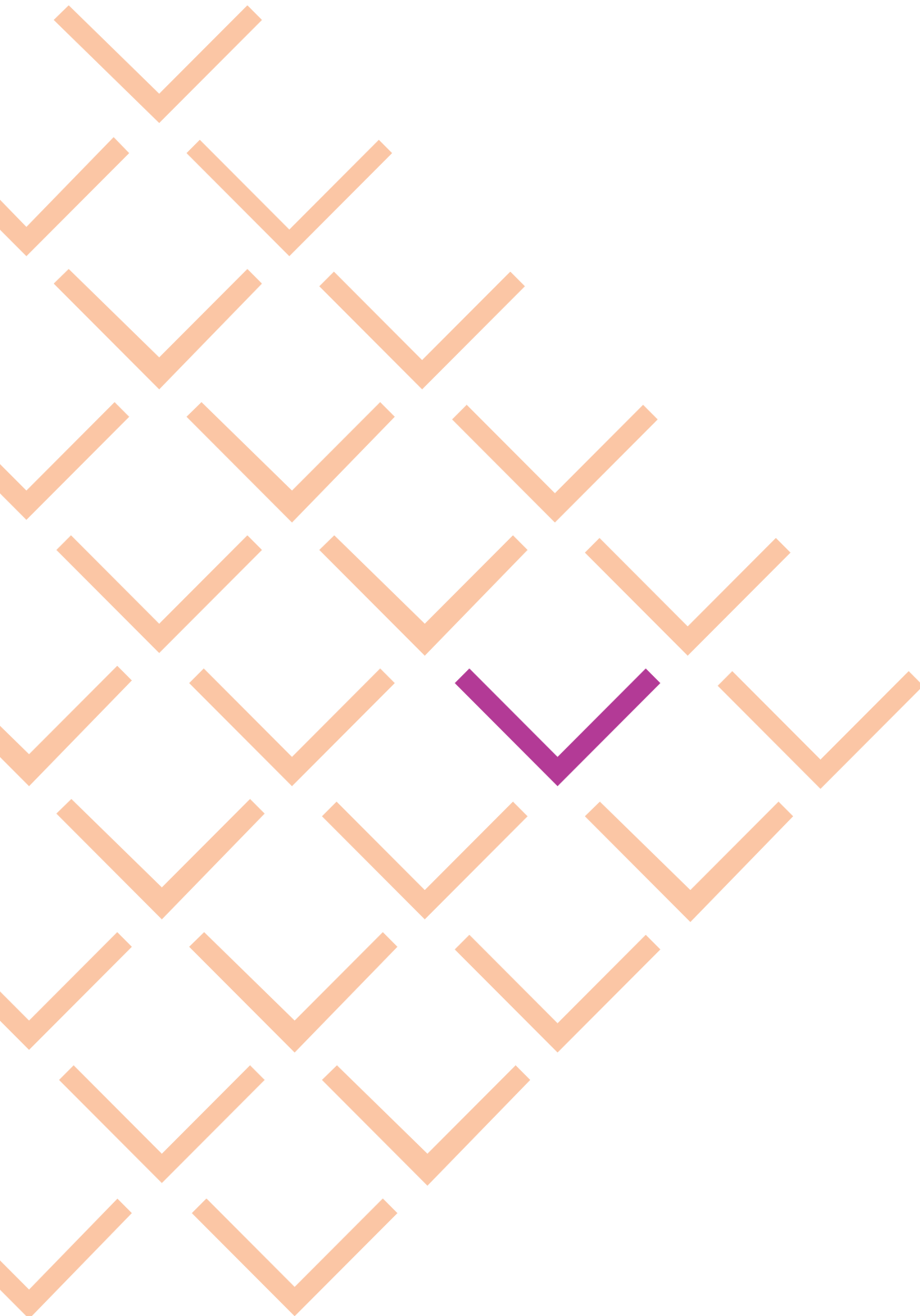




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# Patent Information from CAS



# **Patent Information from Chemical Abstracts Service**

## **Coverage and Content**

Chemical Abstracts Service

A Division of the American Chemical Society  
2540 Olentangy River Road  
P.O. Box 3012  
Columbus, Ohio 43210

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## INTRODUCTION

Chemical Abstracts Service (CAS) has covered patents since the first issue of *Chemical Abstracts* (CA) was published in 1907. The first issue of CA contained 181 patent abstracts, and patent abstracts made up over 30% of all the abstracts published in Volume 1 of CA.

Since 1907 CAS has abstracted and indexed over 3.3 million patent documents from all over the world in all areas of chemistry and chemical engineering. More than 2.6 million patents abstracted since 1967 are available online.

For the past few years CAS has been adding almost 120,000 new abstracts for patents every year. Patent abstracts now comprise 17 to 18% of the 700,000 abstracts published in CA annually.

The purpose of this documentation is to clarify procedures and guidelines for the selection of patent documents for the CAS database and to describe the content of the database. This documentation includes extensive discussion of the guidelines for preparation of abstracts and for indexing the specific compounds and general subject matter of patent documents. The discussion of the abstracting and indexing guidelines is based on documentation for CAS patent document analysts. Unless otherwise indicated, currently used guidelines and procedures are described. Also, only general indexing guidelines are described rather than subject specific guidelines for indexing in various areas of chemistry and chemical engineering.

Finally, this documentation makes no attempt to teach the searching of either the indexes to printed CA or the CAS online database. Its aim is only to provide information on the coverage and content of patent documents in the CAS database. Instructional materials and workshops on searching printed CA or CAS files are available from Chemical Abstracts Service.

If you have comments or suggestions related to the content of this documentation or the guidelines for the selection, coverage or indexing of patent documents by CAS, please direct them to:

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## PATENT SELECTION

### Overview

There are four main steps in the process of patent selection by CAS. The first three steps depend on a computerized system for the selection of patents from a computer tape supplied every week by the International Patent Documentation Center (INPADOC). The tape contains bibliographic records for the most recently published patent documents from the countries covered by INPADOC. In the first two steps, chemical patents are selected from the countries covered by CAS. Then a determination is made to see if the record selected already has a patent family member that has been abstracted by CAS. If a record belongs to a family that has a previously abstracted member, the record is termed an "equivalent," and the entire family, along with the abstract citation, is cited in the weekly issued Patent Index. If the record does not have a family member that has already been abstracted, it is termed a CA "basic," that is, the family member first received by CAS. Only the basic patent documents are obtained for abstracting and indexing. In the final step, each of these patents is examined by a technical specialist who decides if the patent is suitable for inclusion in CA.

### Selection by Country

The first step in patent selection is to select, from the countries covered on the INPADOC weekly tape, those records that correspond to the countries and two international organizations currently included in CA. Table I lists countries from which patent documents are currently selected. For some of the countries on the list abstracts are prepared for patent documents assigned only to individuals or organizations from the granting country. All equivalent patents issued by any of the patent offices covered by CAS, are cited in the Patent Index regardless of the nationality of the inventors. For example, a Finnish patent document is abstracted and indexed when it is issued to a Finnish company or an individual residing in Finland. However, if a United States company files a patent application in Finland, the resulting patent citation will be included in the Patent Index as part of the family listing for this invention.

Australia	Great Britain	Romania
Austria	Hungary*	Russia
Belgium	India	Slovakia*
Brazil	Israel	South Africa
Canada	Japan	Spain*
China, People's Republic of	Korea, Republic of	Sweden*
Czech Republic*	Latvia*	Switzerland
Denmark*	Lithuania*	United States
Germany	Netherlands	European Patent Application
Finland*	Norway*	Patent Cooperation Treaty
France	Poland*	(International) Application

\* Only patent documents assigned to residents (nationals) of these countries are abstracted

**Table I.** CA patent coverage by country

## Selection of Kind of Document

The next step after selection by country is to select various “kinds of documents,” for example, unexamined and examined applications and granted patents. With the exception of some utility models, most of the kinds of patent documents on the INPADOC tape are selected. Selection is done on the basis of the World Intellectual Property Organization’s Kind of Document code.

CAS is currently selecting over 100 different kinds of patent documents from the INPADOC tape. The Appendix includes a table with a complete list of patent kind codes used in the selection process. These patent documents may be either abstracted or listed as part of patent families. For example, let’s take a case of a country such as Japan that issues more than one series of patent documents such as unexamined and examined applications. If an unexamined application for an invention is selected as a CA “basic,” CAS would abstract that document. When the record for the examined application for the same invention is subsequently selected from the INPADOC tape, this document will not be abstracted but it will be referenced in the Patent Index to its predecessor, the unexamined application. Table II lists the types of patent documents from each country that are currently abstracted and indexed by CAS. Patent kind codes are defined in the Appendix table listing the patent kind codes used in the selection process.

Code	Country	Unexamined application	Examined application	Granted patent
AT	Austria			B
AU	Australia		B1, B2	B3
BE	Belgium			A, A1-A9
BR	Brazil	A		
CA	Canada	AA		A, A1, A2, B
CH	Switzerland		A3	A, B
CN	China	A		
CZ	Czech Republic			B6
DE	Germany	A1		C1
DK	Denmark		B, B1	
EP	European Patent Organization	A1, A2		
ES	Spain			A1-A4, A6
FI	Finland		B	
FR	France	A1-A4, A, A5-A8		
GB	United Kingdom	A, A1		
HU	Hungary	A, A1	A2, O	
IL	Israel	A1		
IN	India		A	
JP	Japan	A2	B1	
KR	Korea, Republic of		B1	
LT	Lithuania			B
LV	Latvia			B
NL	Netherlands	A, A1		
NO	Norway		B	
PL	Poland			B1-B4
RO	Romania			B1-B4
RU	Russia			C1, C2
SE	Sweden		B	C2
SK	Slovakia			B6
US	United States	A0		A, H1
WO	WIPO	A1, A2		
ZA	South Africa	A, A1		

**Table II.** Patent documents currently (2000) abstracted by CAS

## **Selection by International Patent Classification**

Next patent documents with possible chemical or chemical engineering content are selected by computer on the basis of the International Patent Classification (IPC) system, a hierarchical system that classifies technology into successively smaller and more specialized subject areas. The CAS patent processing system automatically selects those patent documents that have at least one IPC code that indicates a possibility or high probability of chemical content. Since January 1996, all chemical patents that are assigned any of the guaranteed IPC codes, are covered without exception. Additional patents are selected for coverage from selective IPCs. The IPC codes used for the selection of patent documents by CAS are included in the Appendix.

## **Identification of Patent Families**

Computer-based processing of CAS and INPADOC data also affords fast and thorough identification of patent families. All application and priority numbers (the number of the first application filed on a given invention) for newly received patent records are compared with the application and priority numbers of the patent records currently residing in the CAS patent database. If no match is found on these numbers, the patent is considered a basic and is acquired for abstracting. If a match is found, the computer further checks to see if the application or priority date and the first three letters of the corporate name are identical before the patent is determined to be an equivalent.

Patent families for abstracted documents are listed in the printed Patent Index. They are also available online.

## **Examination by Patent Document Analysts**

Copies of those patent documents that have been identified as basics are obtained for further review. The only exception is for patent documents from Russia for which only the title is translated from *Izobreteniya, Poleznye Modeli*.

CAS patent document analysts examine each patent document to determine if its content fits the criteria for coverage in CA. CAS defines chemistry very broadly to include all compositions and structures of matter, the changes matter undergoes, and the theories and laws that govern these compositions, structures, and changes. Chemical engineering includes the development and application of manufacturing processes and tools, apparatus, and equipment used by the chemical engineer. The criteria of coverage for all types of documents, including patents, are described in the *Subject Coverage and Arrangement of Abstracts by Sections in Chemical Abstracts*.

## **Domestically-Related Patent Documents**

Domestically-related patent documents include such documents as divisions, continuations and continuations-in-part. CAS abstracts those documents that contain new technical material.



Continuation applications for U.S. patents, reissued U.S. patents, and amended British patents prior to 1977 are treated by CAS as patents equivalent to their predecessors. These patent documents are deemed not to contain new technical information since the disclosure is substantially unchanged from the disclosure of the original application. If there is no previous document to which they can be made equivalent, i.e., they are the first member of the family to be encountered by CAS, they are abstracted.

U.S. continuation-in-part patents issued since 1994 are fully covered. Prior to 1994, U.S. continuation-in-part patents were reviewed to determine if they contained new information and only those documents found to contain new information were abstracted.

All addition patents are reviewed to determine if they contain new information, and only those found to contain new information are abstracted.

Divisions from Great Britain, Japan, the Netherlands, South Africa, and the United States are made equivalent to the parent document since they do not contain new technical information. Division patents from Austria, Canada, France, and Switzerland are reviewed to determine if they contain new chemical information. In general, only 8% of the divisions from these four countries are found to have sufficient new chemical information to be abstracted. If a division patent is received by CAS before its parent application, the division patent is abstracted and indexed.

The division, continuation, and reissue patents that contain no new technical information have been processed by CAS as equivalents since 1978.

## **History of Patent Coverage by CAS**

The Appendix contains tables summarizing CAS patent coverage by country and type of patent document from 1907 to 1966 and from 1967 to the present.

From its beginning in 1907, CA included abstracts of chemical and chemical engineering patents issued to both “nationals” (resident assignees or inventors) and “nonnationals” by France, Great Britain, the United States, and Germany, which were the major patent-issuing nations of the time. Between 1910 and the mid-1960s, coverage was gradually extended to patents issued by 20 other nations to their own nationals and to nationals of countries not already covered.

In the 1930s, CAS was encountering enough equivalent patents that the practice of abstracting only the first patent document received on a particular invention was adopted to avoid redundant abstracting of the same material. Subsequently received equivalent patent documents were covered in CA by printing only their title and other identifying information with a cross-reference to the abstract of the corresponding basic patent.

Major changes in patent issuing procedures in the 1960s and 1970s caused CAS to change its patent coverage practices. As a result of the accelerated pace of technology and development following World War II and the rapid growth of the practice of seeking protection for the same invention in more than one nation, patent offices of many of the highly industrialized nations were deluged with patent applications. Some simply took more time to examine and grant patents and became what are termed “slow-issuing” countries. Others, among them the Federal Republic of Germany, the Netherlands, and Japan, began to publish unexamined patent applications 18 months after the first application on a particular invention was

filed. Countries that adopted this “quick-publishing” practice also began to publish various stages of a patent as it made its way through the granting process, e.g., unexamined applications, examined applications, and granted patents. CAS’s patent coverage was expanded to include these new types of patent documents.

The late 1970s saw the appearance of multinational patent documents as the European Patent Convention and the Patent Cooperation Treaty (PCT) came into effect to reduce duplicate effort on the part of inventors in filing applications for patents in several nations and on the part of various national patent offices in examining and processing the applications. The European Patent Convention, which established the European Patent Office, set up a single procedure that can confer patent protection in various European countries. Under the PCT, administered by the World Intellectual Property Organization (WIPO), international offices carry out literature searches and patent examinations for many countries. The resulting international patent applications and search reports are published by WIPO, although the patent applicant remains responsible for filing the international application in each individual nation. CAS has covered patent documents issued by the PCT and the European Patent Convention since their initial publication in 1979.

Today CAS covers all chemical and chemical engineering patent documents issued by 19 countries and the 2 international intellectual property organizations, and patents issued by 11 other countries to their own residents (see Table I, p.2). Since 1980 equivalent patents have been cited in the Patent Index regardless of the nationality of the inventors.

In addition, research disclosures have been covered since 1974.

## **PATENT INDEX**

A numerical Patent Index first appeared in CA with the indexes to Volume 6 (1912). It continued for two more annual volumes until it ceased publication because of lack of funds. In 1935 it reappeared as part of the volume indexes. Beginning in 1958, the Numerical Patent Index was introduced into the semimonthly issues where it continued to be published until it was absorbed into an expanded Patent Index in 1981. The Numerical Patent Index listed all patents abstracted in CA by country and then sequentially by patent number and provided a reference to the CA abstract of the patent.

In 1963 the practice of printing a “title-only” abstract for an equivalent patent in the appropriate CA section was replaced by the introduction of the Patent Concordance. This index listed all new equivalent patents identified during the indexing period and linked them to all earlier patents on the same invention and to the abstract of the basic patent in CA.

In January 1981, CAS introduced a new Patent Index that combined the content of the Numerical Patent Index and Patent Concordance and considerably expanded the identifying information presented for patents. The Patent Index, which appears in weekly CA issues, semiannual volume indexes, and five-year collective indexes, contains entries for both new patent documents abstracted during the indexing period and previously processed patents that are equivalent or related to patents already abstracted. The entry for each equivalent or related patent is cross-referred to the basic patent, and each time a new equivalent or related patent in a family is referenced, a complete listing of all patent documents in the family appears at the entry for the basic disclosure on the invention.

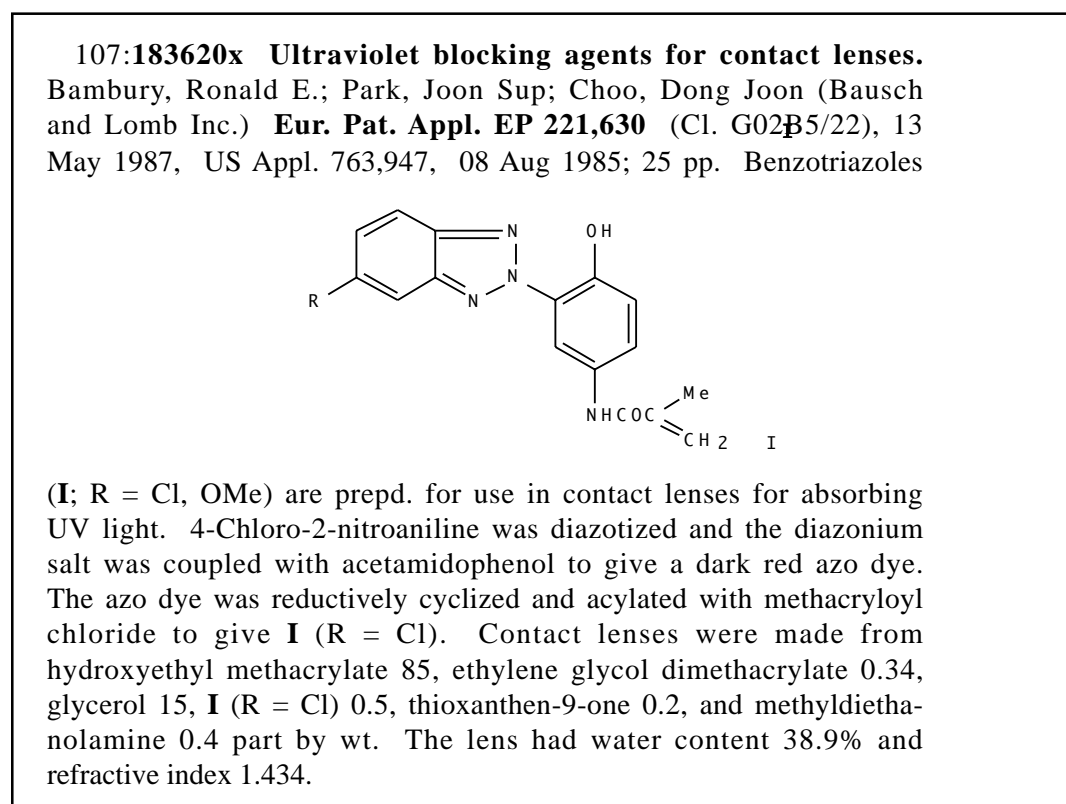
For more information, please refer to the introduction to the Patent Index.

## OVERVIEW OF PATENT INFORMATION FROM CAS

This section presents an overview of patent information available in printed CA followed by an overview of patent information available online in the CAS files on STN International. A more detailed discussion of CAS's processing of patents, with emphasis on the editorial guidelines for the preparation of abstracts and index entries, is presented in subsequent sections.

### Printed CA

Patent citations in printed CA issues consist of bibliographic data and abstracts, as Figure 2 illustrates.



**Figure 2.** Patent citation from printed CA

Access to patent citations in each issue of printed CA is provided by means of entries in the Keyword Index which is included at the back of each issue. Access is also provided through the semiannual volume indexes. The Chemical Substance Index contains entries at the CA index names for specific substances. The General Subject Index contains entries for the subject matter of patents such as classes of compounds, reactions, uses, applications, and properties of chemical substances, engineering and industrial apparatus and processes, and taxonomic terms. The Author Index provides access to inventor names and patent assignees. The Patent Index is the key to finding patent family information and abstracts for specific patents identified by the document number and country of publication.

## Online Access

CAS also provides online access to patents.

The CPlus file provides information for patent documents covered since 1967. Records for patent documents in the CPlus file contain bibliographic data, abstracts, and indexing terms. The most recent patents represent work-in-progress and might not have abstracts or complete indexing available online. Abstracts are available online from mid-1975 to the present. Most of the structure diagrams appearing with abstracts in printed CA are also available online. Structure diagrams can be displayed online on an appropriate graphics terminal. They also are available on offline prints.

The CAOLD file provides online access to over 152,000 patents covered in CA from 1957 through 1966. Searchable patent records in CAOLD contain only the CA reference number, an indication, P, if it is a patent, and CAS Registry Numbers. The CA reference number in the AN field points to the location of the abstract in printed CA. The reference number specifies the CA volume and column number followed by a letter for the location of the abstract in the column. In addition, page images for all abstracts in CAOLD may be viewed and printed using STN Express or a comparable software.

The MARPAT file on STN was created to provide online access to generic Markush structure from patents covered by CAS. Patents use Markush structures to represent sets of implied substances or classes of substances. Markush structures usually consist of a structure with some specific atoms and R groups that are further defined by other atoms, groups of atoms, generic groups or descriptive phrases for generic groups.

The MARPAT file contains the Markush structures from patents published since January 1, 1988 that are covered in CA. Patents from all countries covered by CA, except Russia, are included. At the present time the MARPAT file contains those Markush structures that are representations of organic or organometallic molecules. Alloys, metal oxides, inorganic salts, intermetallics, and polymers are not included at this time.

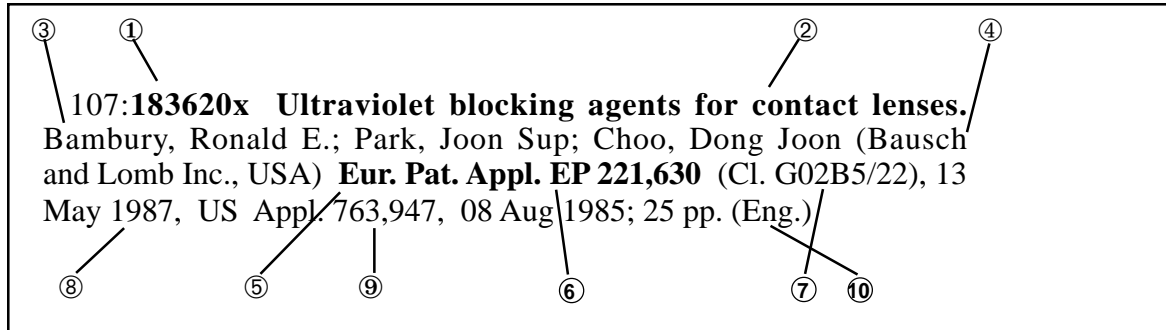
Markush structures from the claims are included. Markush structures found in the disclosure are indexed if there are no claimed structures or if the Markush structures in the disclosure are broader than those in the claims. The Markush structure is indexed regardless of whether specific substances from that patent are also indexed. If a patent document includes only a textual description of a generic class of compounds, a possible structural representation of those compounds is not constructed for inclusion in the MARPAT file.

The MARPATprev file on STN provides the most current online access to patents containing Markush structures. MARPATprev contains records representing work-in-progress. As soon as the indexing is completed for a citation in MARPATprev, that record is moved to the MARPAT File. MARPAT and MARPATprev are searchable by structures.

The following sections describe in detail the content of the bibliographic data, abstracts, and CAS indexing.

## BIBLIOGRAPHIC DATA

Figure 3 shows the patent bibliographic data that appear with an abstract in printed CA issues.



**Figure 3.** The bibliographic data for a patent document in printed CA.

- (1) CA volume and abstract number
- (2) Patent title
- (3) Names of the inventors. Up to 10 inventor names are included. If a patent document includes more than 10 inventors, the first 9 names are included, followed by et al.
- (4) Patent assignees
- (5) Abbreviation for the kind of patent document
- (6) Publication country code and the patent number
- (7) Main International Patent Classification (IPC). For U.S. patents, both the Main IPC and the first U.S. Patent Classifications are given.
- (8) Publication date
- (9) Priority application country, number, and date. When the country code is not present, the priority application was submitted in the country that published the patent document.
- (10) Language of patent document

Bibliographic information for patents in CA has been significantly expanded starting in 1962. The country and date of priority were added in 1962. The priority application number was added in 1972. Since 1963 U.S. Patent Classification Numbers have been included for U.S. patents, and IPC Numbers have been added to patent records when available. From 1964-1975, only the Section, Class, and Subclass were given for the IPCs. In 1976, Groups and Subgroups were added.

Figure 4 shows bibliographic information as it now appears online in the CAplus file. The indented format IBIB was used so that field definitions are included.

```

ACCESSION NUMBER:      1987:583620  CAPLUS
DOCUMENT NUMBER:      107:183620
TITLE:                Ultraviolet blocking agents for contact lenses.
INVENTOR(S):         Bambury, Ronald E.; Park, Joon Sup; Choo, Dong
                    Joon
PATENT ASSIGNEE(S):   Bausch and Lomb Inc., USA
SOURCE:              Eur. Pat. Appl., 25 pp.
                    CODEN: EPXXDW
DOCUMENT TYPE:       Patent
LANGUAGE:           English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

      PATENT NO.      KIND  DATE          APPLICATION NO.  DATE
      -----      -
      EP 221630      A2   19870513      EP 86-305782    19860728
      EP 221630      A3   19880727
      R:  BE, CH, DE, FR, GB, IT, LI, NL, SE
      CA 1286833      A1   19910723      CA 86-515035    19860731
      JP 62111230      A2   19870522      JP 86-185398    19860808
      PRIORITY APPLN. INFO.:      US 85-763947    19850808
  
```

**Figure 4.** Bibliographic and patent family information for a patent document online

Notice that the Patent Information field in the online record contains not only information for the basic patent, i.e., the patent document that has been abstracted and indexed by CAS, but also for other patent documents identified by CAS as part of a patent family. Patent family information is most complete since 1981, when the Patent Index was first issued. However, some earlier patent family information (from 1967) is also available.

The FAMILY ACC. NUM. COUNT field provides the number of CAplus accession numbers associated with a particular patent family. Most patent families are associated with only 1 CAplus record. While most patent families consist of closely related patents “covered” by only 1 CAplus record, there are some cases with more than 1 CAplus accession number associated with a patent family. This may happen when related patents have somewhat different technical content or when family members have more complex relationships such as multiple priorities from different countries or relationships resulting from division, addition, continuation, or continuation-in-part patents.

In the following example, there are two CAplus accession numbers associated with this patent family. Display the bibliographic information for both records to obtain a list of the patents in this family.

=&gt; S DE2826760/PN

L2 2 DE2826760/PN

=&gt; D BIB 1-2

L2 ANSWER 1 OF 2 CAPLUS COPYRIGHT 1998 ACS  
 AN 1982:47570 CAPLUS  
 DN 96:47570  
 TI Herbicidal 1,2,4-triazole derivatives  
 IN Heubach, Guenther; Bauer, Klaus; Bieringer, Hermann  
 PA Hoechst A.-G. , Fed. Rep. Ger.  
 SO Ger. Offen., 19 pp. Addn. to Ger. Offen. 2,826,760.  
 CODEN: GWXXBX  
 DT Patent  
 LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	----	-----	----
PI	DE 3016883	A1	19811119	DE 80-3016883	19800502
	DE 2826760	A1	19800103	DE 78-2826760	19780619 <-
PRAI	DE 78-2826760		19780619		

L2 ANSWER 2 OF 2 CAPLUS COPYRIGHT 1998 ACS  
 AN 1980:181200 CAPLUS  
 DN 92:181200  
 TI 1,2,4-Triazole derivatives  
 IN Heubach, Guenther; Sachse, Burkhard; Buerstell, Helmut  
 PA Hoechst A.-G., Fed. Rep. Ger.  
 SO Ger. Offen., 24 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	----	-----	----
PI	DE 2826760	A1	19800103	DE 78-2826760	19780619 <-
	ES 481526	A1	19800116	ES 79-481526	19790613
	EP 7010	A1	19800123	EP 79-101917	19790613
R:	AT, BE, CH, DE, FR, GB, IT, NL, SE				
	AU 7948103	A1	19800207	AU 79-48103	19790615
	DD 144501	C	19801022	DD 79-213657	19790615
	DK 7902538	A	19791220	DK 79-2538	19790618
	JP 55002680	A2	19800110	JP 79-75742	19790618
	BR 7903837	A	19800304	BR 79-3837	19790618
	ZA 7903007	A	19800625	ZA 79-3007	19790618
	US 4239525	A	19801216	US 79-49437	19790618
	DE 3016883	A1	19811119	DE 80-3016883	19800502
PRAI	DE 78-2826760		19780619		

## Patent Titles Enhanced

Patent titles are often enhanced by CAS in order to help in searching and to better inform users as to what is being patented. The actual patent titles are sometimes vague and general such as “Novel composition of matter and process for utilizing same.” CAS attempts to provide an informative title. If this patent were actually about a process for treating crude- oil residues so that they can be used as fuels, CAS might provide a title such as “Treated hydrocarbon oil composition for use as a fuel component.” In general, titles are enhanced to reflect the novelty of the invention, typically found in the claims, as well as any other new and important chemical information from any part of the patent.

## ABSTRACTS

The CA patent abstract is a concise statement of the novelty of the invention and the technical disclosure of the specification. It is intended to describe the disclosure sufficiently so that readers can decide whether or not they need to consult the full patent text for details. The patent abstract alone cannot be used to determine such legal matters as whether an invention is novel or whether one patent infringes on, dominates, or invalidates another.

A patent abstract in CA includes one or more overview sentences, one or more chemical structure diagrams (when appropriate), and one or more specific examples (when appropriate). The overview sentence(s), i.e., the first sentence(s) of the abstract, is a concise statement of the novelty and scope of the invention in the broadest sense. This information usually appears in the claims of the patent, but may be found anywhere in the specification.

The example sentence(s) presents a specific example illustrating the novelty and the scope of the invention. Multiple examples may be included when necessary to cover various aspects of the invention. If possible, the example describes one highly active, claimed, or otherwise preferred compound including its preparation and use. Information included in the example is not limited to that contained in the nominal examples section of the patent, but can be found anywhere in the specification where data are reported. An example is not always required. The example is omitted when it will not add significantly to the content of the abstract, or when no experimental data are presented in the patent.

Structures in abstracts are usually reproduced exactly as they appear in the patent specification, so long as they are unambiguous and readily understood. Inventors' substance names are also used, if they are clear and consistent with general conventions. Not every Markush structure is incorporated into the abstract. When a Markush structure is introduced, its definition is intended to convey the inventor's meaning without being exhaustive. Line formulas in abstract text are used for simple, linear compounds having little or no stereochemistry and for substituted benzenes. For benzenes, line formulas are generally limited to systems having one, two, or three substituents. Two-dimensional structures are used for more complex benzenes, for other ring systems, or for any compound whose line formula would be too complex for easy recognition.



## OVERVIEW OF INDEXING

The purpose of CAS's indexing is to enable searchers to find patents or other documents in either printed CA issues or online. Abstracts and index entries are prepared after the content of a patent is thoroughly analyzed by a patent document analyst. Patent document analysts are highly trained specialists who have technical expertise in various areas of chemistry and often know other languages in addition to English.

In general, CAS's indexing of patents aims to capture the main or novel aspects of the invention, including the general subject matter, classes of compounds, and specific compounds. For indexing purposes, novelty is decided on the basis of claims, inventor's emphasis, and the judgment of the document analyst. For example, in a patent claiming a new process for the preparation of a class of compounds, the method, the class of compounds, and the specific reactants and products are indexed. However, well-known solvents or reagents in the patent are not indexed unless they are judged to be part of the novelty of the invention. An apparatus is indexed if the patent discloses a novel chemical or chemical engineering apparatus or a chemical modification to an existing piece of apparatus. An organism is indexed when that organism is an integral part of the invention, as in a patent describing a use of an organism in a process for wastewater treatment. But model organisms in screening studies, e.g., toxicological or pharmacological studies, are not indexed.

In general, subject and substance index entries are chosen to reflect the content of a document as specifically as possible. For example, a patent claiming new antidepressants is indexed using the heading "Antidepressants" rather than a broader heading such as "Stimulants (nervous system)" or "Nervous system agents." However, the heading "Stimulants (nervous system)" would be an appropriate index heading for a patent describing a class of compounds with a pattern of activity reflecting general stimulation of the nervous system rather than some more specific actions.

The number of index entries that may be made for a single patent depends on the document. There are no guidelines specifying either the minimum or the maximum number of index entries.

CAS's indexing of patents and other documents consists of three types of entries: keywords, General Subject Index entries, and Chemical Substance Index entries. In the following sections, each type of entry is illustrated and discussed with emphasis on CAS's current guidelines for their preparation.

## KEYWORDS

Keywords are index terms prepared for the Keyword Index, which accompanies each issue of CA. They provide quick entry into the subject content of the patent. The keyword phrases tend to represent current terminology and the vocabulary found in the original literature. For example, the following keyword entry was made for the European Patent Application 221,630 on “Ultraviolet blocking agents for contact lenses” (CA Volume 107, abstract 183620 shown in Figure 2):

Contact ⋮ lens UV absorber benzotriazole P 183620x
---

The capital letter P accompanying the abstract number indicates that the document is a patent. In the CAplus file on STN, keywords are displayed in the ST (Supplementary Term) field.

ST    contact lens UV absorber benzotriazole
--

## GENERAL SUBJECT INDEX ENTRIES

CAS also provides indexing of the subject matter of patents by means of CA General Subject Index headings. These headings are produced for the semiannual General Subject Index to printed CA.

The following example shows one of the General Subject Index entries made for the patent citation illustrated in Figure 2.

<b>Lenses</b> Optical lenses can be assumed unless other information is included in the index entry ⋮ <i>contact</i> ⋮ benzotriazole derivs. in, for UV blocking, P 18360x
---

The same entry appears in the IT (Index Terms) field in the CAplus file record for this patent document.

IT Lenses  
(contact, benzotriazole derivs. in, for UV blocking)

The General Subject Index heading, “Lenses” is followed by a text-modifying phrase that provides additional information about the content of the patent.

General Subject Index headings are controlled-vocabulary access points to the subject matter of the patent including classes of substances, their properties, reactions, uses or applications, chemical and chemical engineering apparatus or processes, and organisms.

There are nearly 15,000 non-taxonomic CA index headings. Another 100,000 headings are names for living organisms. The non-taxonomic headings are listed in the current CA Index Guide. Some headings have indexing policy notes, which describe how that heading is used or what type of information is indexed at that heading. The indexing notes appear with the headings in the CA Index Guide and in the General Subject Index.

Some CA index headings have changed over time. These changes are made primarily to keep pace with the terminology used in the chemical literature. Most of these changes or revisions occur at the beginning of five-year collective index periods.

The General Subject Index vocabulary was considerably simplified and extended in 1997 to provide natural-word order headings reflecting user terminology for all frequently indexed ideas. Many ideas previously indexed at the subheading level, often with inverted terms, are now indexed in natural word order at the heading level.

The main guideline for the preparation of General Subject Index entries is that the novel or main aspects of the invention are to be indexed. This guideline is illustrated by the following examples and discussion of CAS’s policies for indexing of classes of compounds and uses and applications of substances from patents.

## Classes of Compounds

General Subject Index entries for classes of compounds are made when a class of compounds is claimed or described in the examples of a patent. The class term may be stated explicitly in the text of the patent or it may be inferred from a Markush structure.

Example: Group IVB sandwich compounds are claimed as catalysts for isomerizing olefins.

The following General Subject Index terms are selected to reflect the classes of compounds:

Sandwich compounds  
Group IVB element compounds  
Alkenes

Example: The following Markush structure appears in the main claim of a patent: the salt RNMe<sub>3</sub>X in which X = halogen, R = C<sub>12-18</sub> alkyl)

The following General Subject Index heading, defining this class of compounds, is selected:

Quaternary ammonium compounds

## Uses and Applications of Substances

Applications and uses cited in claims or uses cited in examples with substantiating data are indexed. Unclaimed and unsubstantiated uses may also be indexed if they are judged to be of significant interest to users; these often represent main known uses and applications of the compounds.

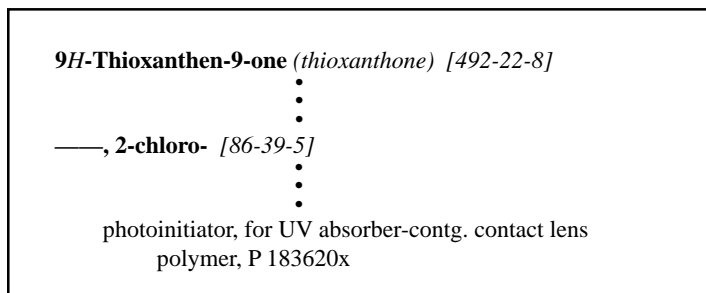
Example: A patent originally titled "Preparation of psychotropic  $\beta$ -carbolines with reduced extrapyramidal side-effects" describes the preparation of novel compounds and pharmacological assays demonstrating reduced side effects, but neither the claims nor the examples give data regarding the psychotropic activity.

To reflect the main use of the compounds described in the invention, the following General Subject Index heading is used:

Psychotropics

## CHEMICAL SUBSTANCE INDEX ENTRIES

The printed Chemical Substance Index provides access to patents by means of CA index names for the specific substances that were indexed. The following example shows one of the Chemical Substance Index entries for the CA abstract 183620 in CA Volume 107.



The CA index name, 9H-Thioxanthen-9-one, 2-chloro, is followed by the CAS Registry Number for the substance, 86-39-5, and a text- modifying phrase that provides information about the role of the substance as a photoinitiator. The index entry also includes the CA abstract number and P indicating that the document is a patent.

The same index entry is shown next as it appears in the online record for this patent in the CAplus file.

<p>IT 86-39-5, 2-Chlorothioxanthone        RL: BIOL (Biological study)        (photoinitiator, for UV absorber-contg. contact lens polymer)</p>
---

The online entry includes the CAS Registry Number for the indexed compound, followed by the substance name used in the patent, its role, and a modifying phrase, in parentheses. Since June 1987, common or trade names used in the original document may be included in online index entries to help users in identifying indexed compounds.

There is no minimum or maximum number of specific substances that may be indexed by CAS document analysts from a single patent.

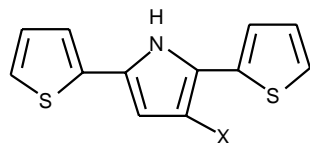
### General Guidelines for Indexing of Specific Substances

There are three main guidelines for indexing of specific substances from patent documents.

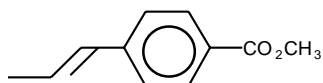
*Guideline 1.* Specific compounds are indexed from the claims when they pertain to the novelty of the invention. In Figure 5, which shows 3 claims from a patent document, all specific substances described by the structure in claim 8 and the two specific substances named in claims 9 and 10 are indexed.

Excerpt from the claims of a patent document:

8. The compound



in which X is  $-\text{CHO}$ ,  $-\text{CH}=\text{CH}-\text{NO}_2$ ,  $-\text{CH}=\text{CH}-\text{CO}_2\text{CH}_3$ ,  $-\text{CHOHCH}_2\text{SO}_3\text{CH}_3$ ,  $-\text{CHOH}-\text{CH}_2-\text{CO}_2-t\text{-C}_4\text{H}_9$ ,  $-\text{CH}=\text{CH}-(\text{CH}_2)_4-\text{CO}_2\text{H}$ .



$-\text{N}(\text{C}_3\text{H}_5)_2$ ,  $-\text{NH}(\text{CH}_2)_6-\text{NHCOF}_3$ ,  $-\text{NH}-(\text{CH}_2)_3-\text{CO}_2\text{CH}_3$ ,  $-\text{NH}-\text{C}_6\text{H}_4-\text{CO}_2-\text{CH}_3$ ,  $-(\text{CH}_2)_2-\text{NHCOF}_3$ ,  $-\text{Br}$ ,  $-\text{CONHSO}_2\text{Cl}$ ,  $-\text{CHO}$ ,  $-\text{CH}_2\text{N}(\text{C}_3\text{H}_5)_2$ ,  $-\text{COCH}_3$ ,  $-\text{CO}(\text{CH}_2)_2\text{CO}_2\text{H}$  or  $-\text{CO}(\text{CH}_2)_2\text{CO}_2\text{CH}_3$ .

9. Methyl 4-{2-thienyl-5-[2-pyrrolyl-3-(4-carbomethoxy-1-oxopropyl)-5-(2-thienyl)]}-4-oxobutyrates

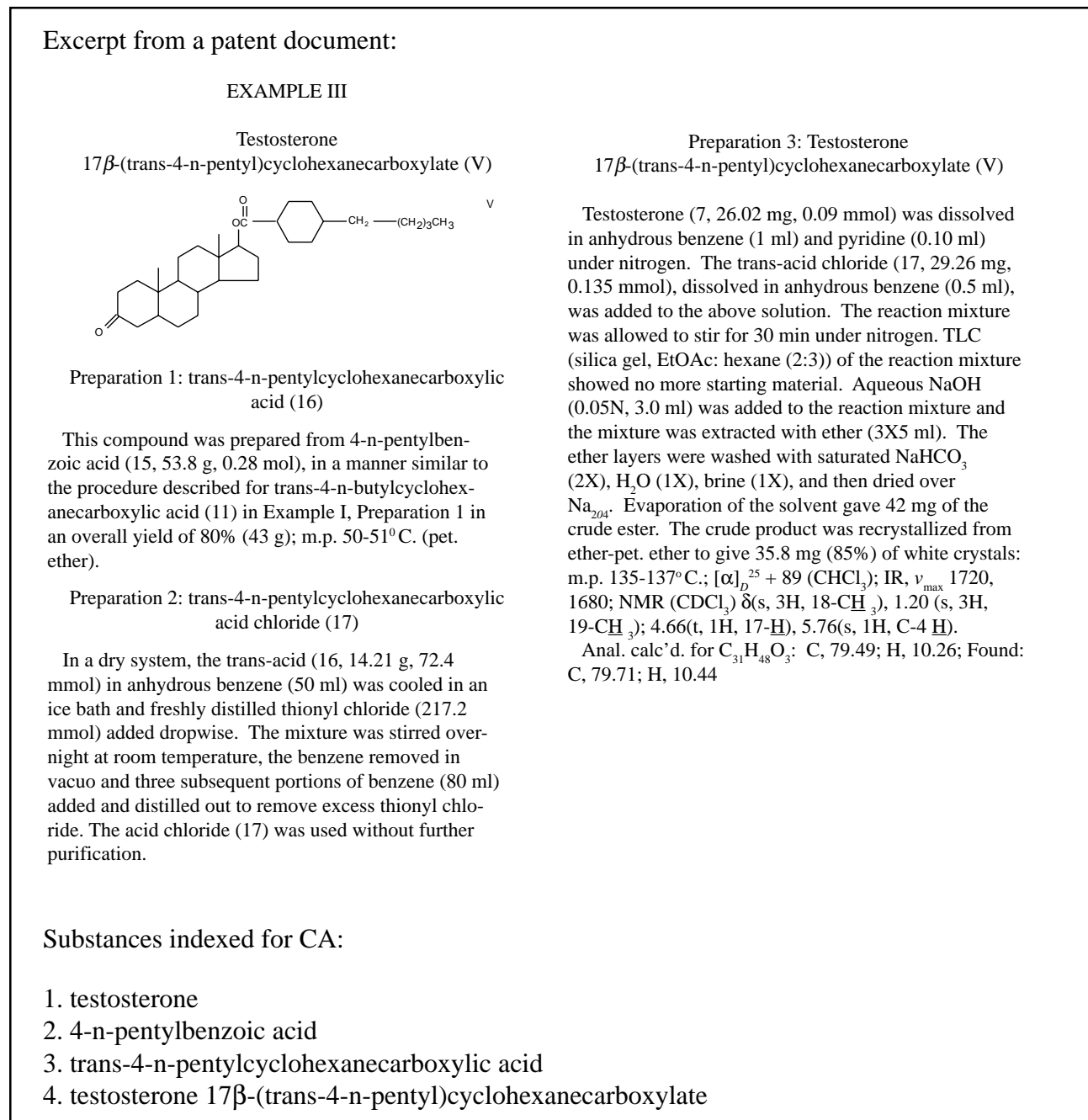
10. Methyl 4-{2-thienyl-5-[2-pyrrolyl-5-(2-thienyl)]}-4-oxobutyrates.

Substances indexed for CA:

1. 18 substances described by the structure in Claim 8.
2. substances named in claims 9 and 10.

**Figure 5**

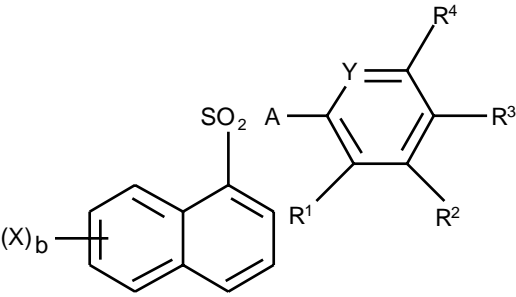
*Guideline 2.* Specific compounds pertaining to the novelty of the invention are indexed from patent examples when supporting data such as properties, uses, or method of preparation (along with yield or supporting data) are provided. In Figure 6 showing a 3-step preparation, the product (compound V), the intermediate (compound 16), and the reactants (4-n-pentylbenzoic acid and testosterone) are indexed. However, although mentioned in the text, the acid chloride intermediate (compound 17) is not indexed because no supporting data or yield are disclosed. Benzene is not indexed because in this reaction benzene functions as a common solvent. Thionyl chloride and pyridine are not indexed because they are common reagents. These common substances do not represent the novel aspects of the invention described in this patent.



**Figure 6**

In Figure 7 showing a table from a patent document, the products numbered 1-4, 6, 9 and 10 are indexed because their melting points are given. Compounds 5, 7, and 8 in this table are not indexed because no data are provided for these substances.

Excerpt from a patent document:



Ex.	X	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	Y	A	mp (°C)
1	2-Cl	H	CONH <sub>2</sub>	H	H	CH	NH	202-205
2	5-Cl	H	COHN <sub>2</sub>	H	H	CH	NH	257-259
3	4-Cl	CONH <sub>2</sub>	H	H	H	CH	NH	238-239
4	H	H	CONH <sub>2</sub>	H	H	CH	NH	182-185
5	3-Cl	H	CONH <sub>2</sub>	H	H	CH	NH	
6	4-Cl	H	CONH <sub>2</sub>	H	H	CH	NH	185-190
7	6-Cl	H	CONH <sub>2</sub>	H	H	CH	NH	
8	7-Cl	H	CONH <sub>2</sub>	H	H	CH	NH	
9	H	CONH <sub>2</sub>	H	H	H	CH	NH	255-256
10	2-Cl	CONH <sub>2</sub>	H	H	H	CH	NH	235-239

Substances indexed for CA: 1-4, 6, 9-10

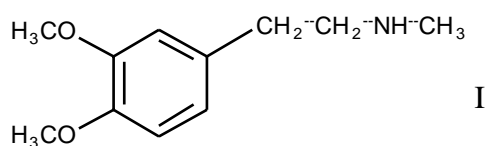
**Figure 7**



*Guideline 3.* Index entries may be made for any compounds from a patent if the analyst considers that they would provide useful information about the significance of the invention. Figure 8 shows a patent abstract describing the preparation of an intermediate for the coronary vasodilator verapamil. Although this patent neither claims nor provides data for verapamil itself, an index entry may be made for verapamil with the text-modifying phrase “intermediate for, methyl(dimethoxyphenylethyl)amine as” in order to provide this information for the user.

Excerpt from a patent document:

New process for the synthesis of the N-methyl-3,4-dimethoxyphenylethylamine of formula



intermediate in the synthesis of the drug internationally known as verapamil. The process starts from the 3,4-dimethoxybenzaldehyde which, by means of a Darzens condensation, gives an epoxyester that, by alkaline hydrolysis and subsequent decarboxylation, gives the 3,4-dimethoxyphenylacetaldehyde. This aldehyde gives the amine of formula I by reaction with monomethylamine followed by reduction with sodium borohydride.

**Figure 8**

## Indexing of Specific Substances: Special Cases

As discussed in the previous section on general guidelines, substances are indexed from the claims when they pertain to the novelty of the invention. Thus, when the claims describe a synthetic process in which reactants and products are defined, the specific reactants and products are indexed. However, products are not reconstructed when only reactants are specified in the claims. Figure 9 shows claims 1, 2, 3, and 17 of patent document. Both the reactant and the product are indexed from claim 17. However, only the cyanohydrin reactant is indexed from claim 3; the product is not reconstructed.

Excerpt from a patent document:

What is claimed is:

**1.** A process for preparing a arylacetonitrile of the formula  $\text{ArCH(R)CN}$  wherein Ar is phenyl, 3-phenoxyphenol, 4-alkylphenyl where the alkyl group has 1 to 5 carbon atoms, naphthyl or 6-alkoxynaphthyl where the alkoxy group has 1 to 5 carbon atoms and R is hydrogen or an alkyl group having 1 to 20 carbon atoms which comprises reducing a cyanohydrin of the formula  $\text{ArC(R)(OH)CN}$  where Ar and R are as previously defined with phosphorus pentasulfide, the amount of said phosphorus pentasulfide being about 0.2 to 1.1 mole per mole of said cyanohydrin in an inert solvent having a boiling point of 50° to 150° C.

**2.** The process of claim 1 wherein Ar is a 6-alkoxy-2-naphthyl group in which the alkoxy substituent contains 1-5 carbons.

**3.** The process of claim 2 wherein the cyanohydrin is 1-cyano-1-hydroxy-1-(6-methoxy-2-naphthyl)ethane.

•  
•  
•

**17.** A process for preparing 1-cyano-1-(4-isobutylphenyl)ethane which comprises reducing 1 molar proportion of 1-cyano-1-hydroxy-1-(4-isobutylphenyl)ethane with 0.5 molar proportion of a mixture of tetraphosphorus decasulfide and tetraphosphorus nonasulfide in toluene.

Substances indexed for CA:

1. 1-cyano-1-hydroxy-1-(6-methoxy-2-naphthyl)ethane
2. 1-cyano-1-(4-isobutylphenyl)ethane
3. 1-cyano-1-hydroxy-1-(4-isobutylphenyl)ethane

**Figure 9**

Intermediates in preparative patent specifications are indexed when they are specifically claimed, or when they are prepared, isolated, or characterized. Intermediates of questionable existence or of doubtful constitution are usually not indexed. In Figure 10, the text of the disclosure mentions mixed antimony fluorochlorides that serve as the catalysts for the process. These mixed halides are neither claimed nor isolated, and are not discussed further; no index entry is made for them. The initial catalyst (antimony pentachloride), the reactants, and the final product described in this invention are indexed.

Excerpt from a patent document:

According to the present invention there is provided a process for the preparation of a compound of the formula  $\text{CF}_3\text{CHFOCHF}_2$  comprising reacting a starting compound of the formula  $\text{CF}_3\text{CHClOCHF}_2$  with hydrogen fluoride in the presence of an effective amount of catalyst comprising antimony pentachloride.

•  
•  
•

Hydrogen fluoride and antimony pentachloride react to form a mixed antimony fluorochloride in situ which catalyses the reaction according to the invention. Such a mixed catalyst would be likewise useable in the present invention. For reasons of economy, and ease of preparation it is preferred to utilize pure antimony pentachloride and form the mixed catalyst in situ.

Substances indexed for CA:

1. antimony pentachloride
2. hydrogen fluoride
3.  $\text{CF}_3\text{CHClOCHF}_2$
4.  $\text{CF}_3\text{CHFOCHF}_2$

**Figure 10**

Polymeric products are indexed when they are completely defined. Thus, if a patent claims or describes in an example the preparation of a specific monomer or a specific polymer, that monomer or polymer is indexed. In Figure 11, the product, that is, the copolymer of carbon dioxide with diphenyl ether, is indexed.

Excerpt from a patent document:

Example 10

Using a method similar to the general method of Examples 1 to 9, diphenylether (5.10g, 0.030mole), aluminum chloride (12.00g, 0.0899mole) and 1,2,4-trichlorobenzene (60ml) were charged into a 125ml Hastelloy C autoclave having a plunger-driven agitator. The autoclave was pressurised at ambient temperature to 55 bar with carbon dioxide and the reaction mixture was heated to 160° C over 30 minutes whilst being agitated during which time the pressure rose to 125.5 bar. The reaction mixture was maintained at that temperature for 30 minutes following which the autoclave was cooled by removing the heating jacket and immersing in cold water. The autoclave was opened and methanol was added to the reaction mixture to assist in removing the mixture from the autoclave. The rubbery product was scrapped from the autoclave, ground finely as possible and washed with fresh methanol until it was free of reaction solvent. The product was further purified by extraction with boiling methanol and three times with boiling water, the product being filtered off the liquor following each extraction. The product was then dried in a vacuum oven to give an off-white powder (5.0g, 85% yield).

The polymer had an inherent viscosity of 0.37 dl g<sup>-1</sup>. DSC analysis showed the polymer to have a T<sub>m</sub> = 365.7° C and a small T<sub>g</sub> 147° C. Using C<sup>13</sup> nmr analysis, the polymer was determined to have repeat units:-

-Ph-O-Ph-CO-

and predominantly phenylenexanthidiol end groups

Substances indexed for CA: copolymer of carbon dioxide and diphenyl ether

**Figure 11**

Polymeric products are not indexed when they would have to be reconstructed from lists of reactants. Thus, if the claims include only two lists of monomers that can copolymerize, or a single list from which one or more monomers can be selected, neither the specific monomers nor all the possible, hypothetical products are indexed. Such a list of monomers is illustrated in claim 4 of Figure 12.

Excerpt from a patent document:

### Claims

1. A process for making a polyarylketone comprising polycondensing at least one aromatic monomer having at least two hydrogen atoms susceptible to electrophilic substitution with carbon dioxide in solution in the presence of an acid capable of activating the condensation reaction.

2. A process according to claim 1, in which said at least one monomer is selected from monomers having formula:-  
H-Ar-H

wherein Ar is the divalent aromatic residue comprised of at least two phenylene units connected by linkages selected from a direct link, -O-, -S-, -CO-, -SO<sub>2</sub>- or -CR<sub>2</sub>- where R is hydrogen, C<sub>1</sub> to C<sub>4</sub> alkyl, phenyl or the two groups R (which otherwise may be the same or different) are joined externally to form a cycloaliphatic ring, are present or of polynuclear aromatic units either alone or with like units and/or phenylene units linked as aforesaid.

3. A process according to claim 1 or claim 2, in which said at least one monomer is selected such that the ratio of -SO<sub>2</sub>- linkages to -CO-linkages between aromatic moieties is not more than 1:5, preferably not more than 1:10.

4. A process according to any one of the preceding claims, in which said at least one monomer is selected from:-

diphenylether

4,4'-diphenoxybenzophenone

4,4'-diphenoxydiphenylsulfone

dibenzofuran

1,4-bis(4-phenoxybenzoyl)benzene;

and their thioether equivalents; and

biphenyl

1,2-, 1,3- or, preferably, 1,4-diphenylbenzene

naphthalene

anthracene

phenanthrene or:-

Ph-CR<sub>2</sub>-Ph

wherein Ph is 1,4-phenylene and CR<sub>2</sub> is as herein before defined, R preferably being -C(CH<sub>3</sub>)<sub>2</sub>-.

Substances indexed for CA: none

**Figure 12**

## Compounds Indexed from Markush Structures

Specific compounds are indexed from Markush structures in the claims when the compounds are unambiguously defined.

Example: The claims of a patent read:

Claim 1. The compound  $XCONRSCH_2CH_2SNRCOX$   
(R = alkyl, X = halo, OH, alkoxy)

Claim 2. The compound of claim 1 with X = F and R = Me

The compound in claim 2 is indexed.

Specific compounds are also indexed from Markush structures in the claims when they may be easily generated from the definition of the Markush structure. For example, if there is only one variable group and specific definitions are given, all compounds are indexed.

Example:  $RCH_2SO_2CH:CClPh$  (R = H, Ph, *p*-tolyl)

Compounds

indexed:  $MeSO_2CH:CClPh$   
 $PhCH_2SO_2CH:CClPh$   
 $p-MeC_6H_4CH_2SO_2CH:CClPh$

If there are two or more variable groups that are defined specifically for each compound, all of the individual compounds are indexed.

Example:  $RCH_2SO_2CH_2CHClR_1$  [R = Me,  $R_1 = Ph$ ;  
R = Et,  $R^1 = Et_2Si(Me)CH:CH$ ]

Compounds

indexed:  $EtSO_2CH_2CHClPh$   
 $PrSO_2CH_2CHClCH:CHSi(Me)Et_2$

In addition to indexing specific compounds from Markush structures, CAS also provides access to complete Markush structures from patents published since January 1, 1988. Markush structures from those patents are searched in the MARPAT and MARPATprev files.

## Nonspecific General Derivatives

Sometimes a patent or another document does not provide adequate substance information to allow indexing of specific compounds. For example, a patent might claim all salts of ibuprofen or all alkyl derivatives of thioxanthone. In cases such as these, index entries are made at the specific compounds with text indicating the nature of the general derivative. For example, in a patent claiming all ibuprofen salts, an index entry would be made for the substance ibuprofen followed by the text term "salts."

Nonspecific general derivatives are found in the printed Chemical Substance Index under the CA index names for the specific compounds. The following example shows an entry for ibuprofen salts.

**Benzeneacetic acid,**  
 —,  $\alpha$ -methyl-4-(2-methylpropyl)- (*ibuprofen*)  
 [15687-27-1]  
 ⋮  
 salts, pharmaceuticals, contg. hydrophilic carriers, P  
 101832t

Since 1977 the nonspecific general derivatives are represented in the online database by the CAS Registry Number for the specific compound followed by D. The following example shows an index entry for “ibuprofen salts” from the online file record for this patent:

IT 15687-27-1D, Ibuprofen, salts  
 RL: BIOL (Biological study)  
 (pharmaceuticals, contg. hydrophilic carriers)

Prior to 1977, index entries for nonspecific general derivatives include the CA index names rather than the CAS Registry Numbers followed by D. The following example is an entry for chlorinated derivatives of biphenyl from a 1975 patent.

IT 1,1'-Biphenyl, chlorinated  
 RL: (Uses)  
 (fire-resistant functional fluids contg. phosphates and)

The following examples are included to illustrate some general cases in which index entries for nonspecific general derivatives are made.

Example: The following reaction appears in one of the patent examples:

The compound  $\text{O:P}(\text{C}_6\text{H}_4\text{Me}_4)_3$  is brominated and the reaction mixture is treated with sodium isopropoxide to give an unspecified bromine-containing, isopropoxylated product mixture.

The following product is indexed:

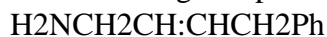
$\text{O:P}(\text{C}_6\text{H}_4\text{Me}_4)_3$   
 text: bromo derivs., reaction products with sodium isopropoxide

Index entries for nonspecific general derivatives may also be made when specific indexable compounds are not present in the patent. For example, if no specific compounds represented by Markush structures are indexed from either the claims or disclosure, generalized “derivative” entries are made by equating all univalent variables of the Markush structure to hydrogen and using an appropriate index modification.

Example: The following Markush structure is claimed:



The following compound is indexed:



text: alkyl derivs.

### History of Guidelines for Indexing of Specific Compounds

Since its beginning in 1907, the emphasis of CAS's indexing has always been the technical content of the patent, that is, the chemical information found in the disclosure. Therefore, chemical substances have always been indexed from examples when data were given on their properties; their use was supported by experimental evidence; or a complete quantitative preparation method was described. Starting in 1972 CAS also began to index completely defined reactants and intermediates if the product of the reaction was indexed and a sufficiently unambiguous reaction scheme was provided in the patent document. The indexing of reactants in synthetic or preparative studies was started on a limited scale in 1972 and extended to all CA sections by mid- 1973.

In some cases, patent applicants, in an effort to gain the broadest possible protection, describe substances whose preparation and uses are not actually demonstrated, but whose molecular structures are similar to other prepared substances and thus might be expected to react in the same manner or have similar properties. These hypothetical substances and uses are generally termed “paper chemistry” or “prophetic chemistry.” Historically, CAS has not indexed such substances unless some reasonable evidence was provided that the substance was prepared or existed or the alleged use was actually demonstrated. This policy was modified in 1979 when CAS began to index novel, completely defined compounds from the claims, even in the absence of any other information. The policy of indexing completely defined substances from patent claims was started in 1979 in the field of organic chemistry and extended to all CA sections by the end of 1980.



## Appendix I

### PATENT COVERAGE BY COUNTRY AND TYPE OF PATENT DOCUMENT

	Year																	
	1907	10	13	18	21	29	34	48	51	53	56	58	59	60	63	64	65	66
Australian						R	R	R	R	R	R	R	R	R	R	R	R	R
Austrian			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Belgian					R	R	R	R	R	R	R	R	R	R	A	A	A	A
British	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
British Amended																		A
Canadian		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Czechoslovakian											R	R	R	R	R	R	R	R
Danish			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Finnish														R	R	R	R	R
French	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
French Addition															A	A	A	A
French Medicinal															A	A	A	A
French Addition to Medicinal															A	A	A	A
German (East)													R	R	R	R	R	R
German Patentschrift	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
German Auslegeschrift													A	A	A	A	A	A
Hungarian						R	R	R	R	R	R	R			R	R	R	R
Indian								R	R	R	R	R	R	R	R	R	R	R
Israeli												R	R	R	R	R	R	R
Italian						R		R	R	R	R	R	R	R	R	R	R	R
Japanese Tokkyo Koho				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Netherlands					R	R	R	R	R	R	R	R	R	R	R	R	A	A
Netherlands Application																R	A	A
Norwegian			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Polish														R	R	R	R	R
Spanish										R	R	R	R	R	R	R	R	R
Swedish			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Swiss					R	R	R	R	R	R	R	R	R	R	R	R	R	R
United States Granted Patent	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
U.S. Reissue											A	A	A	A	A	A	A	A
U.S.S.R.						R	R	R				R	R	R	R	R	R	R

A = all patents of chemical or chemical engineering interest, i.e., patents issued to nationals or non-nationals.

R = chemical and chemical engineering patents issued to individuals or organizations resident in the granting country (i.e. nationals) or resident in countries not listed above.

## Appendix I

### PATENT COVERAGE BY COUNTRY AND TYPE OF PATENT DOCUMENT

	Year											
	67	68	69	70	71	72	73	74	75	76	77	78
Australian	R	R	R	R	R	R	R	R	R	R	R	R
Australian (Petty)												
Austrian	R	R	R	R	R	R	R	R	A	A	A	A
Belgian	R	R	R	R	R	R	R	R	A	A	A	A
Brazilian Pedido										A	A	A
British	A	A	A	A	A	A	A	A	A	A	A	A
British Amended	A	A	A	A	A	A	A	A	A	A	A	A
British U.K. Patent Appl.												
Canadian	R	R	R	R	R	R	R	R	A	A	A	A
Canadian Application												
China												
Czechoslovakian	R	R	R	R	R	R	R	R	R	R	R	R
Danish	R	R	R	R	R	R	R	R	R	R	R	R
Finnish	R	R	R	R	R	R	R	R	R	R	R	R
French	A	A	A	A	A	A	A	A	A	A	A	A
French Addition	A	A	A	A	A	A	A					
French Demande			A	A	A	A	A	A	A	A	A	A
French Medicinal	A	A	A	A	A	A						
French Addition to Medicinal	A	A	A	A	A	A						
German (East)	R	R	R	R	R	R	R	R	R	R	R	R
German Patentschrift	A	A	A	A	A	A	A	A	A	A	A	A
German Auslegeschrift	A	A	A	A	A	A	A	A	A	A	A	A
German Offenlegungsschrift				A	A	A	A	A	A	A	A	A
Hungarian	R	R	R	R	R	R	R					
Hungarian Halasztott						R	R	R	R	R	R	R
Hungarian Teljes					R	R	R	R	R	R	R	R
Indian	R	R	R	R	R	R	R	R	R	R	R	R
Israeli	R	R	R	R	R	R	R	R	R	R	R	A
Italian	R	R	R	R	R	R	R	R				
Japanese Tokkyo Koho	R	R	R	R	R	R	R	R	R	A	A	A
Japanese Kokai Tokkyo Koho						R	R	R	R	A	A	A
Netherlands	A	R	R	R	R	R	R	R	R	A	A	A
Netherlands Application	A	R	R	R	R	R	R	R	R	A	A	A
Norwegian	R	R	R	R	R	R	R	R	R	R	R	R
Polish	R	R	R	R	R	R	R	R	R	R	R	R
Romanian	R	R	R	R	R	R	R	R	R	R	R	A
South African		A	A	A	A	A	A	A	A	A	A	A
Spanish	R	R	R	R	R	R	R	R	R	R	R	R
Swedish	R	R	R	R	R	R	R	R	R	R	R	R
Swiss Patentschrift	R	R	R	R	R	R	R	R	R	R	R	A
Swiss Auslegeschrift												
United States Granted Patent	A	A	A	A	A	A	A	A	A	A	A	A
U.S. Patent Application (Trial Program)									A	A		
U.S. Published Patent Appl. (NTIS)								A	A	A	A	A
U.S. Reissue	A	A	A	A	A	A	A	A	A	A	A	A
U.S. Defensive Publication			A	A	A	A	A	A	A	A	A	A
U.S. Statutory Invention Registration												
U.S.S.R.	R	R	R	R	R	R	R	R	R	R	R	A
European Patent Appl.												
PCT International Appl.												

A = all patents of chemical or chemical engineering interest, i.e., patents issued to nationals or non-nationals.

R = chemical and chemical engineering patents issued to individuals or organizations resident in the granting country (i.e. nationals) or resident in countries not listed above.

## Appendix I

### PATENT COVERAGE BY COUNTRY AND TYPE OF PATENT DOCUMENT

	Year											
	79	80	81	82	83	84	85	86	87	88	89	90
Australian	R	R	R	A	A	A	A	A	A	A	A	A
Australian (Petty)				A	A	A	A	A	A	A	A	A
Austrian	A	A	A	A	A	A	A	A	A	A	A	A
Belgian	A	A	A	A	A	A	A	A	A	A	A	A
Brazilian Pedido	A	A	A	A	A	A	A	A	A	A	A	A
British	A	A	A	A	A	A	A	A	A	A	A	A
British Amended	A	A	A	A	A	A	A	A	A	A	A	A
British U.K. Patent Appl.	A	A	A	A	A	A	A	A	A	A	A	A
Canadian	A	A	A	A	A	A	A	A	A	A	A	A
Canadian Application											A	A
China								A	A	A	A	A
Czechoslovakian	R	R	R	R	R	R	R	R	R	R	R	R
Danish	R	R	R	R	R	R	R	R	R	R	R	R
Finnish	R	R	R	R	R	R	R	R	R	R	R	R
French	A	A	A	A	A	A	A	A	A	A	A	A
French Addition												
French Demande	A	A	A	A	A	A	A	A	A	A	A	A
French Medicinal												
French Addition to Medicinal												
German (East)	R	R	R	A	A	A	A	A	A	A	A	A
German Patentschrift	A	A	A	A	A	A	A	A	A	A	A	A
German Auslegeschrift	A	A	A	A	A	A	A	A	A	A	A	A
German Offenlegungsschrift	A	A	A	A	A	A	A	A	A	A	A	A
Hungarian												
Hungarian Halasztott	R	R	R	R	R	R	R	R	R	R	R	R
Hungarian Teljes	R	R	R	R	R	R	R	R	R	R	R	R
Indian	R	R	R	A	A	A	A	A	A	A	A	A
Israeli	A	A	A	A	A	A	A	A	A	A	A	A
Italian												
Japanese Tokkyo Koho	A	A	A	A	A	A	A	A	A	A	A	A
Japanese Kokai Tokkyo Koho	A	A	A	A	A	A	A	A	A	A	A	A
Netherlands	A	A	A									
Netherlands Application	A	A	A	A	A	A	A	A	A	A	A	A
Norwegian	R	R	R	R	R	R	R	R	R	R	R	R
Polish	R	R	R	R	R	R	R	R	R	R	R	R
Romanian	A	A	A	A	A	A	A	A	A	A	A	A
South African	A	A	A	A	A	A	A	A	A	A	A	A
Spanish	R	R	R	R	R	R	R	R	R	R	R	R
Swedish	R	R	R	R	R	R	R	R	R	R	R	R
Swiss Patentschrift	A	A	A	A	A	A	A	A	A	A	A	A
Swiss Auslegeschrift				A	A	A	A	A	A	A	A	A
United States Granted Patent	A	A	A	A	A	A	A	A	A	A	A	A
U.S. Patent Application (Trial Program)												
U.S. Published Patent Appl. (NTIS)	A	A	A	A	A	A	A	A	A	A	A	A
U.S. Reissue	A	A	A	A	A	A	A	A	A	A	A	A
U.S. Defensive Publication	A	A	A	A	A	A	A	A	A			
U.S. Statutory Invention Registration								A	A	A	A	A
U.S.S.R.	A	A	A	A	A	A	A	A	A	A	A	A
European Patent Appl.	A	A	A	A	A	A	A	A	A	A	A	A
PCT International Appl.	A	A	A	A	A	A	A	A	A	A	A	A

A = all patents of chemical or chemical engineering interest, i.e., patents issued to nationals or non-nationals.

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## Appendix I

### PATENT COVERAGE BY COUNTRY AND TYPE OF PATENT DOCUMENT

	YEAR										
	91	92	93	94	95	96	97	98	99	00	01
Australian	A	A	A	A	A	A	A	A	A	A	A
Australian (Petty)	A	A	A	A	A	A	A	A	A	A	A
Austrian	A	A	A	A	A	A	A	A	A	A	A
Belgian	A	A	A	A	A	A	A	A	A	A	A
Brazilian Pedido	A	A	A	A	A	A	A	A	A	A	A
British	A	A	A	A	A	A	A	A	A	A	A
British Amended	A	A	A	A	A	A	A	A	A	A	A
British U.K. Patent Appl.	A	A	A	A	A	A	A	A	A	A	A
Canadian	A	A	A	A	A	A	A	A	A	A	A
Canadian Application	A	A	A	A	A	A	A	A	A	A	A
China	A	A	A	A	A	A	A	A	A	A	A
Czechoslovakian	R	R									
Czech Republic			R	R	R	R	R	R	R	R	R
Danish	R	R	R	R	R	R	R	R	R	R	R
Finnish	R	R	R	R	R	R	R	R	R	R	R
French	A	A	A	A	A	A	A	A	A	A	A
French Addition											
French Demande	A	A	A	A	A	A	A	A	A	A	A
French Medicinal											
French Addition to Medicinal											
German (East)	A	A	A	A							
German Patentschrift	A	A	A	A	A	A	A	A	A	A	A
German Auslegeschrift											
German Offenlegungsschrift	A	A	A	A	A	A	A	A	A	A	A
Hungarian											
Hungarian Halasztott	R	R	R	R	R	R	R	R	R	R	R
Hungarian Teljes	R	R	R	R	R	R	R	R	R	R	R
Indian	A	A	A	A	A	A	A	A	A	A	A
Israeli	A	A	A	A	A	A	A	A	A	A	A
Italian											
Japanese Tokkyo Koho											
Japanese Kokai Tokkyo Koho	A	A	A	A	A	A	A	A	A	A	A
Korea, Republic of					A	A	A	A	A	A	A
Latvia						R	R	R	R	R	R
Lithuania						R	R	R	R	R	R
Netherlands											
Netherlands Application	A	A	A	A	A	A	A	A	A	A	A
Norwegian	R	R	R	R	R	R	R	R	R	R	R
Polish	R	R	R	R	R	R	R	R	R	R	R
Romanian	A	A	A	A	A	A	A	A	A	A	A
Russian			A	A	A	A	A	A	A	A	A
Slovakia						R	R	R	R	R	R
South African	A	A	A	A	A	A	A	A	A	A	A
Spanish	R	R	R	R	R	R	R	R	R	R	R
Swedish	R	R	R	R	R	R	R	R	R	R	R
Swiss Patentschrift	A	A	A	A	A	A	A	A	A	A	A
Swiss Auslegeschrift	A	A	A	A	A	A	A	A	A	A	A
United States Granted Patent	A	A	A	A	A	A	A	A	A	A	A
U.S. Patent Application Publication											A
U.S. Published Patent Appl. (NTIS, A0)	A	A	A	A	A	A	A	A	A	A	A
U.S. Reissue	A	A	A	A	A	A	A	A	A	A	A
U.S. Defensive Publication											
U.S. Statutory Invention Registration	A	A	A	A	A	A	A	A	A	A	A
U.S.S.R.	A	A	A								
European Patent Appl.	A	A	A	A	A	A	A	A	A	A	A
PCT International Appl.	A	A	A	A	A	A	A	A	A	A	A

A = all patents of chemical or chemical engineering interest, i.e., patents issued to nationals or non-nationals.

R = chemical and chemical engineering patents issued to individuals or organizations resident in the granting country (i.e. nationals) or resident in countries not listed above.

## Appendix II

### CODEN FOR PATENT DOCUMENTS IN THE CAS DATABASE\*

Australia	ALXXAP
Australia (Petty)	AUXXDN
Austria	AUXXAK
Belgium	BEXXAL
Brazil (Pedido)	BPXXDX
Canada	CAXXA4
Canadian Application	CPXXEB
China, People's Rep. of	CNXXEV
Czechoslovakia	CZXXA9
Czech Rep.	CZXXED
Denmark	DAXXAF
Finland	FIXXAP
France	FRXXAK
Addition	FAXXA3
Demande	FRXXBL
Medicinal	FMXXAJ
Addition to Medicinal	FMXXBK
German, Democratic Rep.	GEXXA8
Germany, Fed. Rep. of Patentschrift	GWXXAW
Auslegeschrift	GWXXAW
Offenlegungsschrift	GWXXBX
Utility Model	GGXXFR
Hungary	HUXXAT
Hungary (Halasztott)	HGXXAX
Hungary (Teljes)	HUXXBU
India	INXXAP
Israel	ISXXAQ
Italy	ITXXAX
Japan (Tokkyo Koho)	JAXXAD
Japan (Kokai Tokkyo Koho)	JKXXAF
Japan B1 (Examined application)	JTXXFF
Korea, Republic of	KRXXFC
Latvia	LAXXF6
Lithuania	LIXXFS
Netherlands	NEXXAH
Netherlands Application	NAXXAN
Norway	NOXXAJ
Poland	POXXA7
Romania	RUXXA3
Russia	RUXXE7
Slovakia	SLXXFO
South Africa	SFXXAB
Spain	SPXXAD
Sweden	SSXXAY
Switzerland Patentschrift	SWXXAS
Auslegeschrift	CHXXDM
United Kingdom	BRXXAA
Amended	BSXXAH
U.K. Patent Appl.	BAXXDU
United States Granted Patent	USXXAM
Patent Application Publication (A1, since 2001)	USXXCO
Patent Appl. (NTIS)	XAXXAV
Patent Appl. (Trial Program)	USXXDP
Reissue	UUXXA2
Defensive Publication	USXXBN
Statutory Invention Registration	SRXXEV
U.S.S.R	URXXAF
European Patent Appl.	EPXXDW
PCT International Appl.	PIXXD2

\*CODEN is applied only to the basic patent document in the patent family.

## Appendix III

### Patent Kind Codes for the Countries Covered by CAS

Country Code	Country	Kind Code	Type of Publication or Document Title
AT	Austria	B E	Patent Translation of the EP patent
AU	Australia	B1 B2 B3	Patent (without previous A1) Patent Petty patent
BE	Belgium	A or A1 A2 A3 A4 A5 A6 A7 A8 A9 T1 T2	Patent, French language Patent, Dutch language Patent, German language Improvement patent, French Improvement patent, Dutch Improvement patent, German Patent of importation, French Patent of importation, Dutch Patent of importation, German Transformation of EP patent, French Transformation of EP patent, Dutch
BR	Brazil	A	Patent application after 1975
CA	Canada	A1 A2 A AA B C	Patent/Brevet Patent/Brevet (Division) Patent/Brevet (not distinguished as to A1 or A2) Laid-open Application Reissue Patent/Brevet de Redelivrance Granted Patent (1989 Law)
CH	Switzerland	A  A3 or A4  B	Patentschrift/Expose d'Invention/ Exposto d'Invenzione Main Patent/Patent of Addition unexamined)  Auslegeschrift/Fascicule de la Demande/Fascicolo della Dommanda (Patent application, examined)  Patentschrift/Expose d'Invention/ Expost d'Invenzione (Main Patent/Patent of Addition examined)
CN	China, People's Republic of	A B	Unexamined Patent Application Examined Patent Application

<b>Country Code</b>	<b>Country</b>	<b>Kind Code</b>	<b>Type of Publication or Document Title</b>
CS	Czechoslovakia	B or B1	Popis Vynalezu k Autorskemu Osvedceni (Author's Certificate)
		P or B2	Popis Vynalezu k Patentu (Basic Patent)
		M or B3	Popis Vynalezu k Autorskemu Osvedceni (Addition to Author's Certificate)
		L or B4	Popis Vynalezu k Patentu (Patent of Addition)
		B6	Patentovy Spis (1990 Law) (Patent Document)
CZ	Czech Republic	B6	Patentovy Spis (Patent)
DD	German Democratic Republic	Z or A1	Patentschrift, Wirtschaftspatent (Economic Patent, formal examination)
		Y or A2	Patentschrift, Wirtschaftspatent (Economic Patent of Addition, formal examination)
		C or A5	Patentschrift, Ausschliessungspatent (Exclusive patent, formal exam.)
		W or A6	Patentschrift, Ausschliessungspatent (formal examination; Addition)
		T or A3	Patentschrift, Hauptpatent (formal and essential examination)
		U or A4	Patentschrift, Hauptpatent (formal and essential examination; Addition)
		D or A7	Patentschrift, Ausschliessungspatent (formal and essential examination)
		S or A8	Patentschrift, Ausschliessungspatent (formal and essential examination; Addition)
DE	Germany	A or A1	Offenlegungsschrift (unexamined application)
		B	Auslegenschrift
		B1	Auslegeschrift (examined application, first publication)
		B2	Auslegeschrift (examined application, published after A1)
		C	Patentschrift (patent)
		C1	Patentschrift (published without A1, B1, or B2; patent, 1st publication of the application)
		C2	Patentschrift (patent, 2nd publication after B2)
		C3	Patentschrift (patent, old law, published after A1 and B2)
		T	Translation of the Int. Application, "pink" spec.
		U1	Utility Model
DK	Denmark	B	Fremlaeggelsesskrift (Examined Application)
		B1	Meddett (1993 Law)
		B2, B3, B4	Patentskrift (1993 Law)
		C	Patent

<b>Country Code</b>	<b>Country</b>	<b>Kind Code</b>	<b>Type of Publication or Document Title</b>
EP	EPO (European Patent Organization)	A1	European Patent Application (with search report)
		A2	European Patent Application (without search report)
		A3	European Patent Application (search report for A2)
		B1	European Patent
		B2	European Revised Patent
ES	Spain	A1	Patent
		A2	Certificate of Addition
		A3	Patent of Importation
		A4	Patent publications not distinguished as A1-A3
		A6	Certificate of Addition, fictitious 2nd publication
		T3	Patent of Invention
FI	Finland	B	Examined Application
		C	Patent
FR	France	A	Brevet d'Invention (old law)
		A1	Unexamined Patent Application
		A2	Unexamined Addition to a patent applic.
		A3	Unexamined utility model appl.
		A4	Unexamined addition to utility model
		A5	Patent, 1st publication (without A1)
		A6	Patent of addition, 1st publication (published without A2)
		A7	Utility model, 1st publ. (without A3)
		A8	Addition to Utility Model (1st publ. without A4)
		B1	Patent granted after examination
		B2	Addition to a Patent after examination
		B3	Utility model after examination
		B4	Addition to utility model after exam.
E	Addition to a Patent (before 1969)		
M	Medical Patent (before 1969)		
GB	United Kingdom	AO	Application for Patents
		A	Patent Specification (1949 Law: Document numbers lower than 2,000,00)
		A or A1	Patent Application (1977 Law; Document numbers higher than 2,000,000)
		B	Amended Patent Specification (1949 Law Document numbers lower than 2,000,000)
B2	Patent Specification (1977 Law; Document numbers higher than 2,000,000)		



<b>Country Code</b>	<b>Country</b>	<b>Kind Code</b>	<b>Type of Publication or Document Title</b>
HU	Hungary	P or B A or A1  O or A2	Szabadalmi Leiras (Patent) Halasztott Talalmanyi Bejelentés (unexamined patent application) Teljes Talalmanyi Bejelentés (examined patent application)
IL	Israel	A1	Application for Patent
IN	India	A	Specification
JP	Japan	A2  B1  B2 B4  T2	Kokai Tokkyo Koho (unexamined patent application) Examined application (1st publication) without previous A2 Toroku (Granted Patents) Tokkyo Koho (examined patent application) Kohyo Koho (Japanese translation of PCT applications filed by foreign applicants)
KR	Korea, Republic of	B1	Examined patent application (2nd publication)
LT	Lithuania	B	Patento Aprasymas (Patent)
LV	Latvia	B	Iszinas (Patent)
NL	Netherlands	A B C A1 C1 C2	Unexamined patent appl. Examined patent appl. Patent Inschrijving Octrovi - 6 yr. Octrovi - 20 yr.
NO	Norway	B C	Examined patent appl. Patent
PL	Poland	B M  P or B1 P or B2  L or B3 L or B4	Opis Patentowy (Inventor Certificate) Opis Patentowy (Inventor Certificate; Addition) Opis Patentowy (Main Patent) Opis Patentowy Patentu Tymczasowego (Provisional Patent) Opis Patentowy (Patent of Addition) Opis Patentowy Patentu Tymczasowego (Provisional Patent of Addition)
RD			Research Disclosure

<b>Country Code</b>	<b>Country</b>	<b>Kind Code</b>	<b>Type of Publication or Document Title</b>
RO	Romania	B or B1 L or B4 M or B2 P or B3	Descrierea Inventiei (Inventor Certificate) Descrierea Inventiei (Patent of Addition) Descrierea Inventiei (Inventor Certificate; Addition) Descrierea Inventiei (Patent)
RU	Russia	C1 or C2	Patent
SE	Sweden	B C C2	Examined patent application Patent Patent (1949 Law)
SK	Slovakia	B6	Patentovy Spis (Patent)
SU	USSR	D or A3 T or A1 S or A4 U or A2	Patent Inventor's Certificate Patent of Addition Addition to Inventor's Certificate
US	United States	A A1 A0 A2  A1/A2  A9  B1, B2, B3  B1  B2  C1, C2, C3  E H H1	Granted US Patent (issued prior to Jan 2, 2001) US Patent Application (issued on or after Jan 2, 2001) US Published Patent Application (NTIS; 1974-) Republished US Patent Application (issued on or after Jan 2, 2001) United States Patent Application (Trial Program; 1975 - 1976) Corrected US Patent Application (issued on or after Jan 2, 2001) Reexamination Certificate (1st, 2nd, 3rd issue, issued prior to Jan 2, 2001) Granted Patent (no pre-grant publication; issued on or after Jan 2, 2001) Granted Patent (with pre-grant publication; issued on or after Jan 2, 2001) Reexamination Certificate (1st, 2nd, 3rd issue; issued after Jan 2, 2001) Reissue Patent (1967- ) United States Defensive Publication (1969-1987) Statutory Invention Registration (1986- )
WO	WIPO (World Intellectual Property Organization)	A1 A2 A3	PCT International Application (with search report) PCT International Application (without search report) PCT International Application (search report for A2)
ZA	South Africa	A A1	Application for Patent Application for Patent (used to distinguish a document with the same number as a previously published document)

## Appendix IV

### IPC SELECTION TABLE PRIOR TO 1996

Class/ Subclass	Subject Matter	Groups selected for CA prior to 1996
<b>A: HUMAN NECESSITIES</b>		
A01N	Biocides, pesticides, herbicides, and plant growth regulators.	All groups
A21D	Baking additives and preservatives.	2/00-2/32, 2/40
A23B	Ripening and preservation of fruits and vegetables.	1/00, 1/01, 1/03, 1/04, 1/08, 1/10, 1/12, 1/14 3/00, 3/01, 3/04, 3/08, 3/10, 3/12, 3/14 4/00, 4/02, 4/023,4/027,4/033,4/04, 4/048,4/08 4/10-4/24, 5/00, 5/025,5/05, 5/06-5/18 7/00, 7/022,7/05, 7/08, 7/10, 7/14-7/157, 7/16 9/00, 9/14-9/30
A23C	Dairy products.	1/16 3/00, 3/08 5/00 7/00, 7/02, 7/04 9/00, 9/08, 9/10, 9/12-9/158, 9/20 11/00-11/10 13/00,13/02,13/08,13/10,13/16 15/00,15/16,15/18,15/20 17/00,17/02 19/00,19/02,19/032-19/06, 19/08, 19/082, 19/084 19/097, 19/10, 19/11, 19/14, 20/00,20/02 21/00-21/10, 23/00
A23D	Butter substitutes, edible oils, and fats.	3/00-3/04 5/00-5/04 7/00-7/06 9/00-9/06
A23F	Coffee, tea and substitutes.	1/00, 1/02, 1/04, 1/06, 1/08, 1/10, 1/14, 1/16 3/00, 3/02, 3/06, 3/08, 3/10, 3/14, 3/16, 3/18 3/20, 3/34-3/42 5/00, 5/14-5/26, 5/40-5/50
A23G	Cocoa, chocolate, confectionery, ice cream.	1/00, 1/02 3/00, 3/32

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
A23J	Phosphatide and protein compositions for food.	1/00-1/08, 1/10-1/20 3/00-3/22, 3/28-3/34, 7/00, 7/02
A23K	Fodder.	1/00-1/22, 3/00, 3/02, 3/03
A23L	Miscellaneous food preparation and preservation.	1/00-1/105, 1/186, 1/19, 1/195, 1/20, 1/201, 1/202, 1/204, 1/205, 1/207, 1/211, 1/212, 1/214, 1/216, 1/218, 1/22, 1/221, 1/222, 1/226-1/237, 1/26, 1/27-1/31, 1/314, 1/318 1/325, 1/328, 1/42, 2/00, 2/16, 2/18, 2/26-2/40, 3/00, 3/34, 3/3409, 3/3427, 3/3436, 3/3454, 3/3463, 3/3481-3/358, 3/37, 3/38, 3/42
A24B	Manufacture and preparation of tobacco.	3/00, 3/12 15/00,15/02,15/027,15/033,15/04,15/05, 15/06,15/08, 15/10-15/20, 15/24-15/42
A24D	Tobacco products and accessories.	1/06 3/00-3/16
A61K	Medical, dental, and toilet preparations.	all groups
A61L	Sterilization, disinfection, and deodorization.	1/00 2/00, 2/02, 2/14-2/22, 9/01-9/04, 9/06, 9/08, 9/10, 9/14, 9/22, 11/00 13/00, 13/02, 13/04, 13/06, 15/00, 15/01, 15/03, 15/04, 15/06, 15/07-15/34, 15/38-15/64, 17/00, 17/02, 23/00 25/00 27/00 29/00 31/00 33/00
A61M	Devices for introducing media into or onto the body.	1/14, 1/16, 1/18, 1/22-1/38
A62D	Chemical fire extinguishers; chemical agent antidotes; chemical breathing-apparatus materials.	1/00-1/08, 3/00 5/00 7/00, 7/02, 9/00

Class/ Subclass	Subject Matter	Groups selected for CA prior to 1996
<b>B: PERFORMING OPERATIONS</b>		
B01B	Boiling and its apparatus.	1/00, 1/02, 1/04, 1/08
B01D	Separation.	1/00, 1/14-1/28, 3/00-3/42 5/00 7/00, 7/02, 8/00 9/00, 9/02, 9/04, 11/00, 11/02, 11/04, 12/00 13/00, 13/01, 13/02, 13/04, 15/00-15/08, 17/00, 17/02, 17/022, 17/025, 17/032, 17/035, 17/038, 17/04, 17/05, 17/06, 17/08, 17/09, 17/10, 17/12, 19/00, 19/02, 19/04, 21/00, 21/01, 21/02, 21/08, 21/10, 21/12, 21/14,21/16, 23/00, 23/02, 23/08, 23/10, 23/14, 24/00, 24/02, 24/28, 24/36, 25/00, 25/02, 25/04, 25/06, 25/08, 25/10, 25/12, 25/16, 25/22, 25/24, 25/26, 25/28, 27/00-27/04, 29/00 31/00, 31/02, 33/00 35/00, 35/01, 35/02, 35/04, 35/10, 36/00, 36/02, 36/04, 37/00-37/08, 39/00-39/20, 41/00-41/04, 43/00 45/00 46/00, 46/02, 46/04, 46/10, 46/18, 46/24, 46/28, 46/30, 46/38, 46/40, 46/52, 46/54, 47/00-47/06, 47/10, 47/12, 47/16, 49/00, 49/02, 50/00 51/00-51/06, 51/10, 53/00-53/36, 57/00, 57/02, 59/00-59/12, 59/16-59/50, 61/00-61/58, 63/00-63/16, 65/00-65/10, 67/00 69/00-69/14, 71/00-71/82, 101/00-101/02

Class/ Subclass	Subject Matter	Groups selected for CA prior to 1996
B01F	Mixing, dissolving, emulsifying, and dispersing	1/00 3/00-3/32, 5/00-5/12, 5/18, 5/24, 5/26, 7/00, 7/02, 7/16 9/00, 9/02, 9/10 11/00 13/00-13/10, 17/00-17/56
B01J	Chemical or physical processes.	1/00, 1/04, 1/06, 1/08, 1/09, 1/10, 1/12, 1/14, 1/18, 1/20, 1/22, 1/24, 2/00-2/30, 3/00-3/08, 4/00-4/04, 6/00 7/00, 7/02, 8/00-8/28, 8/32, 8/36-8/46, 9/00-9/24, 10/00, 10/02, 11/00-11/84, 12/00, 12/02, 13/00-13/22, 14/00 15/00 16/00 17/00-17/40, 19/00, 19/02, 19/04, 19/06, 19/08, 19/14-19/32, 20/00-20/34, 21/00-21/20, 23/00-23/96, 25/00-25/04, 27/00-27/32, 29/00-29/38, 31/00-31/40, 32/00 33/00 35/00-35/12, 37/00-37/36, 38/00-38/74, 39/00-39/24, 41/00-41/18, 43/00 45/00 47/00-47/14, 49/00, 49/02

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
B01K	Electrochemical process and apparatus; Electrophoresis	1/00 3/00, 3/02, 3/04, 3/06, 3/08, 3/10, 3/12, 5/00, 5/02
B01L	Chemical or physical laboratory apparatus.	3/00-3/18, 5/00-5/04, 7/00, 7/02, 11/00, 11/02
B03D	Floatation; differential sedimentation.	1/00-1/14, 3/00, 3/02, 3/06, 101/00-101/06, 103/00-103/10
B04B	Centrifuges.	1/00 3/00 5/00
B05D	Application of liquids to surfaces.	3/00-3/10, 5/00-5/12, 7/00-7/26
B09B	Solid-waste disposal.	3/00 5/00
B22C	Foundry molding.	1/00-1/26 3/00
B22D	Casting of metals and other substances.	1/00 21/00-21/06, 23/00,23/04,23/06,23/10, 27/00,27/18,27/20
B22F	etalic powders and their working.	1/00, 1/02, 9/00, 9/12, 9/16-9/30.
B23H	Working metals by electric currents using electrodes	3/00, 3/04-3/10, 5/00, 5/02, 5/06-5/14, 11/00
B23K	Soldering, welding, cladding, or plating by such processes, cutting by heat, laser working.	35/00, 35/22-35/40, 103/00-103/24
B27K	Staining, impregnating, dyeing and bleaching of wood and similar materials.	3/00, 3/02, 3/12, 3/15, 3/16-3/52, 5/00-5/06, 7/00 9/00
B27L	Chemical debarking.	3/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
B27N	Manufacture by dry process of articles, articles, with or without organic binding agents, made from particles or fibers consisting of wood or other lignocellulosic or similar organic materials.	1/00, 1/02 3/00-3/06, 5/00-5/02, 7/00
B29K	Molding-material indexing scheme associated with processing subclasses B29B, C, or D.	1/00-105/06, 105/24
B32B	Layered products.	9/00-29/08
B41M	Printing and copying.	1/00-1/42, 5/00-5/22, 5/26-7/02
B41N	Printing surfaces and their preparation.	3/03 5/00, 5/02 6/00, 6/02
B44D	Treatment of artistic works.	5/00, 5/02, 5/04, 5/06, 5/08, 5/12 7/00
<b>C: CHEMISTRY AND METALLURGY</b>		
C01B	Nonmetallic elements and their compounds.	all groups
C01C	Ammonia, cyanogen, and their compounds.	all groups
C01D	Alkali-metal compounds.	all groups
C01F	Compounds of the metals Be, Mg, Al, Ca, Sr, Ba, Ra, Th, or of the rare-earth metals.	all groups
C01G	Compounds containing metals not covered by subclasses C01D or C01F.	all groups



<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
C02B	Water treatment.	all groups
C02C	Treatment of waste-water sewage, or sludge.	all groups
C02D	Water impregnated with carbon dioxide or other gases.	all groups
C02F	Treatment of water, waste water, sewage, or sludge.	all groups
C03B	Manufacture, shaping, or supplementary processes for glass, or mineral or slag wool	5/42, 5/425, 5/43 8/00-8/04 18/18, 18/20 19/12, 19/14 27/008 37/005, 37/01,37/012-37/018, 37/023, 37/027, 37/075 40/00, 40/02, 40/033,40/04
C03C	Compositions and surface treatment of glass, or mineral or slag wool.	all groups
C04B	Lime, magnesia, cements, ceramics, and refractories.	all groups
C05B	Phosphate fertilizers.	all groups
C05C	Nitrogen fertilizers.	all groups
C05D	Inorganic fertilizers.	all groups
C05G	Fertilizer mixtures.	all groups
C06B	Explosive or thermic compositions.	all groups
C06C	Detonating or priming devices, fuses, chemical lighters, pyrophoric compositions.	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
C06D	Smoke or mist generation, gas-attack compositions, gas generation for blasting or propulsion.	all groups
C06F	Matches and their manufacture.	3/00-3/08
C07	Organic chemistry.	subclasses B,C,D,F,G,H,J,K, all groups.
C08	Macromolecular compounds and compositions.	subclasses B,C,D,F,G,H,J,K,L, all groups.
C09	Dyes, paints, polishes, natural resins, and adhesives, their compositions and applications.	subclasses B,C,D,F,G,H,J,K, all groups.
C10	Petroleum, gas, coke, fuels, lubricants.	subclasses B,C,G,H,J,K,L,M,N, all groups.
C11B	Animal and vegetable oils, fats, and waxes, and essential oils or perfumes.	all groups
C11C	Fatty acids and chemical modification of fats, oils, or fatty acids.	all groups
C11D	Detergents, soaps, and their compositions.	all groups
C12	Biochemistry, alcoholic beverages, microbiology, enzymology, and genetic engineering.	subclasses B,C,D,F,G,H,J,K,M,N,P,Q; all groups.
C12S	Use of enzymes or micro-organisms in processes to liberate, separate or purify compds. or compns.; to treat textiles or to clean solid surfaces.	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
C13D	Sugar and starch industry. Production or purification of sugar juices.	1/00-1/04, 1/08, 1/10, 1/14, 3/00-3/18
C13F	Preparation or processing of raw sugar, sugar, or syrup.	1/00-3/00
C13G	Evaporation apparatus; boiling pans.	1/00
C13J	Extraction of sugar from molasses.	all groups
C13K	Glucose, invert sugar, lactose, maltose, sugar synthesis by hydrolysis of di- or polysaccharides.	all groups
C13L	Starch, dextrin, or similar carbohydrates.	all groups
C14C	Chemical treatment of skins, hides, pelts, and leather, and tanning compositions.	all groups
C21B	Manufacture of iron or steel.	1/00-7/08, 7/14, 7/16, 11/00, 11/02, 11/06, 11/08, 11/10, 13/00-13/14, 15/00-15/04
C21C	Processing of pig iron.	1/00-1/04, 1/08, 1/10, 3/00-5/40, 5/44-5/48, 5/52-5/56, 7/00-7/10
C21D	Metallurgy of ferrous metals.	1/00, 1/02, 1/06-9/52, 10/00, 11/00
C22B	Production and refining of ferrous and nonferrous metals.	1/00-9/187, 9/20-61/06
C22C	Alloys.	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
C22D	Electrolytic and electrothermal production and refining of metals.	all groups
C22F	Metallurgy of non-ferrous metals and alloys.	all groups
C23B	Electrolytic surface treatment of metals.	all groups
C23C	Coating and surface treatment of metallic materials.	1/00-14/34, 14/36-30/00
C23D	Enameling or vitreous layer application to metals.	1/00-7/00, 11/00-17/00
C23F	Surface treatment or corrosion and incrustation inhibition of metallic materials.	all groups
C23G	Chemical cleaning or degreasing treatment of metallic materials.	1/00-1/36, 5/00-5/06
C25B	Electrolytic and electrophoretic processes for production of compounds or nonmetals.	all groups
C25C	Electrolytic production, recovery, or refining of metals.	all groups
C25D	Electrolytic and electrophoretic production of coatings and electroforming.	1/00-13/20, 13/24-21/22
C25F	Electrolytic removal of materials from objects.	all groups
C30B	Crystal growth.	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
<b>D: TEXTILES, PAPER</b>		
D01C	Chemical treatment to obtain fibers and filaments.	1/00, 1/02, 3/00, 3/02, 5/00
D01F	Chemical features in producing artificial fibers and filaments.	all groups
D04H	Fabric production.	1/00, 1/04-1/14, 1/40, 1/58, 1/60, 1/64, 1/68, 3/00, 3/08, 3/12, 5/00, 5/04
D06B	Textile treatment.	7/00-9/06
D06L	Bleaching, dry cleaning or washing fibers and fabrics.	all groups
D06M	Miscellaneous textile and fiber treatment.	1/00-10/00, 10/04-23/18, 101/00-101/40
D06N	Covering materials for walls, floors, and roofs.	all groups
D06P	Dyeing and printing of textiles, leathers, furs, or macromolecular materials.	all groups
D06Q	Textile decoration.	1/00-1/08, 1/12, 1/14
D21C	Cellulose production and pulping-liquor regeneration.	1/00-1/08, 3/00-7/00, 9/00-11/14
D21H	Pulp compositions, impregnating or coating of paper.	1/00-13/50, 17/00-21/48, 23/00-23/10, 23/20, 23/76, 25/00, 25/02, 27/00, 27/02, 27/08-27/12, 27/18, 27/36
<b>E: FIXED CONSTRUCTIONS</b>		
E21B	Earth drilling for petroleum, gas, water, or minerals.	43/00,43/16,43/17,43/22,43/24,43/241,43/25, 43/26,43/263,43/27,43/28,43/285,43/29,43/295

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
E21F	Safety devices for mines or tunnels.	5/00, 5/02, 5/06, 5/16, 5/18
<b>F: MECHANICAL ENGINEERING: LIGHTING, HEATING, WEAPONS, BLASTING</b>		
F21K	Uncommon light sources.	2/00-2/08
F23G	Consuming waste products by combustion.	5/00-5/027, 7/00, 7/04-7/06, 7/12
F24J	Production or use of heat not provided for otherwise.	1/00, 1/02, 1/04
F25J	Liquefaction, solidification, or separation of gases or their mixtures.	1/00-3/08
<b>G: PHYSICS</b>		
G01K	Measuring temperature, quantity of heat; thermally sensitive elements.	11/00-11/30
G01N	Analyzing materials by determining their chemical and physical properties.	5/00-7/20, 9/00-15/08, 17/00-21/11, 21/14, 21/17-21/35, 21/38-21/55, 21/58-21/80, 21/82-21/85, 21/91-23/14, 23/20-25/70, 27/00-27/18, 27/22, 27/26-27/60, 27/62-27/78, 27/92-29/02, 29/16-29/20, 30/00-33/48, 33/50-33/98, 35/08 37/00
G01R	Measuring electric and magnetic variables.	13/12, 13/14 23/16,23/165,23/167 33/035-33/06, 33/12, 33/16-33/20, 33/26-33/64
G01T	Measurement of x-rays or nuclear radiation.	1/00-1/10, 1/11, 1/12, 1/14, 1/16, 1/167, 1/169, 1/178, 1/185, 1/20-1/205, 1/22-5/10, 7/00-7/06

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
G02B	Optical elements, systems or apparatus.	1/00-1/12, 5/00, 5/18-6/02, 6/10, 6/16-6/26, 6/30, 6/34, 13/14 26/00-26/06, 27/00, 27/10-27/14, 27/28, 27/30, 27/42, 27/44, 27/48, 27/56, 27/60
G02C	Spectacles, sunglasses or goggles.	7/00, 7/02, 7/04, 7/10, 7/12
G02F	Devices or arrangements whose optical operations are modified by changing their medium.	1/00-1/133, 1/1337-1/155, 1/161-1/295, 1/313, 1/315, 1/33, 1/35, 1/39
G03C	Photosensitive compositions.	1/00-1/76, 1/77-1/95, 3/00-11/24
G03F	Photomechanical production of textured or patterned surfaces.	1/00-1/16, 7/00-7/18, 7/26-7/42
G03G	Electrophotography and electrography.	5/00-13/08, 13/10, 13/14-13/32, 16/00 17/00-17/04, 17/08, 17/10, 21/00
G03H	Holographic processes or apparatus.	all groups
G04B	Sealing materials for mechanically driven clocks or watches.	37/02, 37/08-37/11, 37/22-39/02, 43/00
G04F	Time interval measuring.	1/02 5/14, 5/16 10/08 13/04
G04G	Visual time or date indication means for electronic time pieces.	9/04, 9/06, 9/10, 9/12
G05D	Systems for controlling or regulating nonelectric variables.	21/00-22/02, 24/00, 24/02
G06F	Digital computers with partly or completely electric computations.	15/40-15/415, 15/46, 15/52

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
G06G	Analog computers with varying electric or magnetic quantities.	7/54-7/58, 7/75
G08B	Fire and explosion alarms.	17/10, 17/103, 17/11-17/12
G09B	Scientific models for education or demonstrations.	23/20, 23/24, 23/26
G11C	Digital information storage by chemical-change means.	13/02
G21B	Fusion reactors.	1/00, 1/02
G21C	Nuclear reactors.	1/00-3/02, 3/07, 3/17-3/28, 3/324, 3/326, 3/38-5/00 5/12, 5/18, 5/20 7/00-7/08, 7/103, 7/107, 7/22-7/34 9/008, 9/02-9/06 11/06, 11/08 13/028,13/08,13/087, 15/243-15/247, 15/253, 15/257, 15/28, 19/00, 19/30-19/317, 19/38, 9/42-21/02, 21/18, 23/00
G21F	Radiation protection and decontamination.	1/00-1/12 5/00-5/008, 5/015, 9/00-9/36
G21G	Chemical element conversion and radioactive sources.	1/00-1/12, 3/00-3/04, 4/00-5/00
G21H	Energy from radioactive sources, and radiation applications.	all groups
G21J	Nuclear explosives and their applications.	1/00 5/00
G21K	Techniques for handling particles or electromagnetic radiation.	all groups



<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
<b>H: ELECTRICITY</b>		
H01B	Cables, conductors, insulators, and dielectrics.	1/00-3/56, 12/00 17/00, 17/06-17/16, 17/20
H01C	Resistors.	17/00, 17/06-17/16, 17/20
H01F	Magnetic materials and inductors.	1/00-1/375 4/00, 4/04-4/22 5/00, 5/20, 5/22, 5/28, 10/00-10/30, 41/00, 41/14-41/28
H01G	Capacitors.	9/00-9/05, 9/22, 9/24
H01J	Electric-discharge tubes or discharge lamps.	1/00-1/05, 1/12, 1/14, 1/30-1/38, 1/46, 1/48, 1/53, 1/54, 1/58-1/63, 1/78, 7/00-7/12, 9/00-9/04, 9/12, 9/14, 9/20-9/233, 13/00-13/08, 13/16, 13/28, 15/00, 15/02, 17/00-17/10, 19/00-19/06, 19/24-19/32, 21/00, 21/02, 21/20 27/00-27/04, 27/20-27/26, 29/00-29/04, 29/08, 29/10, 29/16-29/20, 29/26, 29/36 31/00, 31/08 35/00-35/08, 35/20, 37/00, 37/252, 37/26-37/28, 37/295, 37/32-37/36 40/00-40/06, 40/10, 40/16, 40/18 43/00-43/04, 45/00 47/00-47/14, 49/00, 49/02, 49/10-49/18, 49/26, 49/44 61/00-61/073, 61/12-61/22, 61/58-61/64, 61/70-61/76, 61/80, 63/00-65/08
H01K	Electric incandescent lamps.	1/00-1/10, 1/50
H01L	Semiconductor devices.	3/00-3/24, 7/00-7/62, 21/00-21/302, 21/306-21/445, 21/46, 21/461, 21/465-21/479, 21/64, 21/70-21/86, 27/00-27/15, 27/18-29/04, 29/12-29/28, 29/36-29/42, 29/46-29/50, 29/54-29/58, 29/62-29/816, 29/86-31/0232, 31/0248-31/0344, 31/036-31/042, 31/052, 31/055, 31/06-35/00, 35/12-35/28, 35/32-39/06, 39/10-49/02

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups selected for CA prior to 1996</b>
H01M	Processes or means for direct conversion of chemical into electric energy.	2/00, 2/14, 2/16, 2/20, 2/32, 4/00-4/20, 4/22, 4/24-4/68, 4/72-4/76, 4/80-6/48, 8/00, 8/02, 8/06-10/00, 10/04-10/12, 10/18-10/40, 10/52, 12/00-12/08, 13/00-13/10, 14/00 15/00-15/06, 16/00 17/00-17/06, 19/00 21/00-21/14, 23/00-23/10, 27/00-27/30, 29/00-29/04, 33/00 35/00-35/20, 35/26-35/32, 39/00, 39/04, 39/06, 41/00, 41/02, 43/00-43/06, 47/00
H01S	Stimulated emission devices.	1/00-3/03, 3/038, 3/09-3/10, 3/102-3/104, 3/113, 3/13-3/134, 3/14-4/00
H05B	Electric heating and lighting.	33/00, 33/10-35/00
H05G	X-ray technique.	2/00
H05H	Plasma techniques production of charged particles or neutrons, and production or acceleration of neutral molecular or atomic beams.	1/00, 1/24, 1/26, 1/54-6/00, 9/00-15/00
H05K	Printed circuits, electric-apparatus structural details.	1/00-1/09, 1/16, 3/00-3/02, 3/06, 3/07, 3/10, 3/14-3/18, 3/22, 3/28, 3/44, 3/46

## Appendix V

### IPC SELECTION TABLES (1996 - JUNE 2000)

#### Table I: Guaranteed Coverage

Beginning January 1, 1996, patent documents that had one or more of these IPC codes were guaranteed to be abstracted and indexed for the CAS database.

#### Table II: Selective Coverage

Table II lists the IPC groups that have been selectively covered by CAS. In addition, starting in 1999, the following patents with the IPCs listed in Table II are guaranteed to be included in CAplus:

- US patents issued on July 13, 1999 or later
- Japanese patents issued on July 27, 1999 or later
- WIPO patents issued on August 5, 1999 or later
- German patents issued on December 16, 1999 or later

#### IPC List I: Guaranteed Coverage (1966-June 2000)

Class/ Subclass	Subject Matter	Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)
<b>A: HUMAN NECESSITIES</b>		
A01N	Biocides, pesticides, herbicides, and plant growth regulators	27/00-29/00, 29/02-61/02, 65/02
A21D	Baking additives and preservatives	2/02-2/32
A23D	Edible oils or fats, e.g. margarines, cooking oils and shortenings	7/005-7/01, 9/007, 9/013
A23L	Miscellaneous food preparation and preservation	3/34-3/3409, 3/3427-3/3436, 3/3454-3/3463, 3/3481-3/3562, 3/358, 3/37, 3/42
A24B	Manufacture and preparation of tobacco	15/00-15/20, 15/26-15/42
A61K	Medical, dental and toilet preparations	6/00-6/10, 7/16-7/24, 7/28-7/38, 9/107-9/113, 9/28-9/46, 9/56-9/66, 31/00-33/44, 37/00-38/58, 47/00-47/48, 51/00-123/00
A61L	Sterilization, disinfection and deodorization	9/02, 15/12, 15/22-15/34, 15/38
<b>B: PERFORMING OPERATIONS; TRANSPORTING</b>		
B01D	Separation	3/12, 7/02, 9/00-15/08, 53/48-53/72, 53/86, 53/90, 53/94, 59/00-61/04, 61/14-61/16, 61/36-61/44, 61/56-61/58, 65/06-65/08, 71/00-71/82, 111/00-157/10, 161/00-187/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
B01F	Mixing, dissolving, emulsifying or dispersing	17/00-17/56
B01J	Chemical or physical processes	10/00-10/02, 12/00-12/02, 13/14-13/18, 14/00-16/00, 19/14-19/16, 20/00-47/12, 101/00-105/98
B03D	Flotation and differential sedimentation	1/002-1/018
B09C	Reclamation of contaminated soil	1/08
B22C	Foundry molding	1/00-3/02
B22F	Manufacture and working of metallic powder	1/00-1/02
B23K	Soldering, welding, cladding or plating by applying heat locally	103/00-103/24
B27K	Staining, dyeing, impregnation and bleaching of wood and similar materials	3/15-3/42, 3/50-3/52
B29K	Molding material indexing scheme associated with processing subclasses B29B, C or D	1/00-19/00, 23/00-103/08, 105/16-105/18, 105/22, 201/00-711/14
B32B	Layered products	23/20-23/22, 25/14-27/42
B41M	Printing and copying	5/132-5/155, 5/28-5/32
<b>C: CHEMISTRY; METALLURGY</b>		
C01B	Nonmetallic elements and their compounds	all groups
C01C	Ammonia, cyanogen and their compounds	all groups
C01D	Alkali metal compounds	all groups
C01F	Compounds of Be, Mg, Al, Ca, Sr, Ba, Ra, Th or the rare earth metals	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C01G	Compounds containing metals covered by C01D or C01F	all groups
C02F	Treatment of water, wastewater, sewage or sludge	1/28, 1/42-1/469, 1/50-1/72, 1/76-1/78, 5/00-5/14, 11/14
C03B	Manufacture, shaping or supplementary processes for glass, mineral or slag wool	8/00-8/04, 37/014-37/018
C03C	Chemical compositions and surface treatment of glass, mineral or slag wool	00/00-25/06
C04B	Lime, magnesia, cements, ceramics, and refractories	00/00-7/345, 7/60-16/12, 22/00-103/69, 111/10-111/28
C05B	Phosphate fertilizers	all groups
C05C	Nitrogen fertilizers	all groups
C05D	Inorganic fertilizers	all groups
C05G	Fertilizer mixtures	all groups
C06B	Explosives or thermic compositions	23/00-49/00
C06C	Detonating or priming devices, fuses, chemical lighters and pyrophoric compositions	15/00
C06D	Smoke or mist generation, gas-attack compositions and gas generation for blasting or propulsion	all groups
C06F	Matches and their manufacture	3/00-3/08
C07B	General methods and apparatus for organic chemistry	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C07C	Acyclic or carbocyclic compounds	all groups
C07D	Heterocyclic compounds	all groups
C07F	Acyclic, carbocyclic or heterocyclic compounds containing elements other than C, H, halogen, O, N, Se or Te	all groups
C07G	Compounds of unknown constitution	all groups
C07H	Sugars and their derivatives, nucleosides, nucleotides and nucleic acids	all groups
C07J	Steroids	all groups
C07K	Peptides	all groups
C07M	Indexing scheme associated with subclasses C07B to K	all groups
C08B	Polysaccharides and derivatives	all groups
C08C	Treatment or chemical modification of rubbers	all groups
C08F	Macromolecular compounds obtained by reactions only involving C-to-C unsaturated bonds	all groups
C08G	Macromolecular compounds obtained otherwise than by reactions only involving C-to-C unsaturated bonds	all groups
C08H	Derivatives of natural macromolecular compounds	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C08J	Work-up, compounding and after-treatment	all groups
C08K	Inorganic or non-macromolecular compounding ingredients	all groups
C08L	Compositions of macromolecular compounds	all groups
C09B	Organic dyes and mordants	all groups
C09C	Treatment of inorganic materials to enhance their pigmenting or filling properties	all groups
C09D	Coating compositions, inks, lacquers, etc.	all groups
C09F	Natural resins	all groups
C09G	Polishing compositions	all groups
C09H	Preparation of glue or gelatin	00/00, 3/00-7/00
C09J	Adhesives	00/00, 1/00-4/06, 9/00-201/10
C09K	Materials for miscellaneous applications	00/00, 5/00-15/32, 17/02, 17/06-17/08, 17/12-17/30, 17/36-21/14
C10C	Work-up of tar, pitch, asphalt or bitumen	1/08-1/12, 1/20, 3/02-3/04, 5/00
C10G	Petrochemistry	00/00-7/10, 9/00-9/02, 9/06, 9/34-9/38, 1/00-21/28, 23/00-71/00, 71/04-75/04
C10H	Production of acetylene by wet methods	all groups
C10J	Production of fuel gases	1/00-3/70
C10K	Purifying or modifying CO-containing combustible gas	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C10L	Fuels	00/00-5/40, 7/00-11/04
C10M	Lubricating compositions	all groups
C10N	Indexing scheme associated with subclass C10M	00/00, 20/04, 30/00-30/20, 40/26-40/28, 60/00-80/00
C11B	Animal and vegetable oils, fats and waxes and essential oils for perfumes	all groups
C11C	Fatty acids and chemical modification of fats, oils or fatty acids	00/00-3/14
C11D	Detergent compositions and soaps	00/00-15/04, 19/00
C12F	Recovery of byproducts of fermented solutions	00/00, 3/00-3/04, 5/00
C12G	Wine and other alcoholic beverages	1/022, 1/04, 1/10-1/12, 3/12
C12H	Pasteurization, sterilization, preservation, purification, etc., of alcoholic beverages	1/04-1/056, 1/10, 1/14-1/15, 3/00-3/04
C12J	Vinegar and its preparation	00/00-1/06, 1/10
C12N	Microorganisms and enzymes	1/08, 1/11, 1/13, 1/15, 1/19, 1/21-1/32, 1/38, 5/10-5/28, 7/01, 7/06, 9/00-11/18, 15/00-15/90
C12P	Fermentation for synthesis or separation of isomers	all groups
C12Q	Enzyme- and microorganism-based measuring or testing methods	1/25-1/62, 1/66-1/68



<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C12S	Enzyme- and microorganism-based processes for liberation, separation or purification of compounds	1/00-1/02, 3/02-3/04, 3/08, 3/14-3/20, 5/00
C13D	Production or purification of sugar juices	3/00-3/18
C13J	Extraction of sugar from molasses	all groups
C13K	Glucose, invert sugar, lactose, maltose and sugar synthesis by hydrolysis of di- or polysaccharides	all groups
C14C	Chemical treatment of skins, hides and leather and tanning compositions	all groups
C21B	Manufacture of iron and steel	3/00-3/06, 5/00-5/04, 15/00-15/04
C21C	Processing of pig iron	1/02-1/04, 5/06, 5/36, 5/54, 7/04-7/076
C21D	Metallurgy of ferrous metals	1/56-1/613, 1/72-1/76, 3/00-5/00, 5/04-6/04
C22B	Production and refining of ferrous and nonferrous metals	00/00-1/248, 3/00-9/187, 9/20-61/00
C22C	Alloys	all groups
C22F	Metallurgy of nonferrous metals and alloys	all groups
C22K	Indexing scheme associated with subclasses C21D, C22C or C22F	all groups
C23C	Coating and surface treatment of metallic materials	2/00-2/12, 4/04-4/10, 8/00-12/02, 14/00-14/48, 14/54, 14/58-16/48, 16/52-30/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C23D	Enamelling or vitreous layer application to metals	1/00-7/00, 11/00
C23F	Surface treatment or corrosion and incrustation inhibition of metallic materials	00/00-1/06, 1/10-13/16, 14/00-17/00
C23G	Chemical cleaning or degreasing of metallic materials	00/00-1/36, 5/00-5/06
C25B	Electrolytic or electrophoretic processes for production of compounds or nonmetals	1/00-7/00, 11/00-13/08, 15/08
C25C	Electrolytic production, recovery or refining of metals	00/00-3/06, 3/12, 3/18, 3/24-5/04, 7/08
C25D	Electrolytic and electrophoretic processes for production of coatings and electroforming	1/12-1/22, 3/00-5/56, 9/00-13/10, 13/18, 13/20, 13/24, 15/00-15/02, 19/00, 21/11, 21/14-21/22
C25F	Electrolytic removal of materials from objects	00/00-5/00
C30B	Crystal growth	00/00-13/12, 13/34-15/04, 17/00-19/04, 23/00-23/02, 23/08-25/06, 28/00-29/58, 31/00-31/08
<b>D: TEXTILES; PAPER</b>		
D01C	Chemical treatment of natural filamentary or fibrous material to obtain filaments or fibers for spinning	00/00-1/02, 3/00-5/00
D01F	Chemical features in manufacture of artificial fibers and filaments	00/00-9/127, 9/14-13/04

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
D06L	Bleaching, dry cleaning or washing of fibers and fabrics	all groups
D06M	Miscellaneous textile and fiber treatment	00/00, 10/04-11/83, 13/00-13/517, 14/00-15/693, 16/00-19/00, 101/00-101/40
D06N	Covering materials for walls, floors and roofs	00/00, 3/00-3/14, 3/18
D06P	Dyeing or printing of textiles, leathers, furs or macromolecular materials	00/00-5/17, 5/22, 7/00
D21C	Cellulose production and pulping liquor regeneration	00/00-1/08, 3/00-3/20, 9/10-9/16, 11/00-11/14
D21H	Pulp compositions and impregnating or coating of paper	00/00-11/06, 11/20-13/50, 17/03-17/74, 19/10-19/70, 19/80-19/82, 21/14-21/38
<b>F: MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING</b>		
F28D	Heat-exchange apparatus in which the heat-exchange media do not come into direct contact	15/00-15/04
F28F	Details of heat-exchange or heat-transfer apparatus	21/02, 21/06-21/08
<b>G: PHYSICS</b>		
G01N	Analyzing materials by determining their chemical and physical properties	27/48-27/49, 31/00-31/22, 33/15, 33/50-33/553, 33/561-33/567, 33/573, 33/58-33/98
G03C	Photosensitive materials and processes in photography	1/00-1/015, 1/035-1/735, 1/76, 1/77-1/775, 1/79-1/795, 1/815-1/89, 1/93, 5/20-5/26, 5/30-5/58, 7/00-7/02, 7/25-7/44, 8/00-8/28, 8/32, 8/36-8/38, 8/52-8/56

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (1966-June 2000)</b>
G03F	Photomechanical production of textured or patterned surfaces	7/004-7/085
G03G	Electrography and electrophotography	5/06-5/08, 5/09, 7/00-11/00
G21C	Nuclear reactors	3/42-3/64, 19/42-19/50
G21G	Conversion of chemical elements and radioactive sources	00/00-1/12
<b>H: ELECTRICITY</b>		
H01B	Cables, conductors, insulators and dielectrics	1/00-3/56
H01C	Resistors	7/108-7/118
H01F	Magnetic materials and inductors	1/00-1/02, 1/032-1/44, 10/00, 10/08-10/30
H01G	Capacitors	9/022-9/038, 9/042, 9/045
H01J	Electric discharge tubes or discharge lamps	1/142-1/148, 19/062-19/068, 61/14-61/22
H01M	Processes or means (e.g., batteries) for direct conversion of chemical energy into electrical energy	4/24-4/60, 4/86-6/00, 6/04-6/06, 6/14-6/20, 6/24-6/28, 8/06-8/22

**IPC LIST II: Selective Coverage (1966-June 2000)**

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
<b>A: HUMAN NECESSITIES</b>		
A01G	Horticulture	7/06
A01H	New plants; plant reproduction by tissue culture	1/06, 3/04
A01M	Catching or trapping of animals	1/20
A01N	Biocides, pesticides, herbicides, and plant growth regulators	00/00-25/34, 63/00-65/00
A21D	Baking additives and preservatives	00/00-2/00, 2/40
A23B	Food preserving; chemical ripening	00/00-4/00, 4/02-4/027, 4/033, 4/048, 4/08 4/10-4/24, 5/00, 5/025, 5/05, 5/06-5/18, 7/00, 7/022, 7/05, 7/08-7/10, 7/14-7/157, 7/16-9/00, 9/14-9/30
A23C	Dairy products	00/00, 1/16, 3/00, 3/08-9/00, 9/12-9/158, 9/20-13/10, 13/16-15/00, 15/16-19/02, 19/032-19/06, 19/08-19/084, 19/097-19/14, 20/00-23/00
A23D	Edible oils or fats, e.g. margarines, cooking oils and shortenings	00/00-7/00, 7/015-7/04, 7/06-9/00, 9/02-9/04, 9/06
A23F	Coffee, tea and their substitutes	00/00-3/10, 3/14-3/20, 3/34-5/00, 5/14-5/26, 5/40-5/50
A23G	Cocoa, chocolate, confectionery, ice cream	00/00-1/02, 3/00, 3/32
A23J	Protein and phosphatide compositions for food	00/00-1/08, 1/10-1/20, 3/00-3/22, 3/28-7/00
A23K	Fodder	00/00-1/00, 1/165-1/22, 3/00-3/04
A23L	Miscellaneous food preparation and preservation	00/00-1/00, 1/015, 1/03-1/105, 1/186, 1/19-1/212, 1/218-1/222, 1/226-1/237, 1/27-1/31, 1/314, 1/318, 1/325, 1/328, 2/00, 2/38-2/39, 2/40-2/44, 2/52-2/70, 2/74-3/00, 3/3571, 3/375

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
A24B	Manufacture and preparation of tobacco	00/00, 3/00, 3/12, 15/24
A24D	Cigars, cigarettes and filters	00/00, 3/00, 3/06-3/16
A61K	Medical, dental and toilet preparations	00/00, 7/00-7/155, 7/26, 7/40-9/10, 9/12-9/26, 9/48-9/54, 9/68-9/72, 35/00-35/06, 39/00-45/08, 48/00-49/04
A61L	Sterilization, disinfection and deodorization	00/00-2/02, 2/14-2/22, 9/00-9/015, 9/03-9/04, 9/14, 9/22-15/10, 15/14-15/20, 15/42-15/54, 15/58-33/00
A61M	Medical delivery and transduction devices	1/14-1/38
A62B	Life-saving devices and apparatus	17/00-17/04, 18/00-18/06, 19/00-21/00, 29/00
A62C	Fire-fighting	5/00-5/033, 13/02-13/04, 13/22
A62D	Chemical fire extinguishing agents, protectants against harmful chemicals and materials for breathing apparatus	00/00-9/00
<b>B: PERFORMING OPERATIONS; TRANSPORTING</b>		
B01B	Boiling and boiling apparatus	00/00-1/04, 1/08
B01D	Separation	00/00-1/00, 1/14-1/28, 3/00-3/10, 3/14-7/00, 8/00, 17/00-17/025, 17/032-21/02, 21/08, 24/00-24/02, 24/28, 24/36, 25/00-25/12, 25/22-25/28, 27/00-27/04, 29/00, 33/00, 35/00-35/02, 35/04, 35/10, 36/00-45/00, 46/00-46/04, 46/10, 46/18, 46/24, 46/28-46/30, 46/38-46/40, 46/52-47/06, 47/10-47/16, 49/00-51/06, 51/10-53/46, 53/73-53/83, 53/85, 53/92, 53/96-57/02, 61/06-61/12, 61/18-61/34, 61/46-61/54, 63/00-65/04, 65/10-69/14, 101/00-101/02
B01F	Mixing, dissolving, emulsifying or dispersing	00/00-5/12, 5/18, 5/24-7/02, 7/16, 9/00-9/02, 9/10, 11/00, 13/00-13/10

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
B01J	Chemical or physical processes	00/00-8/46, 13/00-13/12, 13/20-13/22, 19/00-19/08, 19/20-19/32, 47/14-49/02
B01L	Chemical or physical laboratory apparatus	00/00, 3/00-7/02, 11/00-11/02
B03C	Magnetic or electrostatic separation	1/015, 3/00-3/01, 3/013-3/019, 3/28-3/30, 3/38, 3/41-3/43, 3/53-3/64, 3/78, 3/84
B03D	Flotation and differential sedimentation	00/00-1/001, 1/02-1/14, 3/00-3/02, 3/06, 101/00-103/10
B04B	Centrifuges	00/00-1/00, 3/00, 5/00, 5/04-5/08
B05D	Processes for applying fluent materials to surfaces	00/00, 3/00-3/10, 5/00-7/26
B08B	Cleaning and prevention of fouling	3/08
B09B	Solid waste disposal	00/00, 3/00-5/00
B09C	Reclamation of contaminated soil	1/10
B21D	Working or processing of metal products	26/08-26/12
B21F	Working or processing of wire	19/00
B22C	Foundry molding	00/00
B22D	Casting of metals	00/00-1/00, 21/00-23/00, 23/04-23/10, 27/00, 27/18-27/20
B22F	Manufacture and working of metallic powder	00/00, 7/00-9/00, 9/12, 9/16-9/30
B23H	Metal working via electric or electrochemical process	00/00, 1/06-1/08, 3/00, 3/04-5/02, 5/06-5/14, 7/34, 11/00
B23K	Soldering, welding, cladding or plating by applying heat locally	00/00-1/00, 1/015, 5/12-5/16, 10/00-10/02, 11/16-11/20, 17/00, 20/14-20/18, 20/22-20/233, 23/00-25/00, 26/18, 35/00, 35/22-35/40

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
B27K	Staining, dyeing, impregnation and bleaching of wood and similar materials	00/00, 3/00-3/02, 3/12, 3/44-3/48, 5/00-9/00
B27L	Debarking	3/00
B27N	Manufacture of articles from wood-based materials	00/00-3/06, 5/00-7/00
B28B	Shaping of clay, ceramic or cementitious material	7/36-7/38
B29B	Processing and recycling of plastics	9/00-9/16, 11/14, 15/08-15/14
B29C	Shaping or joining of plastics	33/38-33/40, 33/52, 33/56, 33/60-33/68, 35/00-35/04, 35/08, 35/18, 70/58-70/66, 71/04
B29D	Production of plastic articles	17/00, 30/04, 30/38-30/40, 30/52
B29K	Molding material indexing scheme associated with processing subclasses B29B, C or D	21/00, 105/00-105/06, 105/24
B32B	Layered products	00/00, 9/00-23/18, 25/00-25/12, 29/00-29/08
B41M	Printing and copying	00/00-1/42, 5/00-5/128, 5/165-5/20, 5/26, 5/34-7/02
B41N	Printing plates or foils; materials for printing machine surfaces	00/00, 3/03, 3/06, 6/00-6/02
B44D	Painting or artistic drawing; preservation of paintings	00/00, 5/00, 7/00
B60C	Vehicle tires	1/00
B65H	Handling of thin or filamentary material	71/00



<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
<b>C: CHEMISTRY; METALLURGY</b>		
C02F	Treatment of water, wastewater, sewage or sludge	00/00-1/26, 1/30-1/40, 1/48, 1/74, 3/00-3/34, 9/00-11/12, 11/16-11/20
C03B	Manufacture, shaping or supplementary processes for glass, mineral or slag wool	5/42-5/43, 18/18-18/20, 19/12-20/00, 27/008-27/012, 27/02-27/04, 37/00-37/012, 37/023, 37/027, 37/075, 40/00-40/02, 40/033-40/04
C03C	Chemical compositions and surface treatment of glass, mineral or slag wool	27/00-29/00
C04B	Lime, magnesia, cements, ceramics, and refractories	7/36-7/52, 18/00-20/12, 111/34-111/94
C06B	Explosives or thermic compositions	00/00
C06C	Detonating or priming devices, fuses, chemical lighters and pyrophoric compositions	00/00-5/04, 7/00-9/00
C06F	Matches and their manufacture	00/00
C09H	Preparation of glue or gelatin	1/00-1/04, 9/00-9/04
C09J	Adhesives	5/00-7/04
C09K	Materials for miscellaneous applications	3/00-3/32, 15/34-17/00, 17/04, 17/10, 17/32-17/34, 101/00-109/00
C10B	Destructive distillation of carbonaceous materials	00/00, 47/00-57/18
C10C	Work-up of tar, pitch, asphalt or bitumen	00/00-1/06, 1/14-1/19, 3/00, 3/06-3/18
C10G	Petrochemistry	7/12, 9/04, 9/08-9/32, 9/40-9/42, 21/30, 71/02

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C10J	Production of fuel gases	00/00, 3/30
C10N	Indexing scheme associated with subclass C10M	20/06, 40/00-40/25, 40/30-50/10
C12C	Brewing of beer	00/00-1/02, 1/047, 1/125, 1/16-3/00, 3/04, 3/08-7/04, 7/14, 11/00-12/04
C12F	Recovery of byproducts of fermented solutions	3/06-3/10
C12G	Wine and other alcoholic beverages	00/00-1/02, 1/024-1/032, 1/06-1/08, 3/00-3/06, 3/08-3/10, 3/14
C12H	Pasteurization, sterilization, preservation, purification, etc., of alcoholic beverages	00/00-1/02, 1/12, 1/22
C12J	Vinegar and its preparation	1/08
C12M	Apparatus for enzymology or microbiology	00/00-1/20, 1/40-1/42
C12N	Microorganisms and enzymes	00/00-1/00, 1/10, 1/12, 1/14, 1/16-1/18, 1/20, 1/34, 5/00-5/08, 7/00, 7/02-7/04, 13/00
C12Q	Enzyme- and microorganism-based measuring or testing methods	00/00-1/20, 1/64, 1/70, 3/00
C12R	Indexing scheme associated with subclasses C12C to C12Q or C12S	1/91-1/92
C12S	Enzyme- and microorganism-based processes for liberation, separation or purification of compounds	00/00, 3/00, 3/06, 3/10-3/12, 3/22-3/24, 7/00-13/00
C13D	Production or purification of sugar juices	00/00-1/04, 1/08-1/10, 1/14

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
C13F	Preparation or processing of raw sugar, sugar or syrup	00/00-3/00
C13G	Evaporation apparatus; boiling pans	00/00-1/00
C21B	Manufacture of iron and steel	00/00, 5/06, 11/00-13/14
C21C	Processing of pig iron	00/00-1/00, 1/08-5/04, 5/28-5/35, 5/38-5/40, 5/44, 5/52, 5/56-7/00, 7/10
C21D	Metallurgy of ferrous metals	00/00, 5/02
C23C	Coating and surface treatment of metallic materials	00/00, 4/00-4/02, 4/12-6/00, 14/56, 16/50,
C23D	Enamelling or vitreous layer application to metals	00/00, 13/00-17/00
C25B	Electrolytic or electrophoretic processes for production of compounds or nonmetals	00/00
C25D	Electrolytic and electrophoretic processes for production of coatings and electroforming	00/00-1/10, 2/00
C25F	Electrolytic removal of materials from objects	7/02
C30B	Crystal growth	15/06-15/36, 19/06-21/06, 23/04-23/06, 25/08-27/02, 29/60-30/08, 31/10-35/00
<b>D: TEXTILES; PAPER</b>		
D01F	Chemical features in manufacture of artificial fibers and filaments	9/133, 9/32

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
D04H	Making of textile fabrics	00/00-1/00, 1/04-1/14, 1/40, 1/58-1/60, 1/64, 1/68, 3/00, 3/08, 3/12, 5/00, 5/04
D06B	Treatment of textiles by liquids, gases or vapors	00/00, 7/00-9/06
D06M	Miscellaneous textile and fiber treatment	10/00-10/02, 11/84, 13/52-13/535, 15/70-15/715, 23/00-23/18
D06N	Covering materials for walls, floors and roofs	1/00, 3/16, 5/00-7/06
D06P	Dyeing or printing of textiles, leathers, furs or macromolecular materials	5/20
D06Q	Decoration of textiles	00/00-1/08, 1/12-1/14
D21C	Cellulose production and pulping liquor regeneration	3/22-7/00, 9/00-9/08, 9/18
D21H	Pulp compositions and impregnating or coating of paper	11/08-11/18, 17/00-17/02, 19/00-19/08, 19/72-19/78, 19/84-21/12, 21/40-21/48, 23/00-23/10, 23/20, 23/76, 25/00-25/02, 27/00-27/02, 27/08-27/12, 27/18, 27/36
<b>E: FIXED CONSTRUCTIONS</b>		
E21B	Earth drilling; recovery of oil, gas, water, soluble materials or mineral slurries from wells	00/00, 41/02, 43/00, 43/16-43/17, 43/22-43/241, 43/25-43/263, 43/27-43/295
E21F	Mine safety devices	00/00, 5/00-5/02, 5/06, 5/16-5/18
<b>F: MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING</b>		
F21K	Light sources	2/00-2/08
F22G	Superheating of steam	1/14
F23G	Waste incineration	5/00-5/027, 7/00, 7/04-7/06, 7/12
F24J	Production or use of heat	00/00-1/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
F25J	Liquefaction, solidification or separation of gases by pressure and cold treatment	00/00-3/08
F28C	Direct-contact heat exchangers	3/00-3/12
F28F	Details of heat-exchange or heat-transfer apparatus	21/00
<b>G: PHYSICS</b>		
G01J	Measurement of properties of IR, visible or UV radiation	00/00-1/00, 1/38, 1/42-1/54, 1/58, 3/00, 3/12, 3/18-3/22, 3/26-3/51
G01K	Measurement of temperature	11/00-11/20, 11/30-11/32, 17/00-17/04, 19/00
G01N	Analyzing materials by determining their chemical and physical properties	00/00-1/02, 1/28, 1/32-1/34, 1/38-1/44, 5/00-7/20, 13/00-15/00, 15/06-15/10, 15/14-17/04, 19/10-21/01, 21/17-21/35, 21/39-21/55, 21/59-21/80, 21/82-21/85, 21/88-22/00, 22/04-23/12, 23/20-25/58, 25/62-25/64, 25/70, 27/00-27/18, 27/22, 27/26-27/453, 27/60, 27/62-27/76, 27/92-29/02, 30/00-30/96, 33/00-33/14, 33/18-33/48, 33/554-33/559, 33/569-33/571, 33/574-33/579, 35/00, 35/08-37/00
G01R	Measurement of electric and magnetic variables	13/00, 13/12-13/14, 33/00, 33/12-33/20, 33/28-33/30, 33/32, 33/44-33/50, 33/60-33/64
G01T	Measurement of nuclear or x-radiation	00/00-1/10, 1/11-1/142, 1/16-1/163, 1/167-1/17, 1/178-1/205, 1/22-7/06
G01V	Geophysics	5/00, 5/04-5/14
G02B	Optical elements, systems or apparatus	1/00-1/12, 5/00, 5/32-6/02, 6/10-6/12, 6/13-6/138, 6/16-6/245
G02F	Optical devices	00/00-1/1337, 1/1343-1/155, 1/167-1/295, 1/35, 1/39, 3/00-3/02

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
G03C	Photosensitive materials and processes in photography	00/00, 1/025, 1/74, 1/785, 1/805-1/81, 1/91, 1/95-3/00, 5/00, 5/04-5/18, 5/28-5/29, 5/60, 7/04-7/24, 7/46, 8/30, 8/34, 8/40-8/50, 9/00-11/00, 11/06-11/24
G03F	Photomechanical production of textured or patterned surfaces	00/00-1/12, 7/00, 7/09-7/18, 7/26-7/42
G03G	Electrography and electrophotography	00/00-5/05, 5/082-5/087, 5/10-5/16, 13/00-13/08, 13/095-13/34, 16/00-17/04, 17/08-17/10
G06G	Analog computers	7/48, 7/54-7/58, 7/75
G08B	Signaling or calling systems	17/00, 17/08-17/103, 17/11, 17/117-17/12
G09B	Educational or demonstration devices	23/00, 23/20, 23/24-23/26
G21B	Fusion reactors	00/00-1/02
G21C	Nuclear reactors	00/00-3/07, 3/16-3/32, 3/324-3/326, 3/36-3/40, 5/00, 5/12, 5/18-7/107, 7/22-7/34, 9/00, 9/02-11/00, 11/06-13/00, 13/08-15/00, 15/24-15/247, 15/253-15/257, 15/28-17/00, 17/02-17/028, 17/06, 19/00, 19/28-19/32, 19/34, 19/38, 21/00-21/02, 21/14-23/00
G21D	Nuclear power plant	00/00, 7/00, 7/04
G21F	Radiation protection; decontamination	00/00-1/12, 5/00-5/008, 5/015, 9/00-9/36
G21G	Conversion of chemical elements and radioactive sources	4/00-5/00
G21H	Energy from radioactive sources	00/00-7/00
G21J	Nuclear explosives	00/00-1/00, 5/00
G21K	Techniques for handling of particles or radiation	1/00-1/06, 1/10-5/00, 7/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
<b>H: ELECTRICITY</b>		
H01B	Cables, conductors, insulators and dielectrics	00/00, 12/00
H01C	Resistors	7/00-7/04, 7/10-7/105, 7/12-7/13, 10/00-10/02, 11/00-13/00, 17/00, 17/06-17/20
H01F	Magnetic materials and inductors	00/00, 1/03, 5/00, 6/00-6/06, 10/06, 27/00, 27/23, 41/00, 41/14-41/28
H01G	Capacitors	00/00, 4/00-4/008, 4/018-4/224, 5/00-5/014, 7/00-9/02, 9/04, 9/048-9/055, 9/07-9/08, 9/145-9/155, 9/22-9/28, 15/00-17/00
H01J	Electric discharge tubes or discharge lamps	00/00, 1/05, 1/12, 1/14, 1/30-1/38, 1/46-1/48, 1/53-1/54, 1/58-1/64, 1/68-1/74, 1/78, 1/90, 7/00-7/12, 9/00-9/04, 9/12-9/14, 9/20-9/233, 13/00-13/08, 13/16, 13/28, 15/00-15/02, 17/00-17/10, 17/38, 17/50, 19/00-19/06, 19/24-19/32, 21/00-21/02, 21/20, 27/00-27/04, 27/20-29/04, 29/08-29/10, 29/16-29/20, 29/26, 29/36, 29/48, 29/84-29/86, 29/88, 29/94, 31/00, 31/08, 33/00, 35/00-35/08, 35/20, 37/00-37/06, 37/073-37/09, 37/244, 37/252, 37/26-37/295, 37/317-40/06, 40/10, 40/16-40/18, 43/00-43/04, 45/00-47/12, 49/00-49/18, 49/26-49/30, 49/34-49/36, 49/40-61/073, 61/12, 61/38, 61/42-61/48, 61/54, 61/58-61/64, 61/70-61/76, 61/80, 61/98-65/08
H01K	Electric incandescent lamps	00/00-1/10, 1/28, 1/32, 1/40, 1/50-1/56
H01L	Semiconductor devices	00/00-21/302, 21/306-21/445, 21/46-21/461, 21/465-21/479, 21/62-21/64, 21/70-21/763, 21/765-21/86, 27/00-29/04, 29/12-29/28, 29/36-29/40, 29/43-29/812, 29/86-31/0232, 31/0248-31/0336, 31/036-31/042, 31/052-31/055, 31/06-35/00, 35/12-35/28, 35/32-39/02, 39/12-41/047, 41/06-41/087, 41/12-51/40
H01M	Processes or means (e.g., batteries) for direct conversion of chemical energy into electrical energy	00/00-2/00, 2/14-2/16, 2/20, 2/32, 4/00-4/20, 4/22, 4/62-4/68, 4/72-4/76, 4/80-4/84, 6/02, 6/08-6/12, 6/22, 6/30-6/48, 8/00-8/04, 8/24-10/00, 10/04-10/12, 10/18-10/40, 10/52, 12/00-16/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (1966-June 2000)</b>
H01P	Waveguides	00/00-1/00, 1/10-1/11, 1/15, 1/20, 1/215-1/218, 1/22
H01S	Devices using stimulated emission	00/00-3/03, 3/038, 3/09-3/10, 3/102-3/104, 3/11-3/113, 3/13-3/134, 3/14-4/00
H05B	Electric heating; electric lighting	00/00, 31/00-31/02, 31/06-31/14, 33/00, 33/12-35/00
H05G	X-ray technique	00/00-1/00, 2/00
H05H	Plasma technique; production of charged particles, neutrons or atomic or molecular beams	00/00-1/00, 1/24-1/26, 1/54-6/00, 9/00-15/00
H05K	Printed circuits; manufacture of electric component assemblies	00/00-1/09, 1/16, 3/00-3/02, 3/06-3/07, 3/10-3/18, 3/22, 3/28, 3/40-3/46



## Appendix VI

### IPC SELECTION TABLES (JULY 2000- )

These lists use the 7th edition of the International Patent Classification manual published in 1999.

#### IPC List I: Guaranteed Coverage (July 2000- )

Class/ Subclass	Subject Matter	Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )
<b>A: HUMAN NECESSITIES</b>		
A01N	Biocides, pesticides, herbicides, and plant growth regulators	27/00-61/02, 65/02
A21D	Baking additives and preservatives	2/02-2/32
A23D	Edible oils or fats, e.g. margarines, cooking oils and shortenings	7/005-7/01, 9/007, 9/013
A23L	Miscellaneous food preparation and preservation	3/34-3/3409, 3/3427-3/3436, 3/3454-3/3463, 3/3481-3/3562, 3/358, 3/37, 3/42
A24B	Manufacture and preparation of tobacco	15/00-15/20, 15/26-15/42
A61K	Medical, dental and toilet preparations	6/00-6/10, 7/16-7/24, 7/28-7/38, 9/107-9/113, 9/28-9/46, 9/56-9/66, 31/00-33/44, 37/00-38/58, 47/00-47/44, 47/48, 51/00-123/00
A61L	Sterilization, disinfection and deodorization	9/02, 15/12, 15/22-15/34, 15/38
<b>B: PERFORMING OPERATIONS; TRANSPORTING</b>		
B01D	Separation	3/12, 7/02, 9/00-15/08, 53/48-53/72, 53/86, 53/90, 53/94, 59/00-61/04, 61/14-61/16, 61/36-61/44, 61/56-61/58, 65/06-65/08, 71/00-71/82, 111/00-157/10, 161/00-187/00
B01F	Mixing, dissolving, emulsifying or dispersing	17/00-17/56

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
B01J	Chemical or physical processes	10/00-10/02, 12/00-12/02, 13/14-13/18, 14/00-16/00, 19/14-19/16, 20/00-47/12, 101/00-105/98
B03D	Flotation and differential sedimentation	1/002-1/018
B09C	Reclamation of contaminated soil	1/08
B22C	Foundry molding	1/00-3/02
B22F	Manufacture and working of metallic powder	1/00-1/02
B23K	Soldering, welding, cladding or plating by applying heat locally	103/00-103/24
B27K	Staining, dyeing, impregnation and bleaching of wood and similar materials	3/15-3/42, 3/50-3/52
B29K	Molding material indexing scheme associated with processing subclasses B29B, C or D	1/00-19/00, 23/00-103/08, 105/16-105/18, 105/22, 201/00-711/14
B32B	Layered products	23/20-23/22, 25/14-27/42
B41M	Printing and copying	5/132-5/155, 5/28-5/32
B82B	Nanostructures: manufacture and treatment	all groups
<b>C: CHEMISTRY; METALLURGY</b>		
C01B	Nonmetallic elements and their compounds	all groups
C01C	Ammonia, cyanogen and their compounds	all groups
C01D	Alkali metal compounds	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
C01F	Compounds of Be, Mg, Al, Ca, Sr, Ba, Ra, Th or the rare earth metals	all groups
C01G	Compounds containing metals covered by C01D or C01F	all groups
C02F	Treatment of water, wastewater, sewage or sludge	1/28, 1/42-1/469, 1/50-1/72, 1/76-1/78, 5/00-5/14, 9/08, 11/14
C03B	Manufacture, shaping or supplementary processes for glass, mineral or slag wool	8/00-8/04, 37/014-37/018
C03C	Chemical compositions and surface treatment of glass, mineral or slag wool	00/00-25/06, 25/24-25/48, 25/66
C04B	Lime, magnesia, cements, ceramics, and refractories	00/00-7/345, 7/60-16/12, 22/00-103/50, 103/54-103/69, 111/10-111/28
C05B	Phosphate fertilizers	all groups
C05C	Nitrogen fertilizers	all groups
C05D	Inorganic fertilizers	all groups
C05G	Fertilizer mixtures	all groups
C06B	Explosives or thermic compositions	23/00-49/00
C06C	Detonating or priming devices, fuses, chemical lighters and pyrophoric compositions	15/00
C06D	Smoke or mist generation, gas-attack compositions and gas generation for blasting or propulsion	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
C06F	Matches and their manufacture	3/00-3/08
C07B	General methods and apparatus for organic chemistry	all groups
C07C	Acyclic or carbocyclic compounds	all groups
C07D	Heterocyclic compounds	all groups
C07F	Acyclic, carbocyclic or heterocyclic compounds containing elements other than C, H, halogen, O, N, Se or Te	all groups
C07G	Compounds of unknown constitution	all groups
C07H	Sugars and their derivatives, nucleosides, nucleotides and nucleic acids	all groups
C07J	Steroids	all groups
C07K	Peptides	all groups
C07M	Indexing scheme associated with subclasses C07B to K	all groups
C08B	Polysaccharides and derivatives	all groups
C08C	Treatment or chemical modification of rubbers	all groups
C08F	Macromolecular compounds obtained by reactions only involving C-to-C unsaturated bonds	all groups

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
C08G	Macromolecular compounds obtained otherwise than by reactions only involving C-to-C unsaturated bonds	all groups
C08H	Derivatives of natural macromolecular compounds	all groups
C08J	Work-up, compounding and after-treatment	all groups
C08K	Inorganic or non-macromolecular compounding ingredients	all groups
C08L	Compositions of macromolecular compounds	all groups
C09B	Organic dyes and mordants	all groups
C09C	Treatment of inorganic materials to enhance their pigmenting or filling properties	all groups
C09D	Coating compositions, inks, lacquers, etc.	all groups
C09F	Natural resins	all groups
C09G	Polishing compositions	all groups
C09H	Preparation of glue or gelatin	00/00, 3/00-7/00
C09J	Adhesives	00/00, 1/00-4/06, 9/00-201/10
C09K	Materials for miscellaneous applications	00/00, 5/00-15/32, 17/02, 17/06-17/08, 17/12-17/30, 17/36-21/14
C10C	Work-up of tar, pitch, asphalt or bitumen	1/08-1/12, 1/20, 3/02-3/04, 5/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
C10G	Petrochemistry	00/00-7/10, 9/00-9/02, 9/06, 9/34-9/38, 11/00-21/28, 25/00-71/00, 73/00-75/04
C10H	Production of acetylene by wet methods	all groups
C10J	Production of fuel gases	1/00-3/70
C10K	Purifying or modifying CO-containing combustible gas	all groups
C10L	Fuels	00/00-5/40, 7/00-11/04
C10M	Lubricating compositions	all groups
C10N	Indexing scheme associated with subclass C10M	00/00-20/04, 30/00-30/20, 40/26-40/28, 60/00-80/00
C11B	Animal and vegetable oils, fats and waxes and essential oils for perfumes	all groups
C11C	Fatty acids and chemical modification of fats, oils or fatty acids	00/00-3/14
C11D	Detergent compositions and soaps	00/00-15/04, 19/00
C12F	Recovery of byproducts of fermented solutions	00/00, 3/00-3/04, 5/00
C12G	Wine and other alcoholic beverages	1/022, 1/04, 1/10-1/12, 3/12
C12H	Pasteurization, sterilization, preservation, purification, etc., of alcoholic beverages	1/04-1/056, 1/10, 1/14-1/15, 3/00-3/04
C12J	Vinegar and its preparation	00/00-1/06, 1/10

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
C12N	Microorganisms and enzymes	1/08, 1/11, 1/13, 1/15, 1/19, 1/21-1/32, 1/38, 5/10-5/28, 7/01, 7/06, 9/00-11/18, 15/00-15/90
C12P	Fermentation for synthesis or separation of isomers	all groups
C12Q	Enzyme- and microorganism-based measuring or testing methods	1/25-1/62, 1/66-1/68
C12S	Enzyme- and microorganism-based processes for liberation, separation or purification of compounds	1/00-1/02, 3/02-3/04, 3/08, 3/14-3/20, 5/00
C13D	Production or purification of sugar juices	3/00-3/18
C13J	Extraction of sugar from molasses	all groups
C13K	Glucose, invert sugar, lactose, maltose and sugar synthesis by hydrolysis of di- or polysaccharides	all groups
C14C	Chemical treatment of skins, hides and leather and tanning compositions	all groups
C21B	Manufacture or iron and steel	3/00-3/06, 5/00-5/04, 15/00-15/04
C21C	Processing or pig iron	1/02-1/04, 5/06, 5/36, 5/54, 7/04-7/076
C21D	Metallurgy of ferrous metals	1/56-1/613, 1/72-1/76, 3/00-5/00, 5/04-6/04
C22B	Production and refining of ferrous and nonferrous metals	00/00-1/248, 3/00-9/187, 9/20-61/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
C22C	Alloys	00/00-47/10, 47/14-47/18, 49/00-121/02
C22F	Metallurgy of nonferrous metals and alloys	all groups
C22K	Indexing scheme associated with subclasses C21D, C22C or C22F	all groups
C23C	Coating and surface treatment of metallic materials	2/00-2/12, 4/04-4/10, 8/00-14/48, 14/54, 14/58-16/455, 16/46-16/48, 16/458, 16/52-30/00
C23D	Enamelling or vitreous layer application to metals	1/00-7/00, 11/00
C23F	Surface treatment or corrosion and incrustation inhibition of metallic materials	00/00-1/06, 1/10-13/16, 14/00-17/00
C23G	Chemical cleaning or degreasing of metallic materials	00/00-1/36, 5/00-5/06
C25B	Electrolytic or electrophoretic processes for production of compounds or nonmetals	1/00-7/00, 9/06-9/16, 11/00-13/08, 15/08
C25C	Electrolytic production, recovery or refining of metals	00/00-3/06, 3/12, 3/18, 3/24-5/04, 7/08
C25D	Electrolytic and electrophoretic processes for production of coatings and electroforming	1/12-1/22, 3/00-5/56, 9/00-13/10, 13/18, 13/20, 13/24, 15/00-15/02, 19/00, 21/11, 21/14-21/22
C25F	Electrolytic removal of materials from objects	00/00-5/00
C30B	Crystal growth	00/00-13/12, 13/34-15/04, 17/00-19/04, 23/00-23/02, 23/08-25/06, 28/00-29/58, 31/00-31/08



<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
<b>D: TEXTILES; PAPER</b>		
D01C	Chemical treatment of natural filamentary or fibrous material to obtain filaments or fibers for spinning	00/00-1/02, 3/00-5/00
D01F	Chemical features in manufacture of artificial fibers and filaments	00/00-9/127, 9/14-13/04
D06L	Bleaching, dry cleaning or washing of fibers and fabrics	all groups
D06M	Miscellaneous textile and fiber treatment	00/00, 10/04-11/83, 13/00-13/517, 14/00-15/693, 16/00-19/00, 101/00-101/40
D06N	Covering materials for walls, floors and roofs	00/00, 3/00-3/14, 3/18
D06P	Dyeing or printing of textiles, leathers, furs or macromolecular materials	00/00-5/17, 5/22-7/00
D21C	Cellulose production and pulping liquor regeneration	00/00-1/08, 3/00-3/20, 9/10-9/16, 11/00-11/14
D21H	Pulp compositions and impregnating or coating of paper	00/00-11/06, 11/20-13/50, 17/03-17/74, 19/10-19/70, 19/80-19/82, 21/14-21/38
<b>F: MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING</b>		
F28D	Heat-exchange apparatus in which the heat-exchange media do not come into direct contact	15/00-15/04
F28F	Details of heat-exchange or heat-transfer apparatus	21/02, 21/06-21/08

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Guaranteed Coverage in <i>Chemical Abstracts</i> (July 2000- )</b>
<b>G: PHYSICS</b>		
G01N	Analyzing materials by determining their chemical and physical properties	27/48-27/49, 31/00-31/22, 33/15, 33/50-33/553, 33/561-33/567, 33/573, 33/58-33/98
G03C	Photosensitive materials and processes in photography	1/00-1/015, 1/035-1/735, 1/76, 1/77-1/775, 1/79-1/795, 1/815-1/89, 1/93, 5/20-5/26, 5/30-5/58, 7/00-7/02, 7/25-7/44, 8/00-8/28, 8/32, 8/36-8/38, 8/52-8/56
G03F	Photomechanical production of textured or patterned surfaces	7/004-7/085
G03G	Electrography and electrophotography	5/06-5/08, 5/09, 7/00-11/00
G21C	Nuclear reactors	3/42-3/64, 19/42-19/50
G21G	Conversion of chemical elements and radioactive sources	00/00-1/12
<b>H: ELECTRICITY</b>		
H01B	Cables, conductors, insulators and dielectrics	1/00-3/56
H01C	Resistors	7/108-7/118
H01F	Magnetic materials and inductors	1/00-1/02, 1/032-1/44, 10/00, 10/08-10/30
H01G	Capacitors	9/022-9/038, 9/042, 9/045
H01J	Electric discharge tubes or discharge lamps	1/142-1/148, 19/062-19/068, 61/14-61/22
H01M	Processes or means (e.g., batteries) for direct conversion of chemical energy into electrical energy	4/24-4/60, 4/86-6/00, 6/04-6/06, 6/14-6/20, 6/24-6/28, 8/06-8/22

**IPC List II: Selective Coverage (July 2000- )**

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
<b>A: HUMAN NECESSITIES</b>		
A01C	Planting, sowing and fertilizing	1/00, 1/06, 1/08, 3/00
A01G	Horticulture	7/02, 7/06
A01H	New plants; plant reproduction by tissue culture	1/00, 1/06, 1/08, 3/00, 3/04
A01J	Manufacture of dairy products	27/00, 27/02
A01M	Catching or trapping of animals	1/20
A01N	Biocides, pesticides, herbicides, and plant growth regulators	00/00-25/34, 63/00-65/00
A21D	Baking additives and preservatives	00/00-2/00, 2/40
A23B	Food preserving; chemical ripening	00/00-4/00, 4/02-4/027, 4/033, 4/048, 4/08 4/10-4/24, 5/00, 5/025, 5/05, 5/06-5/18, 7/00, 7/022, 7/05, 7/08-7/10, 7/14-7/157, 7/16-9/00, 9/14-9/30
A23C	Dairy products	00/00, 1/16, 3/00, 3/08-9/00, 9/12-9/158, 9/20-13/10, 13/16-15/00, 15/16-19/02, 19/032-19/06, 19/08-19/084, 19/097-19/14, 20/00-23/00
A23D	Edible oils or fats, e.g. margarines, cooking oils and shortenings	00/00-7/00, 7/015-7/04, 7/06-9/00, 9/02-9/04, 9/06
A23F	Coffee, tea and their substitutes	00/00-3/10, 3/14-3/20, 3/34-5/00, 5/14-5/26, 5/40-5/50
A23G	Cocoa, chocolate, confectionery, ice cream	00/00-1/02, 3/00, 3/32
A23J	Protein and phosphatide compositions for food	00/00-1/08, 1/10-1/20, 3/00-3/22, 3/28-7/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
A23K	Fodder	00/00-1/00, 1/165-1/22, 3/00-3/04
A23L	Miscellaneous food preparation and preservation	00/00-1/00, 1/015, 1/03-1/105, 1/186, 1/19-1/212, 1/218-1/222, 1/226-1/237, 1/27-1/31, 1/314, 1/318, 1/325, 1/328, 2/00, 2/38-2/39, 2/40-2/44, 2/52-2/70, 2/74-3/00, 3/3571, 3/375
A23P	Shaping or working of foodstuffs	1/02, 1/04, 1/08, 1/16
A24B	Manufacture and preparation of tobacco	00/00, 3/00, 3/12, 15/24
A24D	Cigars, cigarettes and filters	00/00, 3/00, 3/06-3/16
A41B	Shirts, underwear, baby linen and handkerchiefs	3/10, 17/00
A41D	Outerwear and protective garments	19/015, 31/00, 31/02
A42C	Manufacturing of hats	1/08
A43B	Footwear features and parts	1/00, 1/10-1/14, 13/00-13/04, 13/12, 13/22, 13/42, 21/00-21/02, 21/04-21/08, 21/14, 21/18-21/20, 23/16-23/17
A44B	Buttons, pins, and other fasteners	1/02
A45D	Hairdressing and shaving equipment; manicuring and other cosmetic treatment	4/14, 7/04, 7/06, 31/00, 33/38, 37/00
A46B	Brushes	3/02, 3/04
A46D	Brush manufacture	1/00
A47C	Chairs, sofas and beds	5/12
A47G	Household or table equipment	25/36
A47H	Furnishings for windows or doors	23/02, 23/08-23/10, 23/14

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
A47J	Kitchen equipment	36/02, 36/04
A47K	Sanitary equipment; toilet accessories	13/02
A61B	Diagnosis, surgery and identification	5/145, 18/06
A61C	Dentistry; oral or dental hygiene	5/08-5/11, 13/00-13/03, 13/08-13/09, 13/20-13/23, 13/263, 13/34
A61D	Veterinary tools or methods	9/00
A61F	Prostheses, bandages, dressings, absorbent pads, etc.	2/00, 2/02, 2/10-2/14, 2/30, 13/00-13/04, 13/15-13/20, 13/36, 13/47-13/475, 13/51-13/511, 13/513-13/514, 13/53-13/535, 13/537, 13/84, 101/00-105/00
A61G	Medical furnishings; funereal devices	17/007
A61J	Medical or drug containers; devices for administration of drugs	1/00-1/10, 1/14, 1/18, 3/00-3/10
A61K	Medical, dental and toilet preparations	00/00, 7/00-7/155, 7/26, 7/40-9/10, 9/12-9/26, 9/48-9/54, 9/68-9/72, 35/00-35/06, 39/00-45/08, 48/00-49/22
A61L	Sterilization, disinfection and deodorization	00/00-2/02, 2/03, 2/14-2/238, 9/00-9/012, 9/014-9/05, 9/14, 9/22-12/00, 12/08-15/10, 15/14-15/20, 15/40-15/54, 15/58-27/36, 27/40-33/18, 101/00-101/54
A61M	Medical delivery and transduction devices	1/14-1/38, 16/10-16/14, 16/22, 29/04-36/00, 36/14-37/00
A61N	Electrotherapy, magnetotherapy, radiation therapy or ultrasonic therapy	1/04-1/05, 2/10
A61P	Therapeutic activity of chemical compounds	all groups
A62B	Life-saving devices and apparatus	17/00-17/04, 18/00-18/06, 19/00-21/00, 29/00
A62C	Fire-fighting	3/00, 3/06, 5/00-5/033, 13/02-13/22, 13/66-13/70

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
A62D	Chemical fire extinguishing agents, protectants against harmful chemicals and materials for breathing apparatus	all groups
A63B	Sports equipment	37/02-37/08, 37/12-37/14, 39/06-39/08, 49/10, 51/02, 53/10
A63C	Skis and skates	5/056, 5/14
A63D	Bowling games and billiards	1/04
<b>B: PERFORMING OPERATIONS; TRANSPORTING</b>		
B01B	Boiling and boiling apparatus	00/00-1/04, 1/08
B01D	Separation	00/00-1/00, 1/14-1/28, 3/00-3/10, 3/14-7/00, 8/00, 17/00-17/025, 17/032-21/02, 21/08, 24/00-24/02, 24/28, 24/36, 25/00-25/12, 25/22-25/28, 27/00-27/04, 29/00, 33/00, 35/00-35/02, 35/04, 35/10, 36/00-45/00, 46/00-46/04, 46/10, 46/18, 46/24, 46/28-46/30, 46/38-46/40, 46/52-47/06, 47/10-47/16, 49/00-51/06, 51/10-53/46, 53/73-53/83, 53/85, 53/92, 53/96-57/02, 61/06-61/12, 61/18-61/34, 61/46-61/54, 63/00-65/04, 65/10-69/14, 101/00-101/02
B01F	Mixing, dissolving, emulsifying or dispersing	00/00-5/12, 5/18, 5/24-7/02, 7/16, 9/00-9/02, 9/10, 11/00, 13/00-13/10
B01J	Chemical or physical processes	00/00-8/46, 13/00-13/12, 13/20-13/22, 19/00-19/08, 19/20-19/32, 47/14-49/02
B01L	Chemical or physical laboratory apparatus	00/00, 3/00-7/02, 11/00-11/02
B03C	Magnetic or electrostatic separation	1/015, 3/00-3/01, 3/013-3/019, 3/28-3/30, 3/38, 3/41-3/43, 3/53-3/64, 3/78, 3/84 5/00-9/00
B03D	Flotation and differential sedimentation	00/00-1/001, 1/02-1/14, 3/00-3/02, 3/06, 101/00-103/10
B04B	Centrifuges	00/00-1/00, 3/00, 5/00, 5/04-5/08

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
B05D	Processes for applying fluent materials to surfaces	00/00, 3/00-3/10, 5/00-7/26
B07B	Separating solids from solids	4/00, 7/00, 9/00
B08B	Cleaning and prevention of fouling	3/08
B09B	Solid waste disposal	00/00, 3/00-5/00
B09C	Reclamation of contaminated soil	1/00-1/06, 1/10, 101/00
B21B	Rolling of metal	3/00-3/02, 27/06
B21C	Manufacture of metal sheet, wire, rods, tubes or profiles	23/32
B21D	Working or processing of metal products	26/08-26/12
B21F	Working or processing of wire	19/00
B21J	Forging, hammering, pressing or riveting	3/00
B22C	Foundry molding	00/00, 9/10-9/12, 15/268
B22D	Casting of metals	00/00-1/00, 21/00-23/00, 23/04-23/10, 27/00, 27/18-27/20
B22F	Manufacture and working of metallic powder	00/00, 7/00-9/00, 9/12, 9/16-9/30
B23H	Metal working via electric or electrochemical process	00/00, 1/06-1/08, 3/00, 3/04-5/02, 5/06-5/14, 7/22-7/24, 7/34, 7/38, 11/00
B23K	Soldering, welding, cladding or plating by applying heat locally	00/00-1/00, 1/012-1/018, 1/08, 1/19-1/20, 5/12-5/16, 7/00, 7/08, 9/00, 9/14-9/173, 9/23-9/26, 10/00-10/02, 11/16-11/20, 11/30, 11/34, 17/00, 20/14-20/18, 20/20-20/24, 23/00-25/00, 26/12, 26/18-26/20, 26/42, 28/00, 31/00, 31/12, 35/00, 35/10, 35/20-35/40

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
B23P	Metal working	17/00, 127/04, 25/00
B24B	Grinding or polishing	1/00
B24C	Abrasive blasting	1/00, 1/04-1/06
B24D	Grinding tools	3/00-3/34
B25G	Handles	1/10, 1/12
B26B	Cutting tools	21/58, 21/60
B27K	Staining, dyeing, impregnation and bleaching of wood and similar materials	00/00, 3/00-3/04, 3/08, 3/12, 3/44-3/48, 5/00-9/00
B27L	Debarking	3/00
B27N	Manufacture of articles from wood-based materials	00/00-3/06, 5/00-9/00
B28B	Shaping of clay, ceramic or cementitious material	1/00, 1/16, 1/24-1/26, 1/30-1/32, 1/54, 7/34-7/40, 7/44, 11/04-11/06, 11/24, 17/02, 19/00, 21/92-21/94
B28C	Preparing clay	1/00-1/06, 3/00-5/00, 5/40
B29B	Processing and recycling of plastics	7/00, 7/84, 7/88-9/16, 11/14, 11/16, 13/00, 13/08, 15/00-15/02, 15/08-17/02
B29C	Shaping or joining of plastics	33/38-33/40, 33/52-33/68, 35/00-35/10, 35/18, 45/46, 45/70, 45/83, 47/36, 47/94, 49/46, 49/66, 59/08-59/16, 65/40, 65/48, 65/52, 67/02-67/06, 67/24, 70/02-70/16, 70/26, 70/58-70/66, 70/88-73/02, 73/10, 73/16-73/18, 73/22
B29D	Production of plastic articles	7/00-9/00, 17/00, 30/04, 30/38-30/40, 30/52
B29K	Molding material indexing scheme associated with processing subclasses B29B, C orD	21/00, 105/00-105/06, 105/24
B29L	Indexing scheme associated with subclass B29C	7/00, 9/00, 17/00, 30/00



<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
B32B	Layered products	00/00, 9/00-23/18, 25/00-25/12, 29/00-29/08
B41J	Selective printing mechanisms	2/005-2/015, 2/195-2/20, 2/315, 2/385, 2/435, 2/445, 2/48, 31/00-31/08
B41M	Printing and copying	00/00-1/42, 5/00-5/128, 5/165-5/26, 5/34-7/02
B41N	Printing plates or foils; materials for printing machine surfaces	00/00, 1/00, 1/04-1/08, 1/12, 3/03, 3/06, 6/00-6/02
B42D	Books	3/02, 101/00-107/00, 113/00, 119/00
B44C	Producing decorative effects	1/00, 1/04, 1/16-1/20
B44D	Painting or artistic drawing; preservation of paintings	00/00, 5/00, 7/00
B60B	Vehicle wheels, castors and axles	5/00, 5/02, 9/10,
B60C	Vehicle tires	1/00, 17/10
B62K	Cycles	19/02-19/06, 19/16
B63B	Ships	5/24
B65H	Handling of thin or filamentary material	71/00
B81B	Microstructural devices or systems	all groups
B81C	Manufacture or treatment of microstructural devices or systems	all groups
<b>C: CHEMISTRY; METALLURGY</b>		
C02F	Treatment of water, wastewater, sewage or sludge	00/00-1/26, 1/30-1/40, 1/48, 1/74, 3/00-3/34, 9/00-9/06, 9/10-11/12, 11/16-11/20, 101/00-103/44
C03B	Manufacture, shaping or supplementary processes for glass, mineral or slag wool	5/42-5/43, 18/18-18/20, 19/12-20/00, 27/008-27/012, 27/02-27/04, 37/00-37/012, 37/023, 37/027, 37/075, 40/00-40/02, 40/033-40/04

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
C03C	Chemical compositions and surface treatment of glass, mineral or slag wool	25/12-25/22, 25/50-25/64, 25/68-25/70, 27/00-29/00
C04B	Lime, magnesia, cements, ceramics, and refractories	7/36-7/52, 18/00-20/12, 111/34-111/94
C06B	Explosives or thermic compositions	00/00
C06C	Detonating or priming devices, fuses, chemical lighters and pyrophoric compositions	00/00-5/04, 7/00-9/00
C06F	Matches and their manufacture	00/00
C09H	Preparation of glue or gelatin	1/00-1/04, 9/00-9/04
C09J	Adhesives	5/00-7/04
C09K	Materials for miscellaneous applications	3/00-3/32, 15/34-17/00, 17/04, 17/10, 17/32-17/34, 101/00-109/00
C10B	Destructive distillation of carbonaceous materials	00/00, 47/00-57/18
C10C	Work-up of tar, pitch, asphalt or bitumen	00/00-1/06, 1/14-1/19, 3/00, 3/06-3/18
C10G	Petrochemistry	7/12, 9/04, 9/08-9/32, 9/40-9/42, 21/30, 71/02
C10J	Production of fuel gases	00/00, 3/30
C10N	Indexing scheme associated with subclass C10M	20/06, 40/00-40/25, 40/30-50/10
C12C	Brewing of beer	00/00-1/02, 1/047, 1/125, 1/16-3/00, 3/04, 3/08-7/04, 7/14, 11/00-12/04
C12F	Recovery of byproducts of fermented solutions	3/06-3/10

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
C12G	Wine and other alcoholic beverages	00/00-1/02, 1/024-1/032, 1/06-1/08, 3/00-3/06, 3/08-3/10, 3/14
C12H	Pasteurization, sterilization, preservation, purification, etc., of alcoholic beverages	00/00-1/02, 1/12, 1/22
C12J	Vinegar and its preparation	1/08
C12M	Apparatus for enzymology or microbiology	00/00-1/20, 1/40-1/42
C12N	Microorganisms and enzymes	00/00-1/00, 1/10, 1/12, 1/14, 1/16-1/18, 1/20, 1/34, 5/00-5/08, 7/00, 7/02-7/04, 13/00
C12Q	Enzyme- and microorganism-based measuring or testing methods	00/00-1/20, 1/64, 1/70, 3/00
C12R	Indexing scheme associated with subclasses C12C to C12Q or C12S	1/91-1/92
C12S	Enzyme- and microorganism-based processes for liberation, separation or purification of compounds	00/00, 3/00, 3/06, 3/10-3/12, 3/22-3/24, 7/00-13/00
C13D	Production or purification of sugar juices	00/00-1/04, 1/08-1/10, 1/14
C13F	Preparation or or processing of raw sugar, sugar or syrup	00/00-3/00
C13G	Evaporation apparatus; boiling pans	00/00-1/00
C21B	Manufacture or iron and steel	00/00, 5/06, 11/00-13/14
C21C	Processing or pig iron	00/00-1/00, 1/08-5/04, 5/28-5/35, 5/38-5/40, 5/44, 5/52, 5/56-7/00, 7/10

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
C21D	Metallurgy of ferrous metals	00/00, 5/02
C22C	Alloys	47/12, 47/20
C23C	Coating and surface treatment of metallic materials	00/00, 4/00-4/02, 4/12-6/00, 14/56, 16/50-16/517
C23D	Enamelling or vitreous layer application to metals	00/00, 13/00-17/00
C25B	Electrolytic or electrophoretic processes for production of compounds or nonmetals	00/00, 9/18, 9/20
C25D	Electrolytic and electrophoretic processes for production of coatings and electroforming	00/00-1/10, 2/00
C25F	Electrolytic removal of materials from objects	7/02
C30B	Crystal growth	15/06-15/36, 19/06-21/06, 23/04-23/06, 25/08-27/02, 29/60-30/08, 31/10-35/00
<b>D: TEXTILES; PAPER</b>		
D01D	Manufacture of artificial filaments	1/00-1/02, 1/10, 5/00-5/08, 5/096-5/14, 5/38-5/40, 10/00-10/02, 10/06, 11/06
D01F	Chemical features in manufacture of artificial fibers and filaments	9/133, 9/32
D01H	Spinning or twisting	13/30
D02J	Finishing of filaments	3/18
D04H	Making of textile fabrics	00/00-1/00, 1/04-1/14, 1/40, 1/50, 1/54-1/60, 1/64, 1/68, 3/00, 3/08, 3/12-3/16, 5/00, 5/04-5/06

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
D06B	Treatment of textiles by liquids, gases or vapors	00/00, 7/00-9/06, 11/00-15/00, 19/00
D06C	Finishing of textiles	7/00-7/04, 27/00, 29/00
D06H	Marking or severing of textiles	7/22
D06M	Miscellaneous textile and fiber treatment	10/00-10/02, 11/84, 13/52-13/535, 15/70-15/715, 23/00-23/18
D06N	Covering materials for walls, floors and roofs	1/00, 3/16, 5/00-7/06
D06P	Dyeing or printing of textiles, leathers, furs or macromolecular materials	5/20
D06Q	Decoration of textiles	00/00-1/08, 1/12-1/14
D07B	Ropes or cables	5/08
D21B	Fibrous raw materials	1/00-1/02, 1/14-1/16, 1/30-1/32, 1/38
D21C	Cellulose production and pulping liquor regeneration	1/10, 3/22-7/00, 9/00-9/08, 9/18
D21F	Papermaking machines	1/66, 1/70, 1/82
D21H	Pulp compositions and impregnating or coating of paper	11/08-11/18, 17/00-17/02, 19/00-19/08, 19/72-19/78, 19/84-21/12, 21/40-23/32, 23/76, 25/00-25/06, 27/00-27/04, 27/08-27/18, 27/28, 27/32-27/38
D21J	Fiberboard	1/00, 1/08-1/20
<b>E: FIXED CONSTRUCTIONS</b>		
E01C	Road construction or surfaces	7/00, 7/06-7/12, 7/18-7/30, 7/35, 13/00, 13/06-13/10
E01D	Bridges	101/20, 101/24-101/26, 101/30-101/40
E01H	Street cleaning	3/00, 5/00, 8/00, 8/10, 10/00-13/00
E02D	Foundations	3/00, 3/11, 3/12, 5/46, 19/16, 27/26

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
E03B	Water distribution methods and networks	3/18, 3/22
E04B	General building construction	1/62-1/682, 1/74-1/76, 1/82, 1/88, 1/92-1/98, 103/00-103/06
E04C	Structural elements and building materials	2/00-2/10, 2/20-2/296, 5/00-5/01, 5/04, 5/07
E04D	Roof coverings	1/00, 1/04-1/10, 1/14-1/22, 3/00-3/06, 3/16-3/18, 3/35, 5/00-5/10
E04F	Finishing work on buildings	13/00-13/02, 13/12-13/14, 13/18, 15/00, 15/08-15/10
E21B E21B	Earth drilling; recovery of oil, gas, water, soluble materials or mineral slurries from wells	00/00, 21/00, 21/06-21/07, 21/14-21/16, 29/02, 35/00, 37/00, 37/06-37/08, 41/02, 43/00, 43/16-43/295, 43/34, 43/40
E21F	Mine safety devices	00/00, 5/00-5/02, 5/06-5/08, 5/12, 5/16-5/20, 7/00
<b>F: MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING</b>		
F01B	Positive-displacement machines or engines	31/02
F01C	Rotary-piston or oscillating-piston machines or engines	21/04
F01D	Non-positive displacement machines or engines	25/02, 25/22
F01K	Steam engine plants	25/00-25/14
F01N	Gas-flow silencers or exhaust apparatus for machines or engines	3/00-3/021, 3/023-3/025, 3/028-3/029, 3/033-3/035, 3/04, 3/08-3/28, 7/16, 9/00, 11/00
F01P	Cooling of machines or engines	3/22, 9/00-9/02, 9/06
F02B	Internal-combustion piston engines	27/00, 43/08-43/10, 45/00-45/02, 45/06-47/10, 51/00-51/06, 77/00-77/04
F02C	Gas-turbine plants; jet-propulsion plants	3/20-3/30, 3/34, 5/06, 6/10, 7/12, 7/16-7/18, 7/30

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
F02D	Controlling combustion engines	19/00-19/04, 19/12
F02F	Cylinder, pistons or casings for combustion engines	1/12
F02K	Jet-propulsion plants	9/08-9/22, 9/42, 9/70-9/72
F02M	Fuel supply of combustion engines	7/16, 17/40, 25/00, 25/06-25/07, 25/10-27/08
F02P	Ignition	23/00-23/04
F03G	Spring, weight or inertia motors	1/02, 6/00-6/06
F03H	Producing a reactive propulsive thrust	all groups
F04B	Pumps; positive displacement machines for liquids	15/00-15/08, 37/00-37/04
F04D	Non-positive displacement pumps	7/00-7/08, 29/02
F04F	Pumping of fluid by direct contact of another fluid or by inertia	1/14-1/16, 5/36-5/38, 9/00-9/02, 9/06
F15B	Systems acting by means of fluids	21/04-21/06
F15C	Fluid circuit elements for computing or control	1/06
F16C	Shafts; bearings; rotary bodies 33/62-33/66	27/06, 33/00, 33/06, 33/10-33/12, 33/16-33/24, 33/44, 33/56, 33/62-33/66
F16D	Clutches; brakes; couplings for transmitting rotation	3/19, 3/58, 3/68, 3/74, 69/00-69/04
F16F	Springs; shock absorbers	1/02, 1/36, 1/366, 1/37, 3/02, 3/08-3/093, 15/06, 15/08, 15/121, 15/124, 15/133, 15/136, 15/305

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
F16G	Belts, cables or ropes	1/04-1/16, 5/04-5/14, 9/04
F16H	Gearing	15/01, 41/32, 55/06, 55/48, 61/50
F16J	Pistons; cylinders; pressure vessels	1/01-1/02, 9/26-9/28, 15/06-15/14, 15/20
F16K	Valves; taps; cocks	27/00-27/06, 27/08-27/12
F16L	Pipes; general means for thermal insulation	9/00, 9/02-9/127, 9/133-9/153, 11/02-11/15, 11/26, 13/02, 13/08-13/12, 17/067, 23/026, 23/032, 23/20-23/22, 33/34, 47/00-47/03, 47/20-47/24, 55/164-55/1645, 55/175, 58/00-59/02
F16N	Lubricating	15/00-15/02, 17/00-17/06
F17C	Vessels for storing or containing compressed, liquified or solidified gases	1/10-1/16, 3/02-3/06, 3/12-13/00
F17D	Pipelines and systems	1/00-1/05, 1/08, 3/12-3/16
F21K	Light sources	2/00-2/08, 5/00, 7/00
F21V	Features or details of lighting devices	1/16, 1/20-1/24, 3/04, 7/22, 9/00-9/16, 15/01, 15/06, 31/04
F22G	Superheating of steam	1/14
F22B	Steam generation; steam boilers	1/02-1/06, 1/16, 3/02, 37/04, 37/48
F23B	Solid-fuel combustion apparatus	7/00
F23C	Fluent-fuel combustion apparatus	10/00-10/32, 101/00
F23D	Burners	5/00, 14/18, 14/80
F23G	Waste incineration	5/00-5/027, 5/12-5/18, 5/30, 5/48, 7/00, 7/04-7/08, 7/12-7/14
F23J	Removal or treatment of combustion products or residues	1/00, 1/08, 3/00, 9/00, 15/00-15/04



<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
F23K	Fuel feeding to combustion apparatus	1/00-1/02, 5/08-5/12
F23M	Constructional details of combustion chambers	5/00
F23N	Regulation or control of combustion	5/00, 5/12
F23Q	Ignition	2/30, 2/44-2/48, 13/00
F23R	Generation of high pressure or high velocity combustion products	3/40
F24F	Air conditioning	3/12, 3/16, 5/00
F24J	Production or use of heat	00/00-1/00, 2/28, 2/42, 2/46-2/51, 3/00, 3/08
F25B	Refrigeration plants, machines or systems	9/00-9/14, 15/00-15/16, 17/00-17/02, 17/08-17/12, 30/04, 35/00-35/04, 37/00, 43/00-43/04, 47/00
F25D	Refrigerators; cooling or freezing apparatus	5/00-5/02
F25J	Liquefaction, solidification or separation of gases by pressure and cold treatment	all groups
F26B	Drying solid materials	1/00, 3/08-3/097, 5/00, 5/16, 7/00
F27D	Details of kilns, furnaces and retorts	1/00, 1/16
F28C	Direct-contact heat exchangers	3/00-3/18
F28D	Other heat exchangers	13/00, 15/00-15/04
F28F	Details of heat-exchange or heat-transfer apparatus	13/04, 13/18, 19/00-21/00, 23/00-23/02
F28G	Surface cleaning of heat exchangers	9/00, 11/00, 13/00

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
F41A	Features of small arms and ordnance	1/00, 1/04, 21/00-21/04, 21/20-21/22
F41H	Armour	1/00-1/02, 1/08, 9/10
F42B	Explosive charges	1/032, 1/036, 3/107-3/11, 3/192-3/195, 3/28, 4/30, 5/145-5/15, 5/16, 5/188-5/196, 5/26-5/28, 5/295-5/313, 12/00, 12/36-12/50, 12/70-12/82, 14/04, 19/20, 33/00, 33/14
F42C	Ammunition fuses	15/31, 15/36-15/38, 19/08-19/09
F42D	Blasting	1/24-1/28
<b>G: PHYSICS</b>		
G01B	Measurement of length, thickness or linear dimensions	1/00
G01D	Measuring not adapted for a specific variable	15/05, 15/10-15/14
G01F	Measuring volume, flow or level	1/00, 1/72-1/78, 1/86, 3/00, 13/00, 22/00
G01J	Measurement of properties of IR, visible or UV radiation	00/00-1/00, 1/38, 1/42-1/54, 1/58, 3/00, 3/12, 3/18-3/22, 3/26-3/51
G01K	Measurement of temperature	5/00, 5/12, 5/64-5/66, 11/00-11/20, 11/30-11/32, 17/00-17/04, 19/00
G01N	Analyzing materials by determining their chemical and physical properties	00/00-1/02, 1/22, 1/28-1/30, 1/32-1/34, 1/38-1/44, 5/00-7/20, 11/00, 13/00-15/04, 15/06-15/10, 15/14-17/04, 19/10-21/01, 21/17-21/35, 21/39-21/55, 21/59-21/80, 21/82-21/85, 21/88-21/89, 21/90-21/95, 21/958-22/00, 22/04-23/12, 23/20-25/58, 25/62-25/64, 25/70, 27/00-27/18, 27/22, 27/26-27/453, 27/60, 27/62-27/76, 27/92-29/02, 30/00-30/96, 33/00-33/14, 33/18-33/48, 33/554-33/559, 33/569-33/571, 33/574-33/579, 35/00, 35/08-37/00
G01R	Measurement of electric and magnetic variables	13/00, 13/12-13/14, 33/00, 33/12-33/20, 33/28-33/30, 33/32, 33/44-33/50, 33/60-33/64

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
G01T	Measurement of nuclear or x-radiation	00/00-1/10, 1/11-1/142, 1/16-1/163, 1/167-1/17, 1/178-1/205, 1/22-7/06
G01V	Geophysics	5/00, 5/04-5/14
G02B	Optical elements, systems or apparatus	1/00-1/12, 5/00, 5/32-6/02, 6/10-6/12, 6/13-6/138, 6/16-6/245
G02F	Optical devices	00/00-1/1337, 1/1343-1/155, 1/167-1/295, 1/35-1/39, 3/00-3/02
G03C	Photosensitive materials and processes in photography	00/00, 1/025, 1/74, 1/785, 1/805-1/81, 1/91, 1/95-3/00, 5/00, 5/04-5/18, 5/28-5/29, 5/60, 7/04-7/24, 7/46, 8/30, 8/34, 8/40-8/50, 9/00-11/00, 11/06-11/24
G03F	Photomechanical production of textured or patterned surfaces	00/00-1/12, 7/00, 7/09-7/18, 7/26-7/42
G03G	Electrography and electrophotography	00/00-5/05, 5/082-5/087, 5/10-5/16, 13/00-13/08, 13/095-13/34, 16/00-17/04, 17/08-17/10, 21/00, 21/06-21/10
G04B	Mechanical clocks and watches	31/004-31/016, 31/08, 39/00-39/02
G05D	Control systems for non-electric variables	5/00, 5/04, 7/00, 11/00-11/02, 11/08-11/12, 11/16, 21/00-22/00, 23/00, 24/00, 27/00, 29/00
G06G	Analog computers	7/48, 7/54-7/58, 7/75
G06K	Data recognition; record carriers	19/02
G08B	Signaling or calling systems	17/00, 17/08-17/11, 17/117-17/12, 21/00, 21/12-21/16
G09B	Educational or demonstration devices	23/00, 23/12, 23/20, 23/24-23/26
G10K	Sound-producing devices	11/162-11/168
G11B	Information storage	3/70, 5/127-5/133, 5/187, 5/235, 5/255-5/265, 5/31, 5/33, 5/40-5/41, 5/62-5/738, 5/84-5/858, 7/00, 7/24-7/26, 7/30-9/06, 9/08-11/03, 11/105-11/115, 11/24-13/08

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
G11C	Static stores	13/02
G12B	Details of instruments	21/00-21/08
G21B	Fusion reactors	all groups
G21C	Nuclear reactors	00/00-3/07, 3/16-3/32, 3/324-3/326 3/36-3/40, 5/00, 5/12, 5/18-7/107, 7/22-7/34, 9/00, 9/02-11/00, 11/06-13/00, 13/08-15/00, 15/24-15/247, 15/253-15/257, 15/28-17/00, 17/02-17/028, 17/06, 19/00, 19/28-19/32, 19/34, 19/38, 21/00-21/02, 21/14-23/00
G21D	Nuclear power plant	00/00, 7/00, 7/04
G21F	Radiation protection; decontamination	00/00-1/12, 5/00-5/008, 5/015, 9/00-9/36
G21G	Conversion of chemical elements and radioactive sources	4/00-5/00
G21H	Energy from radioactive sources	00/00-7/00
G21J	Nuclear explosives	00/00-1/00, 5/00
G21K	Techniques for handling of particles or radiation	1/00-1/06, 1/10-5/00, 7/00
<b>H: ELECTRICITY</b>		
H01B	Cables, conductors, insulators and dielectrics	00/00, 7/17, 7/28, 7/288-7/295, 12/00, 13/16, 13/22
H01C	Resistors	7/00-7/04, 7/10-7/105, 7/12-7/13, 10/00-10/02, 11/00-13/00, 17/00, 17/06-17/20
H01F	Magnetic materials and inductors	00/00, 1/03, 5/00, 6/00-6/06, 10/06, 27/00, 27/23, 41/00, 41/14-41/28
H01G	Capacitors	00/00, 4/00-4/008, 4/018-4/224, 5/00-5/014, 7/00-9/02, 9/04, 9/048-9/055, 9/07-9/08, 9/145-9/155, 9/22-9/28, 15/00-17/00
H01H	Electric switches	1/00-1/04, 29/06, 33/22, 33/76, 85/06, 85/11, 85/17, 85/18

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
H01J	Electric discharge tubes or discharge lamps	00/00, 1/05, 1/12, 1/14, 1/30-1/38, 1/46-1/48, 1/53-1/54, 1/58-1/64, 1/68-1/74, 1/78, 1/90, 7/00-7/12, 9/00-9/04, 9/12-9/14, 9/20-9/233, 9/52, 13/00-13/08, 13/16, 13/28, 15/00-15/02, 17/00-17/10, 17/20, 17/24-17/26, 17/38, 17/50, 19/00-19/06, 19/24-19/32, 19/54-19/57, 19/68-19/70, 21/00-21/02, 21/20, 27/00-27/04, 27/14-27/16, 27/20-29/04, 29/08-29/28, 29/36, 29/48, 29/84-29/86, 29/88, 29/94, 31/00, 31/08, 33/00, 35/00-35/08, 35/20, 37/00-37/06, 37/073-37/09, 37/244, 37/252, 37/26-37/295, 37/317-40/06, 40/10, 40/16-40/18, 41/00-41/20, 43/00-43/04, 43/22, 45/00-47/12, 49/00-49/18, 49/26-49/30, 49/34-49/36, 49/40-61/073, 61/12, 61/26-61/28, 61/35, 61/38-61/48, 61/54, 61/58-61/64, 61/70-61/76, 61/80, 61/98-65/08
H01K	Electric incandescent lamps	00/00-1/10, 1/20, 1/28, 1/32, 1/40, 1/50-1/56, 3/02
H01L	Semiconductor devices	00/00-21/302, 21/306-21/445, 21/46-21/461, 21/465-21/479, 21/62-21/64, 21/70-21/763, 21/765-21/86, 23/00, 23/06-23/10, 23/14-23/15, 23/18-23/29, 23/36, 23/373, 23/427, 23/46-23/482, 23/488, 23/52, 23/532, 23/552-23/556, 27/00-29/04, 29/12-29/28, 29/36-29/40, 29/43-29/812, 29/86-31/0232, 31/0248-31/0336, 31/036-31/042, 31/052-31/055, 31/06-35/02, 35/08, 35/12-35/28, 35/32-39/02, 39/12-41/047, 41/06-41/087, 41/12-51/40, 101/00
H01M	Processes or means (e.g., batteries) for direct conversion of chemical energy into electrical energy	00/00-2/00, 2/14-2/16, 2/20-2/22, 2/26, 2/32, 4/00-4/20, 4/22, 4/62-4/68, 4/72-4/76, 4/80-4/84, 6/02, 6/08-6/12, 6/22, 6/30-6/48, 8/00-8/04, 8/24-10/00, 10/04-10/12, 10/18-10/40, 10/52, 12/00-16/00
H01P	Waveguides	00/00-1/00, 1/10-1/11, 1/15, 1/20, 1/215-1/218, 1/22
H01R	Electrically conductive connections	3/00, 4/00-4/04, 4/58, 13/00-13/03, 39/18-39/22
H01S	Devices using stimulated emission	00/00-3/03, 3/036-3/038, 3/09-3/10, 3/102-3/104, 3/11-3/113, 3/13-3/134, 3/14-4/00, 5/00, 5/028-5/068, 5/0687-5/12, 5/14-5/50

<b>Class/ Subclass</b>	<b>Subject Matter</b>	<b>Groups Selectively Covered in <i>Chemical Abstracts</i> (July 2000- )</b>
H01T	Spark gaps; corona devices	1/00, 1/20-1/24, 13/38-13/39
H02K	Dynamo-electric machines	1/02-1/04, 3/02, 3/30, 3/44, 5/02, 44/08-44/10
H05B	Electric heating; electric lighting	00/00, 3/10-3/14, 7/06-7/09, 31/00-31/02, 31/06-31/14, 33/00, 33/12-35/00
H05F	Static electricity	1/00-1/02
H05G	X-ray technique	00/00-1/00, 2/00
H05H	Plasma technique; production of charged particles, neutrons or atomic or molecular beams	00/00-1/00, 1/24-1/26, 1/54-6/00, 9/00-15/00
H05K	Printed circuits; manufacture of electric component assemblies	00/00-1/11, 1/16, 3/00-3/02, 3/06-3/18, 3/22, 3/26-3/28, 3/34, 3/38-3/46

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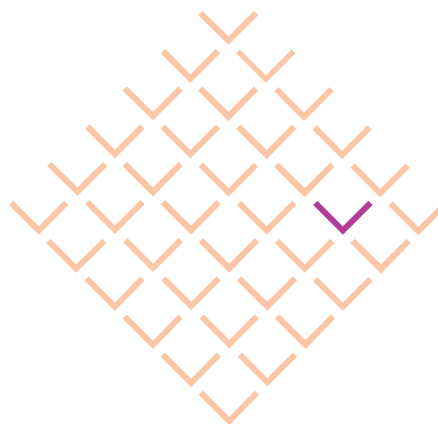
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