The Rapra Abstracts Rubber and Plastics Database

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The development, maintenance, and operation of the Rapra Rubber and Plastics Database is described, and its role in the overall effort of Rapra Ltd., a U.K.-based consultancy, is defined.

INTRODUCTION

Rapra Technology Ltd. is a major U.K.-based consultancy, whose specialty is rubber and plastics. Rapra—formerly the Rubber and Plastics Research Association of Great Britain—offers a comprehensive range of services for the solution of technical and commercial problems. About 170 staff are employed at Rapra, as shown in Figure 1. More than half of the staff are professionally qualified in a range of disciplines, including polymer science and technology, polymer engineering, physics, chemistry, economics, and information science. The 4-ha headquarters site at Shawbury, in Shropshire, includes laboratories, test areas, workshops, pilot plants, and pre-production units, together with an extensive library and information center, as shown in Figure 2.

The Association's location in Shawbury places it close to the U.K. motorway network, providing links to all of Britain's major industrial and commercial centers. The nearest town, Shrewsbury, offers rail connections to most cities, and the international airports at Manchester and Birmingham are within easy driving distance.

RAPRA'S MISSION

The company mission statement is

> "Rapra will maintain and exploit the leading knowledge base for plastics and rubber materials, processes, and products".

and helps the company to focus its activities on its main area of expertise—rubber and plastics technology. The company maintains an extensive information center that exists to provide the rubber and plastics industries with information appropriate to their needs. A further purpose is to supply Rapra's own technical and marketing divisions with information as it is needed. One of the products of the information center is the Rapra Online Abstracts Database, which is summarized in Figure 3.

Rapra Abstracts is the only online database in the world which is dedicated exclusively to information concerning rubber, plastics, and polymeric composites. The database consists of a collection of over 300 000 carefully produced, extensively indexed records dealing with the wide range of subjects shown in Figure 4. These include technical, academic, commercial, and marketing aspects of the rubber and plastics industries. The database was computerized in 1972 and is now available for online searching via the ORBIT Search Service. It is an invaluable tool for those wishing to keep up-to-date with developments in the technology of rubber and plastics. The database is updated every 2 weeks when, typically, some 1000 new abstracts are added to it.

SOURCE MATERIAL

Sources for the data in the Rapra Database are summarized in Figure 5. Material is selected from over 500 journals from 30 different countries in various languages. Some of these are shown in Figure 6. Conference proceedings from such organizations as

Plastics and Rubber Institute (PRI)
American Chemical Society (ACS)
Society of Plastics Engineers (SPE)
Society of the Plastics Industry (SPI)
British Plastics Federation (BPF)

and many others are also included, when appropriate, into the database, as are books, technical reports, standards, and a large collection of trade literature. A breakdown of the database by source is given in Figure 7.

In 1990, 76% of the abstracts in the database were from journal papers with the remainder divided more or less evenly between book/conference papers and commercial brochures/material data sheets. Other items such as standards and government reports accounted for under 2% of the total.

About a dozen journals are considered to comprise a core, representative of rubber and plastics trade journals. These include

Plastics and Rubber Weekly
European Plastics News
Modern Plastics International
Rubber and Plastics News

and virtually every article, however short, is selected from these journals, avoiding duplication, where possible. Many academic journals, because of their content, are also abstracted extensively. These include such titles as

Polymer
Macromolecules
Progress in Rubber and Plastics Technology

Finally, a number of journals dealing with specific applications areas are selected. These include

Adhesives Age
Journal of Coatings Technology
Packaging
Pipes and Pipelines International
Polymer, Paint and Colour Journal
Reinforced Plastics
Journal of Pharmaceutical Sciences
Tire Science and Technology

Geographically, the coverage is international, as is shown in Figure 8. Information is selected from and about all parts of the world. The large majority (90%) of the source material is in English.

All source material is held at Rapra and is made available, as shown in Figure 9, via our photocopy/loans service to users of Rapra's Database who can take advantage of this service either by Orbdoc online ordering or with purchased library vouchers.

SUBJECT COVERAGE

The subjects covered in the Rapra Database are given in Figure 10, and the breakdown, by subject, of the database is shown in Figure 11. The economic and commercial information is extracted from leading trade journals and in addition, titles such as

Chemical Week
Financial Times
Rubber Trends

0095-2338/91/1631-0476$02.50/0

TOTAL STAFF 170

100 TECHNICAL AND RESEARCH

40 INFORMATION AND BUSINESS CONSULTANCY

Figure 1. RAPRA Technology Ltd. staff.

- PROCESSING EQUIPMENT (INJECTION MOULDING, EXTRUSION, COMPOUNDING)
- PHYSICAL TESTING LABORATORIES
- CHEMICAL ANALYTICAL LABORATORIES
- TECHNICAL & COMMERCIAL POLYMER LIBRARY

Figure 2. Physical resources.

- The largest database in the world dedicated exclusively to rubbers, plastics and polymer based materials.
- Contains 19 years of information from 1972.
- Contains over 320,000 records.
- Updated every two weeks with over 1000 new items.

Figure 3. Rapra Abstracts Database.

A wide range of information types of interest to those involved in :-

- Technical research
- Marketing and market research
- Business development and planning
- Product development
- Materials development, selection and specification
- Process selection and optimisation
- Prior arts searching

Figure 4.

- Over 500 journal titles
- More than 150 new books each year
- More than 250 conference proceedings each year
- A unique collection of company brochures including materials specification, new product announcements and company annual reports

Figure 5. Source material.

TITLE	POSTINGS
Macromolecules	5607
Financial Times	2116
Rubber & Plastics News	3051
Journal of Biomedical Materials Research	660
ACS Conference Papers	2400
SPE Conference Papers	4765
SPI Conference Papers	1714

Figure 6. Postings to selection of journals and conference proceedings.

plus many others which contain primarily economic information are consulted continuously. Articles of interest range from news briefs to complete statistical reports, company profiles, and brief items announcing new products and materials.

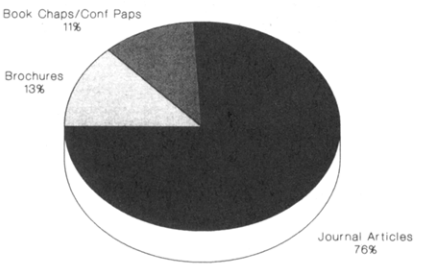

Figure 7. Source documents 1990.

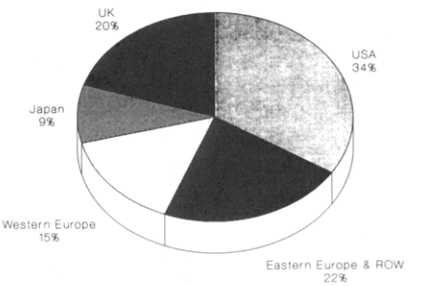

Figure 8. Geographic locations 1990.

- Most of the documents cited in the Rapra files are available for photocopy or loan.
- Documents can be ordered online via ORBDOC or customers can purchase our prepaid photocopy/loan vouchers.
- Price includes airmail delivery and is independent of document size.
- Orders are despatched within 24 hours of arrival at Rapra.
- Fax service available.
- Invoices are sent every three months.

Figure 9. Document delivery.

- Economic and Commercial
- Industrial Organisation/Administration
- Health, Safety and Toxicity
- Legislation and Regulations
- Machinery and Test Equipment
- Processing
- Materials and Monomers
- Compounding Ingredients/Additives
- Synthesis, Polymerisation, Modification
- Properties and Testing
- Applications of Polymers

Figure 10. Subject coverage.

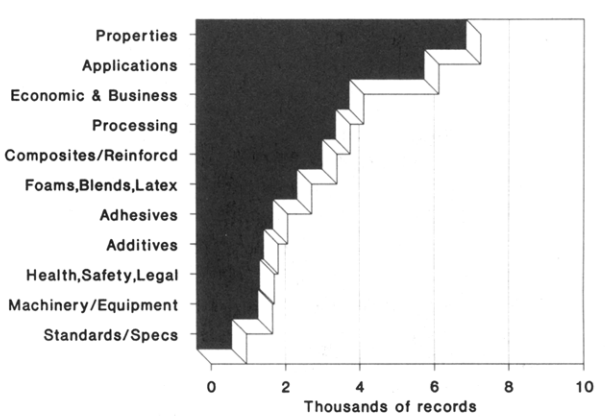

Figure 11. 1990 subject coverage.

Industrial organization and administration is covered by means of abstracts of the larger, more significant articles. It includes such topics as

- factory layout
- quality control
- pollution
- noise control
- employment
- education and training

Where related to the rubber and plastics industries, coverage in the Rapra Abstracts of the health, safety, and toxicity areas is very good and includes

- industry-related diseases
- industrial environmental monitoring
- toxic effects of specific materials used in the rubber and plastics industry
- threshold limit values
- accidents and accident prevention
- law relating to safety and health

A major part of the section on legislation and regulations relates to health and safety. The database also covers law relating to patents, design, trademarks, copyright, and companies.

The coverage of machinery, test equipment, and processing is particularly strong and includes

- mixing and granulating
- extrusion and extruders
- molding and molding machines
- coating and impregnating
- surface treatment

Coverage of monomers is limited mainly to reviews and economic information. Materials are described in depth; who makes them, how they are processed, what applications they are used in, and what properties they have.

Additives and compounding ingredients represent another area where Rapra's coverage is strong. Subjects in this section include

- reinforcing agents and fillers
- pigments and dyes
- plasticizers, extenders, lubricants, peptizers, and tackifiers
- antidegradants, antioxidants, antiozonants, preservatives, stabilizers, and protective agents
- accelerators, cross-linking, and curing agents
- odorants
- blowing agents
- solvents and swelling agents
- surface active agents
- creaming agents
- coagulants
- antideteriorants
- gelling agents
- viscosity modifiers

The selection in the areas of synthesis, polymerization, and chemical modification includes all significant papers from our source documents.

Properties and testing is another area in which Rapra's coverage is strong. It includes the following:

- chemical constitution
- cross-linking phenomena
- crystallinity
- molecular structure and weight
- toxicity
- aging, swelling, weathering, chemical resistance, biological attack
- colloidal properties
- mechanical properties, including tensile, shear, compression, creep, fatigue, friction, abrasion
- thermal properties and flammability
- electrical and magnetic properties
- rheological properties
- morphological properties
- specific gravity, density, porosity
- acoustic properties
- adhesion
- nondestructive testing

The coverage of applications is extensive and ranges from polymeric forms through semifinished products, uses for particular industries, to specific applications. Polymeric forms come under any of the following headings:

- latexes
- solutions
- plastisols
- foams
- blends
- liquid polymers
- thermoplastic elastomers

Semifinished products include:

- mixes and compounds
- powders
- extrusions
- sheeting
- film
- laminates
- reinforced plastics
- proofed and coated fabrics
- fibers
- synthetic leather

Industries with polymer applications include:

- agriculture
- brewing
- engineering
- energy
- nuclear
- printing
- military
- building
- entertainment
- marine and quarrying
- transport

and specific applications include:

- adhesives, coatings, and sealants
- belting (conveyor and power transmission)
- clothing and footwear
- domestic fittings and accessories, furniture, soft furnishing, carpets
- electrical and electronic components
- fancy goods
- games, sports appliances, toys
- hose, tubing, piping
- joints, seals, packing, and other mechanical parts
- optical and other scientific instruments
- insulation
- polymers as chemical reagents
- vehicle shells and accessories (road, marine, air, and space)
- packaging and containers
- roads, building, construction, flooring, etc.
- surgical, medical, dental, and veterinary applications
- tires and tracks
- vibration dampers and shock absorbers
- rollers
- stationers' goods, office accessories

For each article that is selected, a reference and an abstract are prepared and extensive indexed sections are added. An

example of a completed abstract is given in Figure 12.

SEARCHING THE FILE

This section describes several searches of the Rapra Database conducted mainly with free-language search terms. These illustrate the range of information in the database as well as the need to use standard abbreviations when searching.

Search for Suspension Polymerization of PVC:

search terms	postings
PVC OR POLYVINYL()CHLORIDE	SS1 PSTG (24277)
SUSPENSION()POLYMERISATION	SS2 PSTG (788)
1 AND 2	SS3 PSTG (326)

Search for SBR Stress–Strain Properties:

search terms	postings
SBR OR BUTADIENE()STYRENE	SS 1 PSGT (5275)
STRESS-STRAIN PROPERTIES	SS 2 PSTG (5459)
1 AND 2	241

Search for Company Activities of Carl Freudenberg in U.S.:

search terms	postings
FREUDENBERG/CO	SS 1 PSTG (113)
USA/LO	SS 2 PSTG (65199)
COMMERCIAL INFORMATION	SS 3 PSTG (32844)
1 AND 2 AND 3	SS 4 PSTG (9)

Search for CFC Replacements:

search terms	postings
CFC OR CHLOROFLUOROCARBON#	SS 1 PSTG (480)
REPLACEMENT OR SUBSTITUTE	SS 2 PSTG (6732)
1 AND 2	SS 3 PSTG (243)

Carbon Fiber Composites in Aerospace:

search terms	postings
CARBON()FIBRE()REINFORCED OR CFRP	SS 1 PSTG (4887)
AEROSPACE	SS 2 PSTG (2457)
1 AND 2	SS 3 PSTG (541)

SEARCH AIDS

Rapra's Online User Manual is an essential search aid for regular users of the database. It contains comprehensive details on the content and structure of the database, and includes subjects covered, formats, search strategies, and examples of searches. Also included is Rapra's full subject classification, with indexes, which allows each record to be searched for on the basis of its subject coding rather than with natural language. A full list of journals which have been abstracted is also provided, together with publishers' details and further coding, which assists in searching. The photocopy and loan service which Rapra provides are also detailed.

Rapra Keyterm Thesaurus. The Rapra Keyterm Thesaurus is a search tool for searching the Rapra Database. The terms listed are

index terms	(/IT)
index terms (nonpolymeric chemicals)	(/NP)
geographic locations	(/LO)

All terms that appear 10 times or more in the database are incorporated into the Keyterm Thesaurus in alphabetical order, together with their occurrence frequency. In addition, all terms which are "up-posted" or cross-indexed to other terms are included. As an example, whenever a document is indexed with the term CROSSLINKING AGENT, the system adds the term CURING AGENT. The index term sections of the thesaurus contain the following entries to indicate this up-posting:

CROSSLINKING AGENT (1110)
up CURING AGENT
–
–
CURING AGENT (4751)
uf. CROSSLINKAGE INTENSIFIER
CROSSLINKING AGENT
CURING AGENTS
CURING AGENT
HARDENER
VULCANISING AGENT

The number in parentheses indicates the occurrence frequency of the term in the Rapra Abstracts Database, "up" means up-posted to, and "uf" means up-posted from. This system of up-posting was introduced in 1983 and has been expanded continually since then. Index terms can be up-posted to synonyms, near synonyms, preferred spellings, preferred word forms (singular, plural, etc.), abbreviations, full meanings of abbreviations, or broader terms. For a retrospective search in the database, one should consider using all relevant terms related by "uf" or "up". For purpose of selective dissemination of information, one need use only the term, if applicable, to which it is up-posted.

There are some special index terms. The following terms are always considered first when indexing: RUBBER; THERMOPLASTIC; THERMOSET; PLASTIC; ECONOMIC; INFORMATION; STATISTICS; COMMERCIAL INFORMATION; COMPANY; REVIEW; THEORY; DATA; SHORT ITEM; PRODUCT ANNOUNCEMENT; TECHNICAL. These terms can be very useful in building a search strategy, but one should be aware that indexing policies have seen changes over the years. Several of the above terms were only introduced in 1986.

Table I

U.S. spelling	Rapra Database spelling
tire	tyre
mold	mould
aluminum	aluminium
polymerization	polymerisation
fiber	fibre
color	colour
sulfur	sulphur

SPELLING

Rapra standardized database entry by using English spelling in all cases except in titles of books and monographs and company names. All the abstract and index fields however employ English spelling. The letter "s" is used in preference to the letter "z" whenever there is a choice. A list of examples (Table I) is not exhaustive but will serve as a reminder:

THE RAPRA CODE FOR THE SYSTEMATIC CLASSIFICATION OF SCIENTIFIC, TECHNOLOGICAL, AND COMMERCIAL INFORMATION ON POLYMERS

The original version of the code for the systematic classification of scientific, technological, and commercial information on rubber was devised by T. R. Dawson for the use of the Information Centre of the Research Association of British Rubber Manufacturers (RABRM), known today as RAPRA. It was based on the extensive collection of information already on file and was first published in the *Journal of Rubber Research*[1] together with a discussion of the philosophy of class formation and an appraisal of other systems available at the time. A complete revised edition of the code, which became known as the Dawson Code, was published by RABRM in 1942,[2] and all the subsequent revisions owe much

to the foundation laid by Dawson.

The next major revision of the code was carried out by the International Committee for the Classification of Rubber Information (ICCRI), which was convened by the Institut Français do Caoutchouc, the Rubber-Stichting, and RABRM. The revised code was published in 1952[3] and was adopted for general use by all three organizations.

In the early sixties, RAPRA widened the scope of its information service to incorporate all plastics and, as a result, once again faced the necessity to revise its systems of classification. Following an investigation of other available systems, including the system in use at RAPRA at that time, the decision was taken to develop a new code, which was published in 1964.[4] RAPRA wishes to acknowledge the collaboration of the British Plastics Federation and other industrial organizations which contributed to the development of the code in 1964. Comparison of the various editions of the codes used by RAPRA reveals an underlying philosophy common throughout. In the years since 1964, many amendments have been made to this code and appear in the 1980 edition, which is the one currently in use.

A small sample of codes from the RAPRA polymer index is given in Table II.

A small sample of the codes from the General Index is given below:

FILM 625, (see also PACKAGING FILM AND FILM PRODUCTS, PHOTOGRAPHIC APPLICATIONS, SHEETING, LAMINATES)
FILTERS (optical) 6K13 (see also MEMBRANES 6M)
FILTERS (chemical) 6J77
Polarising filters
FINISHING PROCESSES 8(11)3 (see also MACHINING, SURFACE TREATMENT)
Deflashing 8(11)33
Heat treatment (including annealing) 8(11)31
Orientation 8(11)32
FIRE FIGHTING APPLICATIONS 63FF
FIRE RETARDANCY, see FLAMMABILITY, FLAME RETARDANTS 968; 54F
FIRES, see ACCIDENTS 153
FISHING APPLICATIONS 63F (see also NETS)
FITTINGS 6H3 (hose, tubing and pipes)
FLAME INSULATION 6L4
FLAME PROOFING see COATINGS 6A315
FLAME RETARDANTS 54F
Antimony compounds 54FA
Coatings 54F-6A315
Halogen compounds 54F
In:
Phosphorus compounds 54FP
Reactive flame retardants (non additive but chemically bound to the polymer) 54F
FLAME SPRAYING, see COATINGS 877
FLAMMABILITY 968
FLASH REMOVAL, see FINISHING PROCESSES 8(11)33
FLEXURAL PROPERTIES (including cut growth, cutting resistance)9516
FLOCCULANTS 6M; 59C
FLOCKING, see SURFACE TREATMENT 8(11)3465
FLOOR COVERING 6R41 (see also CARPETS and BUILDING APPLICATIONS
Conductive
Tiles
FLOW PROPERTIES, see RHEOLOGICAL PROPERTIES 9(10)

Codes in "packaging" section

6P. PACKAGING AND CONTAINERS (for shock absorbing packaging see 6V8)
6P1. PACKAGING SHEETS AND FILM; COATED PAPER; LAMINATED FILM; LAY FLAT TUBING
6P11. Sheet film
6P12. Bags and sachets
6P121. Heavy duty
6P13. Linings for bags, cartons, and the like
6P2. CONTAINERS (for domestic containers see 6D1)
6P21. Bottles (for chemical apparatus see 6K3)
6P22. Tubes
6P23. Bubble packs, blister packs
6P24. Boxes including coffins (for battery boxes see 6E4(12)1)
6P25. Tanks, carboys, silos, tankers
6P251. Flexible tanks
6P2511. Dracones and the like
6P252. Self-sealing fuel tanks
6P253. Drum and tank linings
6P26. Crates
6P3. PROTECTIVE COVERS
6P31. Tarpaulins, car covers, and the like
6P32. Ground sheets (for ground covers, e.g. PVC mulch, see 63Ag)
6P33. Covers for storage tanks
6P4. PACKAGING ACCESSORIES
6P41. Stoppers, closures, crown caps, bungs, and the like
6P42. Corner and eyelet reinforcement
6P5. STRING, ROPE, TAPE, NET, AND CHAIN
6P51. String, rope, and net
6P52. Tape (for adhesive packaging tape see 6A73)

USE OF RAPRA CLASSIFICATION CODES IN SEARCHING

The Rapra classification can be used in searching to emulate the old subject index card files. Many prefer to use a coding system for searching, and the Rapra classification offers an ideal solution which can be extremely useful when searching broad subject areas. The best way to use the code in online searching is to use the codes specific to each relevant area and combine them with a Boolean AND. This method of searching results in searches with highly relevant recall, but it is by no means as exhaustive as free-language or indexed term searching.

The following examples illustrate the use of the classification code.

Mechanical Properties of Polyethylenes (PE). The classification code for mechanical properties is 95: The ":" is a truncation symbol whose use here ensures that the full range of mechanical property classifications will be retrieved. The code for PE is 42C11. The search expression is

/CL 42C11 AND 95:

Use of 42C11/CL obviates the need to search for the various types of PE (e.g., LDPE, HDPE, LLDPE, and so on) and eliminates any possibility of confusion with materials such as polyethylene glycol, polyethylene terephthalate, and so on. Similarly, 95:/CL makes it unnecessary to search for the full range of mechanical properties, such as tensile properties, creep, abrasion, friction, etc.

It should be noted that papers on mechanical properties of a range of polymers including PE will not be retrieved by this search statement, nor will papers dealing with the full range of properties (including mechanical) of PE.

Economic Information on Polypropylenes (PP). In this search, use of free language or controlled terms produces many undesired references to products. This can be avoided by the use of 1742/CL, the Rapra classification code for economic information on synthetic materials, together with 42C12/CL, the code for PP:

/CL 1742 AND 42C12

Similarly, for economic information on packaging products, the code 176/CL for economic information on finished and semifinished applications of polymers should be used together

AN - 390096

ABN - 0046368L;A0005570L

IS- 9003

TI - MODIFIED CYANOACRYLATE ESTER BONDS SOLID ROCKET BOOSTERS

AU - Novak H L;Comer D A

OS - UNITED TECHNOLOGIES CORP.

SO - Adhesives Age 33,No.2,Feb.1990,p28-31

LO - USA

DT - J

IT - ACRYLIC POLYMER; ACRYLIC RESINS; ADHESIVE; BONDING AGENT; COMPANY; COMPANIES; DATA; DEVLOPMENT; FOAM CELLULAR MATERIAL; NEOPRENE; CHLOROPRENE POLYMER; PLASTIC; POLYACRYLATE; POLYCYANOACRYLATE; CYNAOACRYLATE POLYMER; ROCKET BOOSTER; RUBBER; RUBBER-MODIFIED; SEAL; SPACE APPLICATION; SPACE SHUTTLE; TECHNICAL; THERMOPLASTIC; TOUGHNESS

NP - ALUMINIUM

ST - ADHESIVES, cyanoacrylate polymers; CYANOACRYLATE POLYMERS, adhesives; SPACE APPLICATIONS, bonding agents; BONDING AGENTS, chloroprene polymers, space applications

TN - PRISM 410

CO - LOCTITE CORP.

CC - QB; KK; KO; QN; SK; ADANC; ADALE; ADARE

CL - 42C351-6A1;42D14-6N3-8(10)1

AB - A report is presented on the development of an improved adhesive system for bonding neoprene foam rubber seals to forward skirt solid rocket booster structures on the space shuttle. The advantages of the toughened cyanoacrylate adhesive system selected (Loctite Prism 410) are discussed and test procedures are considered.

Figure 12.

Table II

parylene (polyparaxylylene)	42W
PCTFE (polychlortrifluoroethylene)	42C38(11)
pentaerythritol polymers	43C22
pentadiene polymers	42D1
pentene polymers	42C1
penton (Chlorinated Polyether)	43C522
perbunan C	42D14
perfluorobenzylene oxide polymers	42W
perfluorophenylene polymers	42C38
perspex (polymethyl methacrylate)	42C35121
PETP	43C112
phenanthrene polymers	42C2
phenol aldehyde resins	44C
phenol formaldehyde resins	44C11
phenol furfural resins	44C12
phenolic resins	44C

with 6P:/CL, the range of packaging applications. The search expression will be

/CL 176 AND 6P:

Sometimes, the best approach to the desired result is by means of a combination of classification code with textual terms. As an example, economic information on PP products, rather than on PP materials will be retrieved with

176/CL AND (/IT PP OR POLYPROPYLENE ORPROPYLENE POLYMER)

Another classification code which is useful when seeking commercial company information (takeovers, mergers, financial performance) is 06.

Table III

subject	code
ABS, ACRYLONITRILE BUTADIENE STYRENE TERPOLYMER	42C21C391D11/CL
BUTYL RUBBER, BUTENE ISOPRENE RUBBER	42C13D12/CL
EPDM, ETHYLENE PROPYLENE DIENE TERPOLYMER	42C11C12D1/CL
EVA, ETHYLENE VINYL ACETATE COPOLYMER	42C11C3311/CL
NR, NATURAL RUBBER	41C1/CL
NITRILE RUBBER, BUTADIENE ACRYLONITRILE RUBBER (also NBR)	42D11C391/CL
PE, POLYETHYLENE	42C11/CL[a]
PETP (also PET), POLYETHYLENE TEREPHTHALATE	43C112/CL
PMMA, POLYMETHYL METHACRYLATE	42C35121/CL
PP, POLYPROPYLENE	42C12/CL
PS, POLYSTYRENE	42C21/CL
PTFE, POLYTETRAFLUOROETHYLENE	'42C38(10)'/CL
PU, POLYURETHANE	43C6#/CL[b]
Polyether urethanes	43C66/CL
Polyester urethanes	43C64/CL[c]
PVC, POLYVINYL CHLORIDE	42C382/CL
PVDC, POLYVINYLIDENE CHLORIDE	42C387/CL
PVDF, POLYVINYLIDENE FLUORIDE	42C386/CL
SBR, BUTADIENE STYRENE RUBBER	42D11C21/CL
POLYAMIDE/NYLON	43C3# # # # #/CL[d]
POLYAMIDE 6	43C326/CL
POLYAMIDE 66	43C313/CL
POLYCHLOROPRENE/NEOPRENE	42D14/CL

[a] This section is about to be amended and subdivisions will be introduced. [b] For all types of polyurethane. [c] Many papers of polyurethane give no indication as to type and are classified generally (43C6#/CL). [d] Includes all types of nylon. For different types of polyamide, see the Thesaurus.

Searching for Some Common Polymers Using Codes. (See Table III.)

RAPRA ABSTRACTS ON CD-ROM

The most recent development in connection with the Rapra Database has been the introduction of a complete search system on CD-ROM. This has been developed using the BRS software and has a user-friendly menu-driven mode as well as the command mode. This version of the Rapra Database contains over 240 000 records from 1980 to date and is updated every two months with over 4000 new records. This version runs on IBM PCs or compatibles and requires approximately 300K RAM.

REFERENCES AND NOTES

(1) Dawson, T. R. Systematic Classification of Scientific, Technological, and Commercial Information on Rubber. *J. Rubber Res.* **1937**, *6*, 67–132.
(2) Dawson, T. R. Systematic Classification of Scientific, Technological, and Commercial Information on Rubber. *J. Rubber Res.* **1942**, *11*, 23–65.
(3) Systematic Classification on Scientific, Technological, and Commercial Information on Rubber. *RABRM Information Bureau Circular* **1952**, *410*, 1–36.
(4) Proposed Code for the Systematic Classification of Scientific, Technological, and Commercial Information on Rubber; RAPRA/7316 (Sept 1964).