Derwent™

A Clarivate Analytics company

DWPI Polymer Indexing

What it is and how to search it

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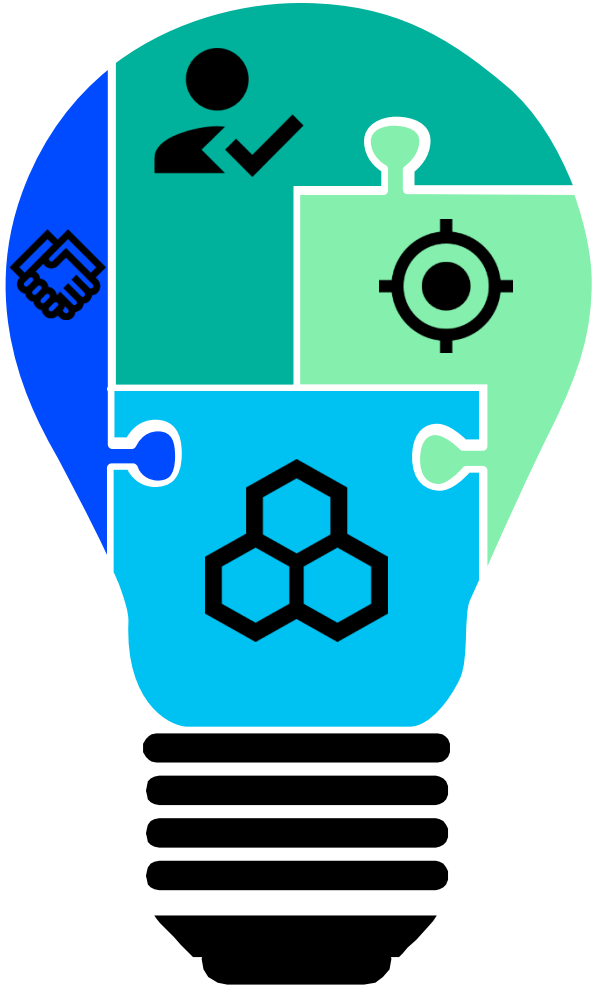
Overview and coverage

Why use Polymer Indexing?

Expert review
The DWPI polymer editorial team manually applies the coding

By searchers, for searchers
A system created in conjunction with the users



Unparalleled precision
Three level linking allows for precise retrieval

Unique technical coverage
The right codes for the right concepts

What receives Polymer Indexing?

Polymer Indexing applied

A	**Polymers & plastics**
B	Pharmaceuticals
C	Agrochemicals
D	Food, detergents, water treatment, biotechnology
E	General chemicals
F	Textiles & paper
G	Printing, coating & photographic
H	Petroleum
J	Chemical Engineering
K	Nucleonics, explosives & protection
L	Refractories, glass, ceramics cement & electro(in)organics
M	Metallurgy

CPI : Chemical Patents Index

Who can access Polymer Indexing?

- Requires CPI subscription
- At least four (4) units
- Includes Section A

Polymer Indexing coverage

- AKA Derwent Enhanced Polymer Indexing
- Replaced PLASDOC Coding (coverage from 1966 – 1994)
- Introduced in mid-1993 and overlaps with PLASDOC through 1994
- Enhanced Polymer Indexing ONLY from 1995 to date

Information indexed

- All polymer related information is indexed from:
  - patent claims
  - *DWPI* documentation abstract
  - claims related example
- Both general and specific concepts
- Contains information not present in the Derwent online abstract
  - generates unique hits compared to text searching, IPCs, CPCs, etc.

Main features of Polymer Indexing

- System is divided into hierarchies of related codes
  - hierarchies divided into two groups STRUCTURAL & NON-STRUCTURAL
- Each hierarchy has a UNIQUE CODE FORMAT
- CHEMICAL ASPECTS - chemical fragment codes for indexing all specific and generic structures (for all polymers, additives, catalysts etc.)
- AUTO-POSTING of codes
  - UP-POSTING within code hierarchy
  - CROSS-POSTING between hierarchies
- LINKING of related terms

Structural information indexed

Type of information	Code Format
Polymer Formers (i.e. monomers and condensants)	(Rnnnnn, Gnnnn)
Polymer Types	(Pnnnn)
Modified Polymers	(Mnnnn)
Natural Polymers	(Rnnnnn, Gnnnn)
Chemicals	(Rnnnnn, Gnnnn)
Modifying Agents	(Rnnnnn, Gnnnn)
Chemical Aspects (i.e. chemical fragment codes)	(Dnn, Dnnn, Enn, Fnn, Fnnn)

Non-structural information indexed

Information indexed	Code Format
Novelty descriptors	(NDnn)
Universal Terms	(Knnnn)
Polymer Descriptors (e.g. binary copolymer, thermoplastic)	(Hnnnn)
Shape & Form (e.g. Fibre, Foam, Powder)	(Snnnn)
Additive Type (e.g. Filler, Pigment, Plasticiser)	(Annn)
Catalyst (e.g. free radical initiator or esterification)	(Cnnn)

Non-structural information indexed

Information indexed	Code format
Chemical processes	(Lnnnn)
Physical processes	(Nnnnn)
Equipment	(Jnnnn)
Properties (e.g. molecular weight, viscosity)	(Bnnnn)
Polymer applications (e.g. clothing, medicines)	(Qnnnn)

Structure and linking of the codes

Codes for compounds

- Generic structure type codes classify according to the type of structure
  - Code format Gnnnn
  - For example: G0544 – Vinyl halides
- Common fully defined compounds have their own codes - SCNs
  - Code format: Rnnnnn
  - For example: R24001 - sodium acrylate
- All polymer formers are indexed either by SCNs or generic codes (Gnnnn)
- Also applied to additives, catalysts, and modifying agents, if specified

Hierarchical structure of the codes

Polymer Formers

G0022 Monoolefinic

.....

G0260 NT Acrylics monoolefinic

G0271 NT Acrylic acids monoolefinic

'Including Salts thereof'

G0282 NT Acrylic acid + salts

'Monoolefinic only'

R00446 NT Acrylic acid

R24001 NT Sodium acrylate

R24000 NT Potassium acrylate

G0293 NT Acrylic acid salt, other

Auto-posting

- In addition to the codes chosen by the indexer, the online record contains related codes that are automatically indexed
- Two types of auto-posting:
  - Up-posting
    - all broader codes further up the hierarchy from the indexed code are automatically indexed
  - Cross-posting
    - related codes from *other hierarchies* are additionally indexed
- Benefit - easy generic searching

Up-posting example

Additives

A566 Surfactant

.....

A624 NT Dispersant

(+ A566 auto-posted)

A635 NT Emulsifier

(+ A566, A624 auto-posted)

A646 NT Protective colloid

(+ A566, A624 auto-posted)

Cross-posting example

R24001 Sodium Acrylate CH2=CHCOONa

All relevant chemical aspect codes are auto-posted:

D01	Organic
D26	Acrylic unsaturated chain (96)
D12	Unsaturated chain
D10	Aliphatic chain
D53	Monoolefinic unsaturation
D51	Unsaturation containing
D58	Terminal olefinic unsaturation
D61	Salt/Complex
D83	Carbon Count of 3
F36	Monocarboxylic acid (salt)
F35	Carboxylic acid (salt)
Na	Sodium
1A	Group 1A

Linking of codes

- Related codes are indexed together in distinct online sub-fields
- Three different types of sub-field are used, each level of sub-field is searchable with an online proximity operator
  - three 'levels of linking', referred to as level 1, level 2 and level 3
- Related codes can be searched together in the way that they were indexed, maximising accuracy and minimising noise

Linking of codes

- Each separate polymer concept is linked to its associated terms (additives, catalysts, properties, applications etc.) to form a LINKING GROUP
- There may be several linking groups in the online record
- Each linking group is separated from the other linking groups

Linking of codes

- **Example 1** - A patent describing a new bottle made from polyethylene terephthalate and having a cap made from polyolefin e.g. polypropylene or ethylene copolymer.

  This patent has two polymer concepts (bottle and cap) and so would be indexed as two linking groups.

- **Example 2** - A patent for a new tri-layer film, the outermost layer is heat resistant polyamide, the middle layer is aluminium and the inner layer is impermeable PVC.

  Again this patent has two polymer concepts (outer layer and inner layer), so two linking groups would be made.

Linking of codes

- All codes within a linking group are linked together at LEVEL 3
- LEVEL 1 and LEVEL 2 linking are used to indicate *closely related* codes within the linking group
  - e.g. 'graft copolymer' linked to 'acrylonitrile' and 'butadiene'
- To search for codes from different linking groups the AND operator must be used

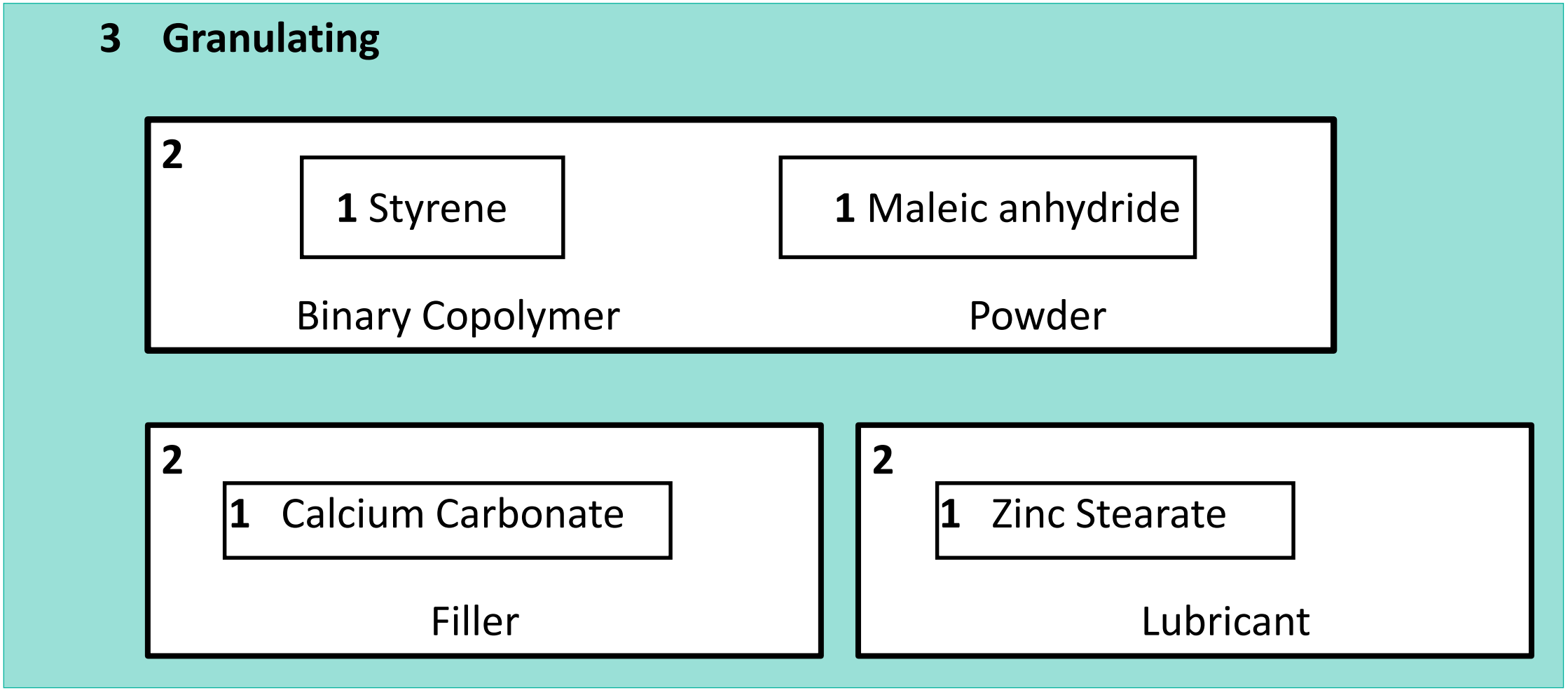
Three levels of linking

- **Level 3** - Widest level - Linking group
  - links related substances (e.g. polymer with additive(s))
  - links polymer with properties and applications
- **Level 2** - Middle level - Indexing 'paragraph' for each substance
  - links a compound with its function or shape & form
  - links co-monomers in a copolymer
- **Level 1** - Tightest level - Indexing 'sentence' linking Chemical Aspect codes

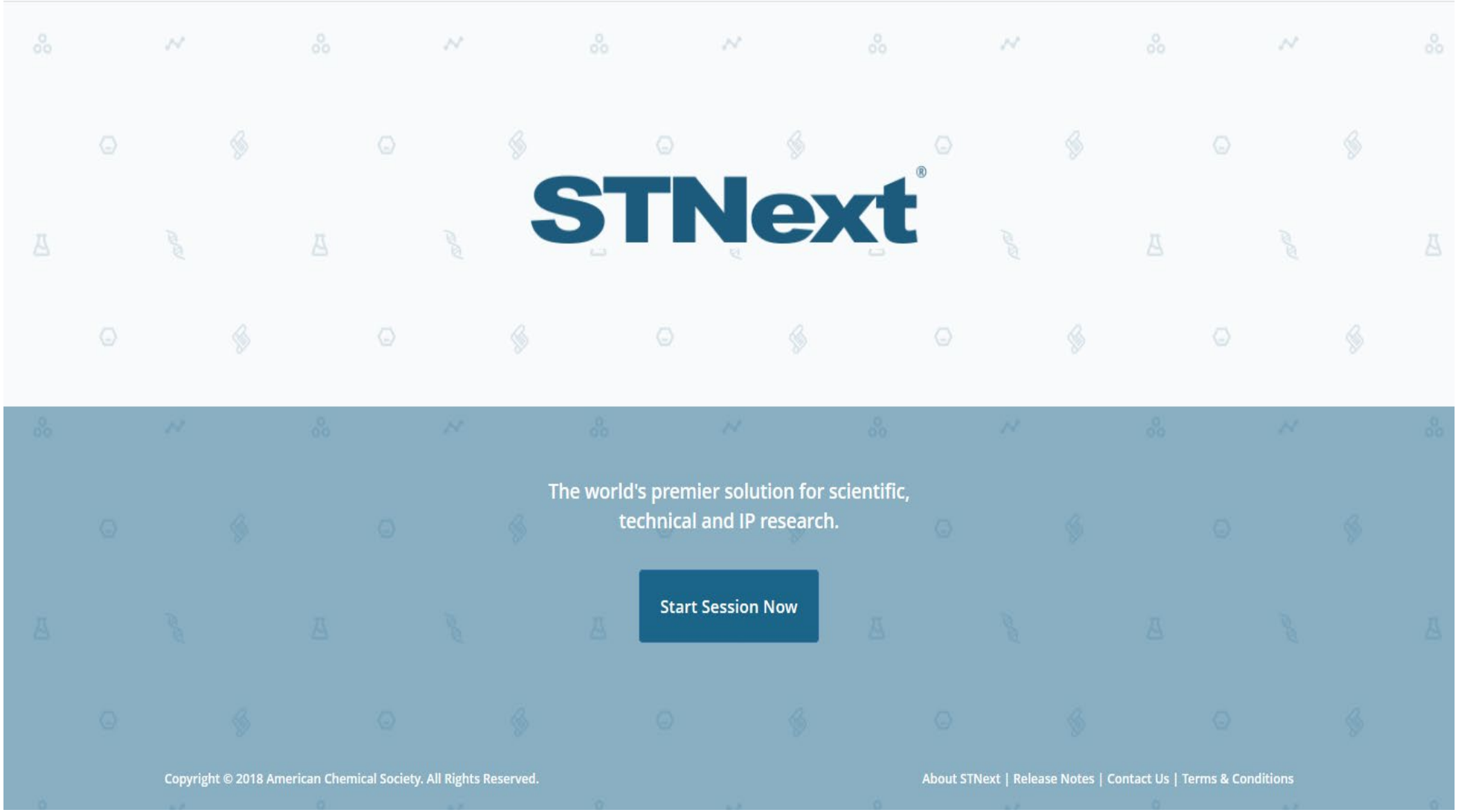
Linking group example

- Polymer composition
  - styrene-maleic anhydride binary copolymer
  - calcium carbonate filler
  - zinc stearate lubricant
  - granulation into a powder
- Linking diagram
  - to help visualise the linking levels
- Format for the online record
  - what the indexing looks like online

Linking diagram



STNext - https://www.stn.org/



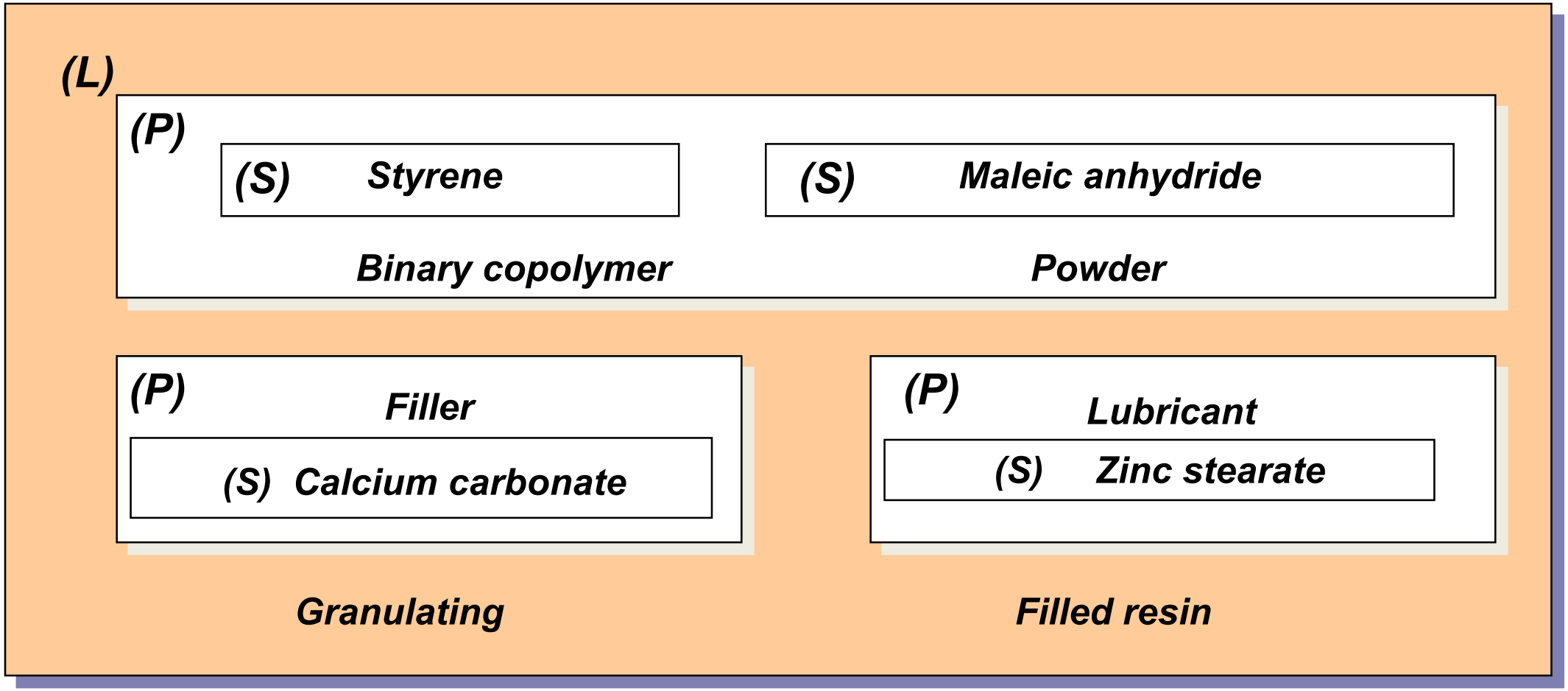
Searching polymer codes on new STN

- Use /PLE search qualifier in DWPI on STNext
  - Even when searching DCR numbers in polymer indexing

Three linking operators on STNext

Linking level		STNext Proximity operator
(3)	(widest)	(L)
(2)	(middle)	(P)
(1)	(tightest)	(S)

STN Linking Operators



Linking operator example on STNext

- Styrene (Level 2) Maleic Anhydride (Level 2) Binary Copolymer (Level 2) Powder
- Calcium Carbonate (Level 2) Filler
- Zinc Stearate (Level 2) Lubricant
- Granulating (Level 3) Filled Resin (Level 3) above sets

Linking operator example on STNext (cont.)

- Styrene (P) Maleic Anhydride (P) Binary Copolymer (P) Powder
- Calcium Carbonate (P) Filler
- Zinc Stearate (P) Lubricant
- Granulating (L) Filled Resin (L) above sets

Linking operator example on STNext (cont.)

Styrene	R00708
Maleic Anhydride	R00843
Binary Copolymer	H0022
Powder	S1514
Calcium Carbonate	R01278
Filler	A237
Zinc Stearate	R01377
Lubricant	A340
Granulating	N6144
Filled Resin	K9449

The **Derwent Polymer Indexing Hierarchy** was used to find the appropriate codes.

Linking operator example on STNext (cont.)

S (R00708 (P) R00843 (P) H0022 (P) S1514)/PLE

S (R01278 (P) A237)/PLE

S (R01377 (P) A340)/PLE

S (N6144 (L) K9449)/PLE

S L1 (L) L2 (L) L3 (L) L4

Note: Search the Derwent polymer codes in DWPI on STNext by using the /PLE search qualifier.

Derwent Polymer Search Example

STNext®

My Files | Jim Brown

Transcript ON | September 2019 e-Seminar search

History | CAS Lexicon | Databases

File **WPIX**

```
=> S (R00708 (P) R00843 (P) H0022 (P) S1514)/PLE

        296189 R00708/PLE
         49418 R00843/PLE
        488889 H0022/PLE
        157350 S1514/PLE
L1          82 (R00708 (P) R00843 (P) H0022 (P) S1514)/PLE

=> S (R01278 (P) A237)/PLE

         59757 R01278/PLE
        289892 A237/PLE
L2       51593 (R01278 (P) A237)/PLE

=> S (R01377 (P) A340)/PLE

         13506 R01377/PLE
        118032 A340/PLE
L3        8381 (R01377 (P) A340)/PLE

=> S (N6144 (L) K9449)/PLE

         41254 N6144/PLE
        239297 K9449/PLE
L4       11476 (N6144 (L) K9449)/PLE

=> S L1 (L) L2 (L) L3 (L) L4

L5           0 L1 (L) L2 (L) L3 (L) L4
```

Session

Entered **HOME** 21:52:32 ON 06 SEP 2019

Entered **WPIX** 21:52:42 ON 06 SEP 2019

L1 82 S (R00708 (P) R00843 (P) H0022 (P) S1514)/PLE

L2 51593 S (R01278 (P) A237)/PLE

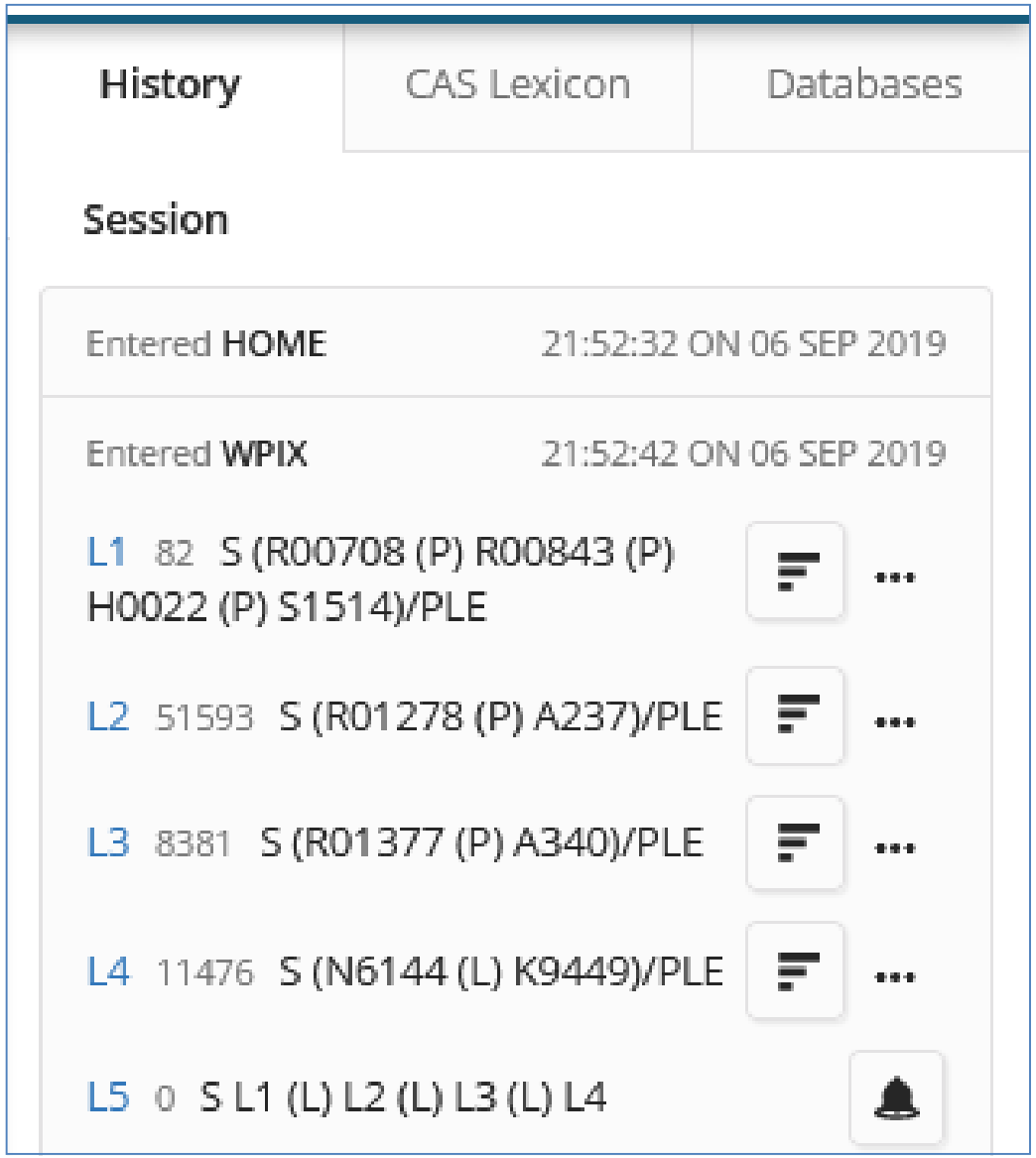
L3 8381 S (R01377 (P) A340)/PLE

L4 11476 S (N6144 (L) K9449)/PLE

L5 0 S L1 (L) L2 (L) L3 (L) L4

=> enter command | Submit | Draw | Scripts

Derwent Polymer Search Example



Why did this search retrieve zero hits?

- The strategy was too specific
- Revise strategy to broaden as needed
  - Search polymer without powder concept?
  - Any filler?
  - Any lubricant?
  - Remove filler and lubricant concepts altogether?

DWPI Polymer Query revisions

- Compared to first strategy, the following concepts were removed –
  - Powder from Styrene-Maleic anhydride copolymer set
  - Calcium carbonate from filler set
  - Zinc stearate from lubricant set

Revised Derwent Polymer Search Example

Derwent Polymer Display

File **WPIX**

```
=> D BIB PLE 1-3



L10  ANSWER 1 OF 33  WPIX COPYRIGHT 2019   CLARIVATE ANALYTICS on STN
AN   2019-58429Y [201961]   WPIX Full-text
TI   Antibacterial deodorant plastic product comprises ultrahigh molecular
     weight polyethylene, linear low density polyethylene, styrene-maleic
     anhydride copolymer, ethylene-methyl acrylate-glycidyl methacrylate
     terpolymer, boron nitride
DC   A18; A21; A23; A94; D22
IN   LIU X
PA   (TIAN-N) TIANJIN HAINAYUAN TECHNOLOGY CO LTD
CYC  1
PIA  CN 109942939      A  20190628 (201961)* ZH  9[0]
ADT  CN 109942939  A CN 2019-10220299 20190322
PRAI CN 2019-10220299      20190322
```

Derwent Polymer Display

PLE UPA 20190816

[1.1] 2004 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 DCN: **R00708** DCR: 368; G0760 G0022 D01 D23 D22 D31 D42 D51 D53 D59 D65 D75 D84 F39 E00 E01 DCN: **R00843** DCR: 790; **H0022** H0011; P1741;

[1.2] 2004 G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 DCN: R00326 DCR: 1013; H0000; P1218 P1161; P1150;

[1.3] 2004 G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 DCN: R00326 DCR: 1013; H0011-R; P1252; P1150;

[1.4] 2004 **K9449**; N9999 N6439; N9999 N5970-R; N9999 **N6144**; N9999 N6484-R N6440; ND07; K9745-R; ND04; B9999 B4579 B4568; B9999 B4499 B4466; B9999 B4488 B4466; B9999 B4477 B4466; K9905;

[1.5] 2004 A999 A793;

[1.6] 2004 D01 F47; A999 A384;

[1.7] 2004 G2255 G2222 D01 D23 D22 D42 D73 F47; D01 D11 D10 D14 D13 D31 D50 D61 D75 F36 F35 Zn 2B Tr DCN: R10802 DCR: 133901; A999 A486-R;

[1.8] 2004 D00 F20 Zn 2B Tr O- 6A DCN: R01520 DCR: 866; A999 A793;

[1.9] 2004 G3441 D00 F80 Al 3A Si 4A O- 6A Ag 1B Tr; A999 A044-R;

[1.10] 2004 D01 D11 D10 D50 D61 D29 D95 F36 F35 Zn 2B Tr DCN: R01377 DCR: 110857; A999 **A340-R**;

[1.11] 2004 D00 B- 3A N- 5A DCN: R01893 DCR: 129417; D00 F44 C- 4A O- 6A Ca 2A DCN: R01278 DCR: 89827; D01 Na 1A Mg 2A Al 3A Ca Si 4A O- 6A H- F21 F80; A999 **A237**; A999 A771;

[2.1] 2004 G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 DCN:

(P)

(L)

(S)

Derwent Polymer Display

File **WPIX**

[2.1] 2004 G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 DCN: R00326 DCR: 1013; G0340 G0339 G0260 G0022 D01 D11 D10 D12 D26 D51 D53 D58 D63 D84 F41 F89 DCN: R00642 DCR: 404; G0384 G0339 G0260 G0022 D01 D11 D10 D12 D23 D22 D26 D31 D42 D51 D53 D58 D63 D73 D87 F47 F41 F89 DCN: R00800 DCR: 49004; H0033 H0011; P0464-R D01 D22 D42 F47; P1150; P0088;

[2.2] 2004 G0033-R G0022 D01 D02 D51 D53; G0340 G0339 G0260 G0022 D01 D11 D10 D12 D26 D51 D53 D58 D63 D84 F41 F89 DCN: R00642 DCR: 404 ; G0384 G0339 G0260 G0022 D01 D11 D10 D12 D23 D22 D26 D31 D42 D51 D53 D58 D63 D73 D87 F47 F41 F89 DCN: R00800 DCR: 49004; H0033 H0011; P0464-R D01 D22 D42 F47; P1150; P0088;

[2.3] 2004 K9449; N9999 N6439; N9999 N5970-R; N9999 N6144; N9999 N6484-R N6440; ND07; K9745-R; ND04; B9999 B4579 B4568; B9999 B4499 B4466; B9999 B4488 B4466; B9999 B4477 B4466; K9905;

[2.4] 2004 D01 D19 D18 D32 D50 D63 D76 D93 F42 DCN: R00610 DCR: 79; C999 C088-R C000; C999 C293;

[2.5] 2004 A999 A793;

[2.6] 2004 D01 F47; A999 A384;

[2.7] 2004 G2255 G2222 D01 D23 D22 D42 D73 F47; D01 D11 D10 D14 D13 D31 D50 D61 D75 F36 F35 Zn 2B Tr DCN: R10802 DCR: 133901; A999 A486-R;

[2.8] 2004 D00 F20 Zn 2B Tr O- 6A DCN: R01520 DCR: 866; A999 A793;

[2.9] 2004 G3441 D00 F80 Al 3A Si 4A O- 6A Ag 1B Tr; A999 A044-R;

[2.10] 2004 D01 D11 D10 D50 D61 D29 D95 F36 F35 Zn 2B Tr DCN: R01377 DCR: 110857; A999 A340-R;

[2.11] 2004 D00 B- 3A N- 5A DCN: R01893 DCR: 129417; D00 F44 C- 4A O- 6A Ca 2A DCN: R01278 DCR: 89827; D01 Na 1A Mg 2A Al 3A Ca Si 4A O- 6A H- F21 F80; A999 A237; A999 A771;

[3.1] 2004 G2131 D01 D23 D22 D31 D42 D50 D77 D86 F43 DCN: R01295 DCR:

Levels of linking

[1.3] 2004 ; R01278 D00 F44 C- 4A O- 6A Ca 2A ; A999 A237

- **Sub-fields are marked e.g. [1.1], [1.2], [1.3], [2.1], [2.2], [3.1] etc.**
  - **Level 3** (STN (L)) - the number to the **left** of the full-stop (period) indicates the linking group number
    - e.g. [1.1], [1.2] and [1.3] belong to linking group 1;
      [2.1] and [2.2] belong to linking group 2
  - **Level 2** (STN (P)) - the number to the **right** of the full-stop (period) indicates the paragraph number within the linking group
    - e.g. [1.3] is paragraph 3 in linking group 1
  - **Level 1** (STN (S)) - within the paragraph, sentences of indexing start and stop with the semi-colon character **;**
    - e.g. **;** R01278 D00 F44 C- 4A O- 6A Ca 2A **;**

Linking level table

Example : Linking a Polymer type code to an additive type code

FACET	**Polymer Type** Pnnnn	**Polymer** Rnnnnn	**Former** Gnnnn	**Additive** Annn	**Catalyst** Cnnn	**Modifying Agent**
Polymer Descriptor						
Hnnnn	2	2	2	3†	3†	3†
H0146	2	1	1	N/A	N/A	N/A
H0215	2	1	1	N/A	N/A	N/A
H0204	2	N/A	1	N/A	N/A	N/A
Polymer Former						
Rnnnnn/Gnnnn	2	2	2	3†	3†	3†
Polymer Type						
Pnnnn	AND#	2	2	3†	3†	3†
Natural Polymer						
Rnnnnn/Gnnnn	2	2	2	3†	3†	3†

Linking level table

Example : Linking a Polymer type code to an additive type code

FACET	**Polymer Type** Pnnnn	**Polymer** Rnnnnn	**Former** Gnnnn	**Additive** Annn	**Catalyst** Cnnn	**Modifying Agent**
Polymer Descriptor						
Hnnnn	2	2	2	3†	3†	3†
H0146	2	1	1	N/A	N/A	N/A
H0215	2	1	1	N/A	N/A	N/A
H0204	2	N/A	1	N/A	N/A	N/A
Polymer Former Rnnnnn/Gnnnn	2	2	2	3†	3†	3†
Polymer Type Pnnnn	AND#	2	2	3†	3†	3†
Natural Polymer Rnnnnn/Gnnnn	2	2	2	3†	3†	3†

Key examples and search strategy

Addition Polymers

- All addition Polymers have monomer based indexing
  - Polymethylmethacrylate:
    (R00479 (2) H0000) i.e. methylmethacrylate + homopolymer
  - Ethylene–propylene copolymer:
    (R00326 (2) R00964 (2) H0022) i.e. ethylene + propylene + binary copolymer
- For ease of searching, common polymers are also searchable as a single code, e.g.
  - Polymethylmethacrylate: P0113
  - Ethylene-propylene copolymer: P1285

Derwent Addition Polymer Search Example

Entered **HOME** 20:39:37 ON 09 SEP 2019

Entered **WPIX** 20:39:47 ON 09 SEP 2019

L1 58746 S (R00479 (P) H0000)/PLE

L2 58746 S P0113/PLE

Search Addition Polymers by Polymer Former(s) and Polymer Descriptor term(s)

R00479 = Methylmethacrylate

H0000 = Homopolymer

Search Addition Polymers by Polymer Types term(s):

P0113 = Polymethylmethacrylate

Note: For addition polymer searching, searching the Polymer Former terms with Polymer Descriptor terms will capture the same records as searching with the Polymer Type terms, and vice versa.

Derwent Addition Polymer Search Example

L3 28260 S (R00326 (P) R00964 (P) H0022)/PLE

L4 28260 S P1285/PLE

Search Addition Polymers by Polymer Former(s) and Polymer Descriptor term(s)

R00326 = Ethylene

R00964 = Propylene

H0022 = Binary Coplymer

Search Addition Polymers by Polymer Types term(s):

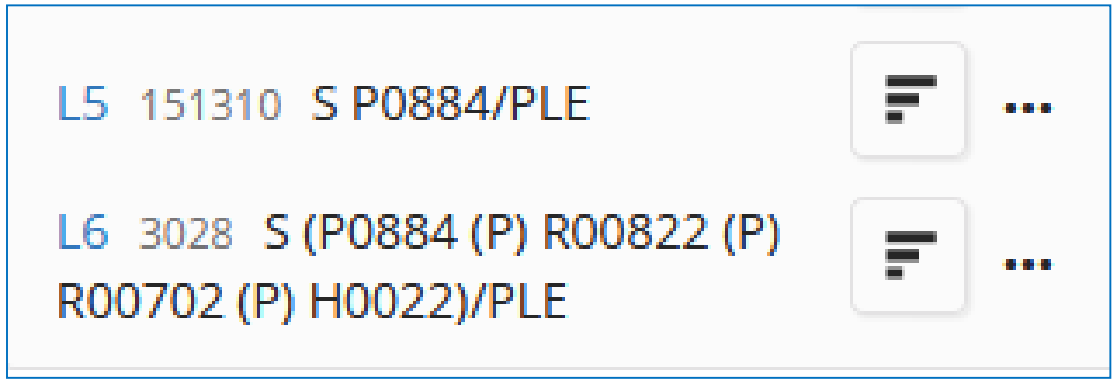
P1285 = Ethylene-Propylene copolymer

Note: For addition polymer searching, searching the Polymer Former terms with Polymer Descriptor terms will capture the same records as searching with the Polymer Type terms, and vice versa.

Condensation Polymers

- The condensation polymer is indexed using the most appropriate polymer type code (Format Pnnnn)
- The most common ones have their own specific codes (e.g., P0884 for Polyethylene terephthalate)
- For less common ones use the most appropriate generic code (e.g., P1978 Polyester)
- Monomers/condensants are only indexed when explicitly stated in the patent, e.g.
  - Polyethylene terephthalate from ethylene glycol and terephthalic acid is indexed as: (P0884 (2) R00822 (2) R00702 (2) H0022)
    i.e. PET + ethylene glycol + terephthalic acid + binary copolymer
  - PET with no further information is indexed P0884 only
  - for all references to PET, just search P0884

Derwent Condensation Polymer Search Example



Search Condensation Polymers by Polymer Types term(s):

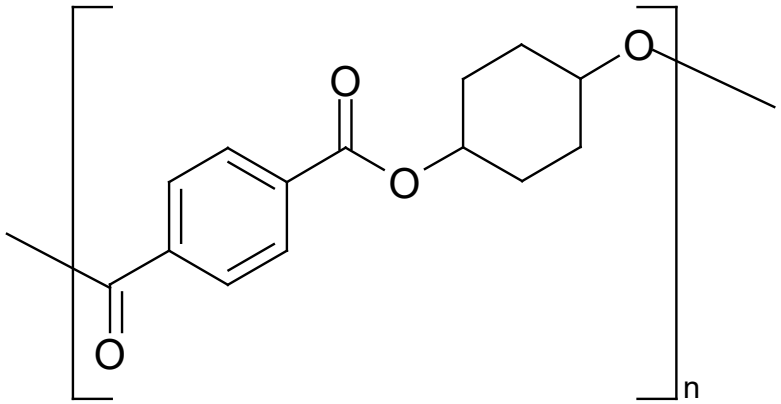
P0884 = Polyethylene Terephthalate

Search Condensation Polymers by Polymer Type term(s), Polymer Former(s) and Polymer Descriptor term(s) ONLY when you want to limit your search to those records where the polymer formers are explicitly stated in the original document

P0884 = Polyethylene Terephthalate
R00822 = Ethylene Glycol
R00702 = Terephthalic Acid
H0022 = Binary Copolymer

Condensation Polymers

- When no polymer formers are mentioned we apply the appropriate chemical aspect codes to describe the structural repeat unit linked at level 1 to the Polymer type code



- Indexed as (P1978 (1) D01 (1) D14 (1) D19 (1) D32 (1) D76 (1) D50 (1) D93 (1) E21 (1) F90)
- i.e. polyester polymer type code + chemical aspects for the repeat unit

Derwent Condensation Polymer SRU Search Example

```
=> S (P1978 (S) (D01 (S) D14 (S) D19 (S) D32 (S) D76 (S) D50 (S) D93 (S) E21 (S) F90))/PLE

        229272 P1978/PLE
       2648762 D01/PLE
        108732 D14/PLE
        855574 D19/PLE
        351361 D32/PLE
       1188550 D76/PLE
       1430290 D50/PLE
        441786 D93/PLE
        194241 "E21"/PLE
        254363 F90/PLE
L8        1370 (P1978 (S) (D01 (S) D14 (S) D19 (S) D32 (S) D76 (S) D50 (S) D93
               (S) "E21" (S) F90))/PLE
```

Note: When searching the Derwent aspect codes, put any code that starts with an E in quotes so that STN doesn't read this incorrectly as an EXPAND listing.

Search Condensation Polymers by SRU using Polymer Type term(s), and chemical aspect codes

P1978 = Polyesters
D01 = Organic
D14 = Monocyclic Alicyclic
D19 = Benzene
D32 = Rings, 2
D76 = Member Ring, 6-
D50 = No Unsaturation
D93 = Carbon Count 13 C-18 C
E21 = Terephthali-
F90 = Dicarboxylic Ester

Condensation Polymers

- If polymer formers are stated, these are indexed rather than the structural repeat unit
- e.g. if the polymer from the previous slide is prepared from terephthalic acid and 1,4-cyclohexane diol, the indexing is:

  - (P1978 (2) R00702 (2) (G1069 (1) D01 (1) D14 (1) D31 (1) D76 (1) D50 (1) D86 (1) F28) (2) H0022)
  - i.e. polyester polymer type + terephthalic acid + (other diol + chemical aspect codes for cyclohexane diol) + binary copolymer

- As a consequence of this you should always search both ways (in terms of polymer former and structural repeat unit) to get all relevant hits

Derwent Polymer Search Example

```
=> S (P1978 (P) R00702 (P) ((G1069 (S) D01 (S) D14 (S) D31 (S) D76 (S) D50 (S) D86 (S) F28)) (P) H0022)/PLE

         229272 P1978/PLE
          20206 R00702/PLE
          16150 G1069/PLE
        2648762 D01/PLE
         108732 D14/PLE
        1382798 D31/PLE
        1188550 D76/PLE
        1430290 D50/PLE
         728961 D86/PLE
         222892 F28/PLE
         488889 H0022/PLE
L8           18 (P1978 (P) R00702 (P) ((G1069 (S) D01 (S) D14 (S) D31 (S) D76
                (S) D50 (S) D86 (S) F28)) (P) H0022)/PLE

=> S L7 OR L8

L9         1422 L7 OR L8
```

Searching for additives

- There are two way additives can be described in a patent
  - In terms of their function (eg A511 Heat Stabiliser or A237 Filler)
  - In terms of their chemical structure which can be searched by
    - One or more Chemical aspect codes for specific features (eg F62 for sulfonate group)
    - Generic compound codes (eg G2028 for Sulfonic acids or their salts)
    - Specific compound codes (eg R00424 for triethylphosphate)
- To find patents where an additive is a particular (type of) compound search the appropriate structural code linked at level 2 to the additive type code
- Example: Find patents in which triethyl phosphate (R00424) is used as a heat stabiliser (A511)

R00424 (2) A511 =>

L10 79 S (R00424 (P) A511)/PLE

Searching for catalysts

- Catalysts can be searched in one or more of the following ways
  - By function using a catalyst code (eg C293 catalyst for polymerisation though a C=C bond)
  - By type using a catalyst code (eg C088 Free Radical initiator)
  - In terms of their chemical structure which can be searched by
    - One or more Chemical aspect codes for specific features (eg F13 for azo group)
    - Generic compound codes (eg G2028 for Sulfonic acids or their salts)
    - Specific compound codes (eg R01737 for Potassium persulfate)
- To find patents where a catalyst is a particular (type of) compound search the appropriate structural code linked at level 2 to the catalyst function or catalyst type code
  - Example: Find patents in which potassium persulfate is used as a free radical initiator

R01737 (2) C088 => L11 11907 S (R01737 (P) C088)/PLE

Summary

- Derwent Enhanced Polymer Indexing
  - Introduced mid-1993
  - Replaced PLASDOC indexing system in 1994
  - Structural and non-structural facet codes
  - Auto-posting of terms
    - Up-posting of generic codes
    - Cross-posting of chemical aspect codes
  - Precision linking of related terms
    - Derwent Level 1 = STN (S) Operator
    - Derwent Level 2 = STN (P) Operator
    - Derwent Level 3 = STN (L) Operator
    - Don’t forget the STN AND proximity operator – use when you wish to find different polymer concepts in the same patent family record

References

- DWPI on STN User Documentation

  http://www.stn-international.com/stn_dwpi.html

  – DWPI on STN Reference Manual
  – DWPI on STN Workshop Manual
  – DWPI Classification (DC) guide
  – Summary table of member level data coverage
  – Global Patent Sources – DWPI coverage in detail
  – Chemistry, Engineering and Polymer User Guides

- DWPI on STN database summary sheet

  http://www.stn-international.com/wpindex.html

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