101)      A  EP Human      20130101  O
C12Q2600-136    (20130101)      A  EP Human      20130101  O
C12Q2600-178    (20130101)      A  EP Human      20130101  O

PI   AU 2007205257

CPCI CODE        VERSION    POS INV CC ASSIGNMENT   DATE   STAT
---------------- ---------- --- --- -- ---------- -------- ----
G01N0033-57438  (20130101)      I  EP Human      20130101  O
A61N0001-30     (20130101)      A  EP Human      20130101  O
C12Q0001-6886   (20130101)      I  EP Human      20130101  O
C12Q2600-106    (20130101)      A  EP Human      20130101  O
C12Q2600-136    (20130101)      A  EP Human      20130101  O
C12Q2600-178    (20130101)      A  EP Human      20130101  O

PI   CA 2635616
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DISPLAY ALL (PRE-1907 JOURNAL RECORD)

```
ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2013 ACS on STN
AN   1906:419  CAPLUS  Full-text
DN   0:419
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
   • • •
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 /IPC Thesaurus

```
=> E H01J0001-304/IPC

E#   FREQUENCY    AT     TERM
--   ---------    --     ----
E1         370     2     H01J0001-28/IPC
E2        4099     6     H01J0001-30/IPC
E3        3547     2 --> H01J0001-304/IPC
E4           1           H01J0001-307/IPC
E5         161     2     H01J0001-308/IPC
E6         479     2     H01J0001-312/IPC
E7         667     2     H01J0001-316/IPC
E8         193     2     H01J0001-32/IPC
E9         388     2     H01J0001-34/IPC
E10         37     2     H01J0001-35/IPC
E11         37     6     H01J0001-36/IPC
E12         75     2     H01J0001-38/IPC

=> E E3+HIE

E13          0   BT6   H0/IPC
E14          0   BT5   H01/IPC
                       BASIC ELECTRIC ELEMENTS
E15     116658   BT4   H01J/IPC
                       ELECTRIC DISCHARGE TUBES OR DISCHARGE LAMPS (spark-gaps
                       H01T; arc lamps with consumable electrodes H05B;
                       particle accelerators H05H)
E16        862   BT3   H01J0001-00/IPC
                       Details of electrodes, of magnetic control means, of
                       screens, or of the mounting or spacing thereof, common
```

```
                      to two or more basic types of discharge tubes or lamps
                      (details of electron-optical arrangements or of ion
                      traps H01J0003-00)
                      CORE
                      VALID FROM 19680901 TO PRESENT   (  IPC EDITION: 1-8  )
E17        811   BT2  H01J0001-02/IPC
                      . Main electrodes
                      ADVANCED
                      VALID FROM 19680901 TO PRESENT   (  IPC EDITION: 1-8  )
E18       4099   BT1  H01J0001-30/IPC
                      . . Cold cathodes
                      ADVANCED
                      VALID FROM 19680901 TO PRESENT   (  IPC EDITION: 1-8  )
E19       3547   -->  H01J0001-304/IPC
                      . . . Field-emissive cathodes
                      ADVANCED
                      VALID FROM 20000101 TO PRESENT   (  IPC EDITION: 7-8  )
********** END **********
```

EXPAND in the /RL Thesaurus

=> E PREP+ALL/RL

```
E1     5638617   -->  PREP/RL
E2     5638617        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       94007     NT1  BMF/RL
E4      210351     NT1  BPN/RL
E5       73798     NT1  BYP/RL
E6        3186     NT1  CPN/RL
E7      805134     NT1  IMF/RL
E8      173908     NT1  PNU/RL
E9      429501     NT1  PUR/RL
E10    2721882     NT1  SPN/RL
********** END **********
```

EXPAND in the /CT Thesaurus for the CA Lexicon

=> E AZO DYES+ALL/CT

```
E3       14709   BT3  Chemical compounds/CT
E4       60638     BT2  Organic compounds/CT
E5        5686       BT1  Azo compounds/CT
E6       32236   BT3  Materials/CT
E7       13098     BT2  Coloring materials/CT
E8      137066       BT1  Dyes/CT
E9       10058         -->  Azo dyes/CT
                         HNTE Valid heading during volume 126 (1997) to
                              present.
E10      12084           OLD  Dyes, azo/CT
E11                      UF   Azo dye/CT
E12                      UF   Azodye/CT
E13                      UF   Azodyes/CT
E14          0           NT1  1-(Phenylazo)-2-naphthol/CT
E15          0           NT1  4-(Dimethylamino)azobenzene/CT
E16          0           NT1  4-Amino-4'-nitroazobenzene/CT
E17          0           NT1  4-Aminoazobenzene/CT
E18          0           NT1  Amaranth (dye)/CT
E19          0           NT1  C.I. Acid Red 14/CT
E20          0           NT1  Carmine 6B/CT
E21          0           NT1  Congo red/CT
E22          0           NT1  Disperse Red 1/CT
E23          0           NT1  Eriochrome Black T/CT
E24          0           NT1  Methyl orange/CT
E25          0           NT1  Methyl red/CT
E26          0           NT1  New Coccine/CT
E27          0           NT1  Pigment Yellow 12/CT
E28          0           NT1  Pigment Yellow 128/CT
E29       1058           NT1  Reactive azo dyes/CT
E30          0             NT2  4-(2-Sulfatoethylsulfonyl)aniline/CT
E31          0           NT1  Sunset Yellow/CT
E32          0           NT1  Tartrazine/CT
E33          0           NT1  Trypan blue/CT
E34        264           RT   Formazans/CT
E35      45192           RT   Pigments, nonbiological/CT
E36        678           RT   Stains, coloring materials/CT
E37                      RTCS 2,5-Dimethoxyaniline/CT
E38                      RTCS 4-Phenylazophenol/CT
********** END **********
```

EXPAND in the CA Section Thesaurus (/CC)

```
=> E CERAMICS+ALL/CC

E1      517254   -->  CERAMICS/CC
E2        1860     USE  17 CERAMICS, 1962 ONLY/CC
E3        9758     USE  21 CERAMICS, 1963-1966/CC
E4      500466     USE  57 CERAMICS, 1967 TO PRESENT/CC
********** END **********

=> E E4+ALL

E5     7707105   BT1  APPLIED/CC
E6      500466     -->  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 the Company Name (/CO) Thesaurus Search Aid

```
=> E DOW CHEMICAL+NAME/CO

E1       17210     NAME DOW CHEMICAL CO/CO
E2         114   -->  DOW CHEMICAL/CO
********** END **********


=> E E1+ALL

E3           0     CNUM CAS1000235/CO
E4       17210   -->  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 Sentrrachem 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           79     RT1  AGRIGENETICS INC/CO
E9           14     RT1  AGRIGENETICS RESEARCH ASSOCIATES LTD/CO
```

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E10          18     RT1  AMERCHOL CORP/CO
E11          20     RT1  AMERCHOL CORPORATION/CO
E12           9     RT1  ANGUS CHEM CO/CO
E13          36     RT1  ANGUS CHEMICAL CO/CO
E14          74     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          66     RT1  BUNA SOW LEUNA OLEFINVERBUND G M B H/CO
E20          53     RT1  BUNA SOW LEUNA OLEFINVERBUND GMBH/CO
E21          68     RT1  BUSHY RUN RES CENT/CO
E22          11     RT1  CARBIDE AND CARBON CHEM CO/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         17     RT1  WOLFF CELLULOSICS GMBH CO KG/CO
E334        242     RT1  WOLFF WALSRODE A G/CO
E335        118     RT1  WOLFF WALSRODE AG/CO
E336         22     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         14     RT1  ZHEJIANG OMEX ENVIRONMENTAL ENGINEERING LTD/CO
********** END **********
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