



Utilising patent citations
for patent analysis &
competitive
intelligence

Patent citations – what are they and why are they important?

Patent citations are a powerful tool for multiple commercial use cases, ranging from finding additional prior art, licensing and commercialisation opportunity analysis, infringement analysis as well as general competitive intelligence. Furthermore, citation information can be an integral part of the package of information when deciding which areas of your IP portfolio to maintain or abandon. Highly cited patents represent valuable IP which should be maintained in as many jurisdictions as financially viable and which provide a market for the invention being protected.

Backward citations are previously published patents and non-patent literature which disclose subject matter of relevance to the invention claimed within the patent. In contrast, forward citations are subsequently published patents or patent applications which cite the patent of interest as relevant subject matter (prior art).

Unfortunately, many databases use a very limited global footprint of citations, sticking only to the major jurisdictions. This makes it difficult to get a complete picture or even sort results of publications or families by most cited. For full analysis, using a truly global database, like PatBase, is critical where all members of a patent family can be viewed for each members' individual citations, and in aggregate.

The ability to not only review citations for one publication or a single family but for an entire result set, portfolio or technology sector makes a huge difference, especially when finding prior art or when performing a landscape analysis to understand technology shifts and threats from both entrenched and new market players.

Finding additional prior art

Keyword and classification searches are beneficial in many use cases, however, including citations in your search strategy is a helpful addition when looking for prior art for patentability and validity work, here's how:

Option 1: The searcher can add citation searching to a keyword or classification-based search technique when desired or expected results are not being found. This could be due to obfuscation of keywords, terminology, language or classification issues such as poorly classified areas of technology, especially newer technologies or multiple areas of applicability.

Option 2: Perhaps a good reference has been found, but not a great reference. The searcher can look at family level citations (for all family members' forward and back) to take all examiners' (from all patent offices) efforts into account. In some cases, due to prosecution timing, even examiners may not have been able to consider their global counterparts' efforts and so a global and family level citation database will help yield additional results.

Option 3: Using multiple generations of citations can sometimes find hidden citations due to timing and pendency/publication issues. Co-pending citations are one of the most overlooked areas by searchers. This technique is very useful in validity work, for example. The backwards of the forwards are helpful in finding what could have been co-pending especially if using an interactive citation dashboard, again at the global family level where all family members citations can be instantly aggregated and smart filters applied.



Search History

Save Search History Clear Search History Export Search History

#	Search query	Results	Options
12	CTA 11	818	View Browse Hits Optimise Export More...
11	AFT=(water_resistant OR water_proof) AND (sun w1 lotion OR sun w1 cream)	37	View Browse Hits Optimise Export More...
10	8 AND 9	2,520	View Browse Hits Optimise Export More...
9	AFT=((long_acting) OR (long W5 duration) OR (sustain*) OR (permanent) OR (irreversible) OR (water_proof) OR (sweat_proof) OR (water_resistant) OR (resistant))	8,333,621	View Browse Hits Optimise Export More...
8	3 AND 7	5,381	View Browse Hits Optimise Export More...
7	4 OR 5 OR 6	33,316	View Browse Hits Optimise Export More...
6	UC=(424/59 OR 424/60)	5,316	View Browse Hits Optimise Export More...
5	IC=(A61Q17/00 OR A61Q17/02 OR A61Q17/04 OR A61Q17/05 OR A61Q17/06 OR A61Q17/07 OR A61Q17/08)	28,896	View Browse Hits Optimise Export More...
4	CPC=(A61Q17/0 OR A61Q17/00 OR A61Q17/005 OR A61Q17/02 OR A61Q17/04)	22,611	View Browse Hits Optimise Export More...
3	1 AND 2	7,607	View Browse Hits Optimise Export More...
2	AFT=((sun OR UV OR ultra_violet) WP (protect* OR screen* OR shield* OR barrier* OR defen!e OR guard*) AND (cream OR lotion))	62,078	View Browse Hits Optimise Export More...
1	ATAC=((sun_screen*) OR (sun_block) OR (sun_tan W1 (lotion OR cream)) OR (sun_burn W1 (lotion OR cream)) OR (sun W1 (cream or lotion)))	29,670	View Browse Hits Optimise Export More...

Searching citations

The searcher can begin utilising citations while compiling a comprehensive search strategy. As explained in option 1 on the previous slide, if the searcher finds their keyword or classification searches are coming back with limited results, this could be due to language and/or classification issues or because obscure keywords are being used.

Combining the keyword and classification-based search with a citation search will expand your results with similar documents that might have been missed otherwise.

Command	Function	Example
CTA	All citations	CTA=(PA=Loreal)
CTF	Forward citations	CTFX=(TAC=(sun_screen))
CTB	Backward citations	CTB 3 (3 is search query #)
CTFFN / CTBFN / CTA FN	For a specific family number	CTFFN=(34607385)
CTFPN / CTBPN / CTAPN	For a specific publication number	CTBPN=(US4500001)



Starting with the bigger picture

The searcher can start by running a search on their own patent portfolio, then combine this with a forward citation search and remove any self citations for a clear picture (see [A](#)).

Beginning with an overview analysis can help to extract useful insights...

Checking out the common keywords and concepts or classification fields can give an insight into which areas your competitors are investing and developing in. Or you can even check out the key inventors working in your technology area if you're looking to headhunt someone new.

Discover if innovators are using the same technology for different uses, for instance, if the company's portfolio is all filed under a certain classification but a new classification is showing up, does this mean that it has changed uses, e.g. medicinal to being used with foods?

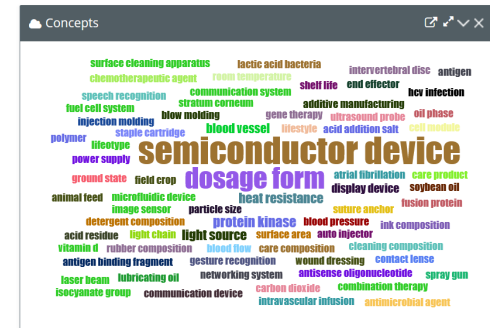
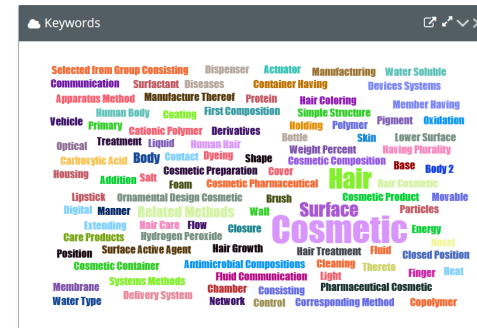
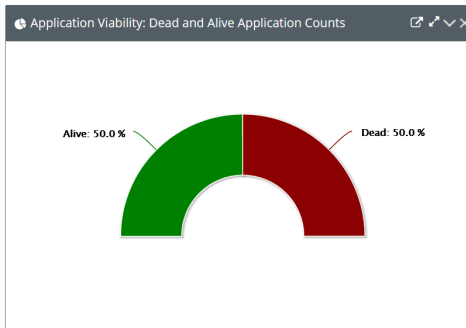
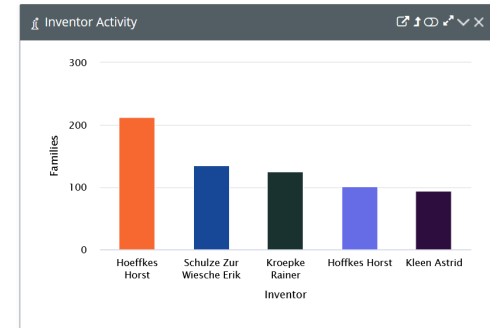
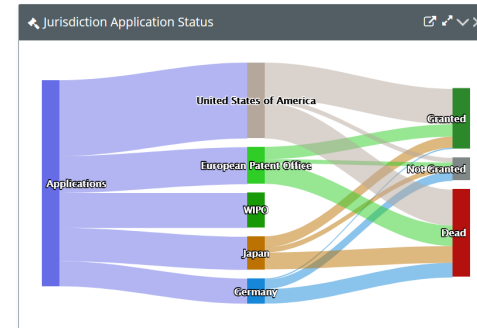
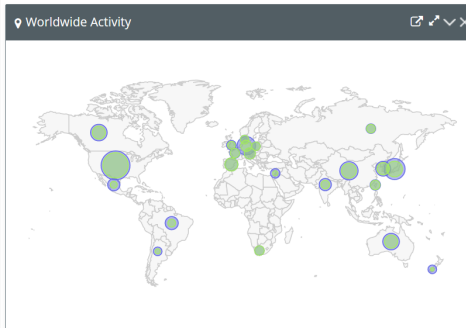
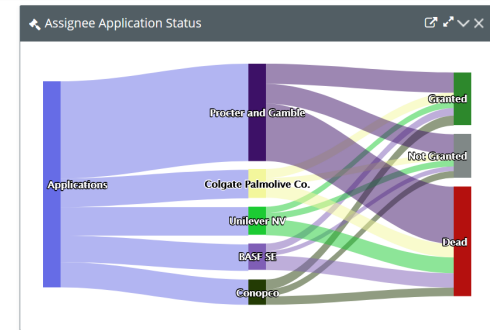
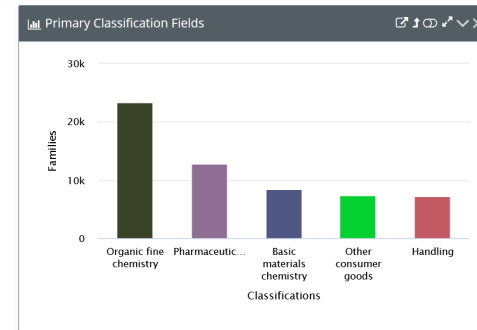
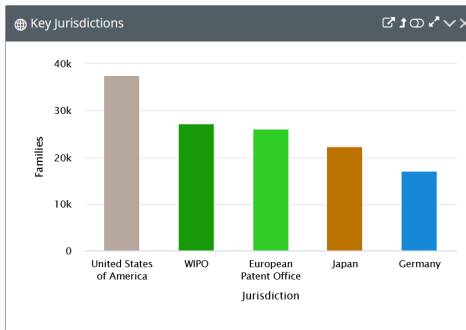
Search History

Save Search History Clear Search History Export Search History




#	Search query	Results	Options
3	2 NOT 1	52,235	View Browse Hits Optimise Export More...
2	CTF 1	61,893	View Browse Hits Optimise Export More...
1	PA=(l oreale) OR (loreal)	13,116	View Browse Hits Optimise Export More...

A

PatBase
analytics^{v3}

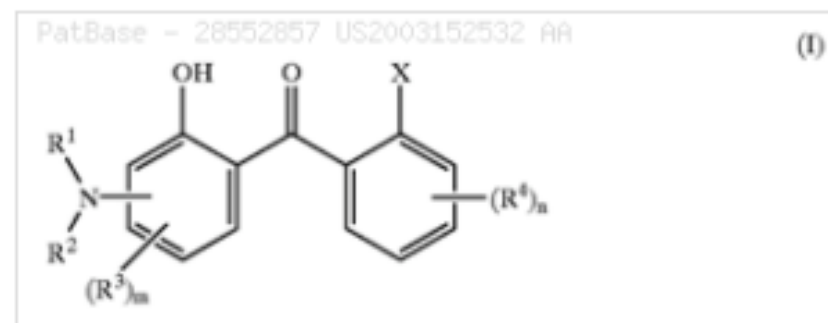


Looking at citations in

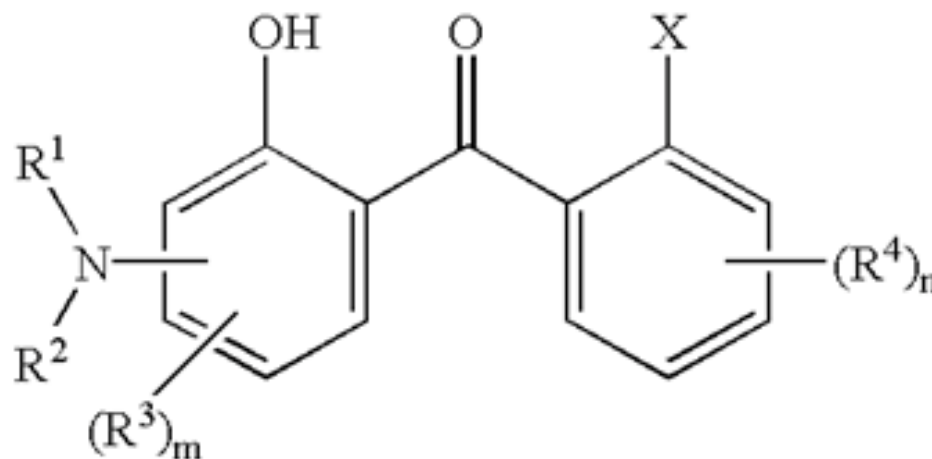
3) Family number: 28552857 (US2003152532 AA) Similar • Translate • Full-text •  Status Citations Insight      

Title: [EN] SYNERGISTICALLY **UV**-PHOTOPROTECTING COMPOSITIONS COMPRISING MIXED **SCREENING** AGENTS

Abstract: Source: US2003152532 AA [EN] Topically applicable cosmetic/dermatological **sunscreen** compositions well suited for the enhanced **UV**-photoprotection of human skin and/or hair contain synergistically **UV**-A PPD - enhancing amounts of (a) particulates of at least one insoluble organic **UV-screening** agent having a particle size ranging from 10 nm to 5 μm , and (b) at least one **UV-screening** amino-substituted 2-hydroxybenzophenone compound



(I)



having the following structural formula (I): 1

formulated into (c) a topically applicable, cosmetically/dermatologically acceptable vehicle, diluent or carrier therefor.

Finding additional prior art

Now the searcher has identified relevant prior art, they can apply option 2 and review the forward and backward citations to find similar documents that might prevent an idea from being patentable. Examiner codes (see **A**) can be used to check the relevance of each citation.

Any citations can be opened in side-by-side view (see **B**) to compare the content and improve the speed and efficiency of the searcher's document review.

Flag relevant documents (see **C**) and take them back into PatBase at the end of your Citation Explorer session.

The screenshot displays the Citation Explorer web application interface. At the top, the header includes the 'Citation Explorer' logo, a family ID '28552857', and a description: 'Synergistically Uv-Photoprotecting Compositions Comprising Mixed Screening Agents'. A navigation bar contains tabs for 'Browser', 'Notes (0) & Flags (0)', 'Statistics', 'Timeline', 'Tree', and 'Matrix'. The 'Citation Browser' section on the left lists various patent entries with checkboxes and document icons. The main content area shows a detailed view of a document titled 'Synergistically Uv-Photoprotecting Compositions Comprising Mixed Screening Agents' by Loreal Sa. This view includes a chemical structure diagram of a UV-protectant, labeled with 'B', and a table of metadata such as Family (28552857), Country (United States of America), Publication (US2003152532 AA), and Application (US20020314195). A sidebar on the right provides 'Actions for Family ID: 33627728', including options to 'Start a new Citation Explorer', 'Make a note for later', and 'Flag for later' (highlighted with a green box and labeled 'C'). Below this, a side-by-side comparison of two documents is shown, with a green box highlighting a specific paragraph and labeled 'A'. The bottom of the interface features a 'Citation Explorer' logo and a list of examiner codes (A, P, E) and document numbers (EP1219287 A2, EP1219287).

Finding co-pending citations

Reviewing citations can help the searcher to find documents that have been hidden due to timing and pendency or publication issues. As discussed in option 3, looking at the backward citations for the forward citations is helpful in finding what could have been co-pending and therefore missed – this is especially useful in validity work.

In Citation Explorer, the searcher can use the Citation Tree to examine forward and backward citations and open new Citation Explorer sessions with one-click to easily investigate multiple generations of citations...

Visual tools such as graphical views, a timeline and a tree view assist with evaluating patent citations so the most cited/citing patents and patterns within these citations are easy to spot. Users have the option to export all information as an Excel file, making managing your citations and sharing your findings simple.

Citation Explorer

Family 61456246
Sprayable Sunscreen Composition With Oil Beads
Loreal SA
A composition in form of an oil-in-water emulsion comprises a) a dispersed hydrophobic phase.....

Show Filters

Browser Notes (0) & Flags (0) Statistics Timeline Tree Matrix

Citation Tree
The *Citation Tree* provides a means to follow and traverse citation paths from patent to patent.

Search Tree

Options

- ☐ Auto open full patent details
- ☐ Coloured Branches
- ☒ Dead/ Alive

Publication Text

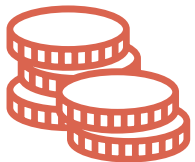
- ☐ Publication No.
- ☐ Kind Code
- ☐ Family
- ☒ Assignee
- ☐ Year
- ☐ Country
- ☐ Citation Categories

The Citation Tree displays a central node 'Loreal Sa' with multiple incoming and outgoing citations. Incoming citations (backward) include Procter And Gamble..., Beiersdorf Ag, Avon Products Inc, Procter And Gamble..., Amcol Int Corp, Loreal Sa, Seaquist Perfect..., Bayer Ag, Bayer Ag, Johnson And Johnson..., Loreal Sa, Loreal Sa, Drexel Univ, Johnson And Johnson..., Johnson And Johnson..., Shiseido Co Ltd, and Galderma Research... Outgoing citations (forward) include Loreal Sa, Loreal Sa, and Loreal Sa. A context menu is open over the 'Loreal Sa' node, showing options: 'Start a new Citation Explorer for this family', 'Start a new Citation Explorer for this publication', 'Open In Browser', 'Flag for later', 'Search tree for occurrences of this publication', 'Search tree for occurrences of this family', 'Filter', 'Search for this publication in PatBase', 'Search this citation group in PatBase', and 'Search entire citation tree in PatBase'.

Licensing opportunity & renewal analysis

When looking for potential licensees, it's beneficial to consider the full value chain and find companies involved with existing products similar to yours. A helpful way to identify companies working in your technology area, is to review which companies are citing your patents. If you manage to sell or licence to a vertically integrated player, they will be able to capture more of the profits, so they might be more interested to buy from you.

It's important to value your IP before starting to look for licensing opportunities. The value of your IP should also be taken into consideration when doing a renewals analysis. For this, the searcher needs to find which patents in the company's portfolio are more valuable and therefore worth paying renewal fees on and continuing to protect.



Valuing your IP

Citation information is an integral part of the package of information when deciding which of your IP portfolio to maintain or abandon. For example, highly cited patents represent valuable IP which should be maintained in as many jurisdictions as financially viable and which provide a market for the invention being protected. In contrast, patents with few or no citations may be of lesser value and could be cut back to only cover key markets (e.g. EP, US, CN, JP, KR) or abandoned all together.

In PatBase, the searcher can begin by reviewing their own patent portfolio and sorting by “Most cited”. For further investigation, the highly cited families can be opened in Citation Explorer. This could be the first step for renewals analysis or to see which areas of the company’s portfolio will be most financially advantageous for licensing opportunities.

Search 15: "PA=loreal " 1-10 of 13,325 next>>

Display format: Classic Sorted by: Most cited

1) Family number: 28335656 (US6283956 BA)

Title: [EN] REDUCTION, ELIMINATION, OR PREVENTION OF HAIR GROWTH

Abstract: Source: US6283956 BA [EN] A skin care agent having an average diameter for enabling the agent to penetrate the skin, the hair shaft, the hair follicle, the hair bulb or the hair duct. The agent is exposed to the first wavelength of electromagnetic radiation and absorbs the first wavelength of electromagnetic radiation.

1734 forward citations • Similar • Translate • Full-text • Status • Citations • Insight

PatBase: No particles, 200 micrometers particles, 1 micron particles with prior art application, 1 micron particles after treatment with ultrasound

Classifications: Classification Explorer

International (IPC 8-9): A61B A61B17/00 A61B17/22 A61B18/00 A61B18/18 A61B18/20 A61B19/00 A61F9/007 A61H21/00 A61K31/01 A61K31/015 A61K31/403 A61K31/409 A61K31/506 A61K31/555 A61K31/60 A61K33/00 A61K36/02 A61K36/185 A61K36/28 A61K38/18 A61K38/28 A61K38/43 A61K41/00 A61K45/00 A61K47/10 A61K47/22 A61K8/02 A61K8/19 A61K8/30 A61K8/34 A61K8/49 A61K8/58 A61K8/63 A61M37/00 A61N A61N5/02 A61N5/06 A61N5/067 A61P17/00 A61P17/10 A61P17/16 A61P31/00 A61P31/04 A61P35/00 A61P43/00 A61Q17/00 A61Q7/00 C12N13/00 C12N5/00

International (IPC 1-7): A61B0/00 A61B1/00 A61B1/818 A61B17/36 A61B18/00 A61B18/04 A61B18/18 A61B18/20 A61H21/00 A61K31/409 A61K31/555 A61K41/00 A61K45/00 A61K47/10 A61K47/22 A61K7/06 A61N5/006 A61N5/02 A61N5/06 A61P17/00 A61P17/10 A61P17/16 A61P35/00 A61P43/00 G01N

CPC: A61B18/203 A61B2017/00765 A61B2017/22085 A61B2018/00452 A61B2018/00476 A61B2018/1807 A61N2005/0652 A61N5/0617 A61N5/062 A61B2018/00458 A61B2018/0047 A61N5/0616 A61P17/00 A61P35/00 A61K41/0057 A61K41/0071 A61N2005/0651 A61N2005/0659 A61N2005/067 A61P17/10 A61K2800/81 A61K41/0004 A61K8/02 A61P17/16 A61P43/00 A61Q7/00 A61B2018/00023 A61B2018/00702 A61B2018/00791 A61B2090/395 A61K2800/58 A61K2800/782 A61K8/19 A61K8/31 A61K8/347 A61K8/35 A61K8/361 A61K8/365 A61K8/368 A61K8/49 A61K8/494 A61K8/4953 A61K8/498 A61K8/67 A61K8/671 A61K8/676 A61K8/678 A61K8/9706 A61K8/9789 A61Q19/08 A61N2005/0605 A61N2005/0609 A61N2005/0653 A61N2005/0654 A61N2005/0662 A61N5/0601 A61N5/0613 A61N2005/0606 A61N2005/0642 A61N2005/0644 A61N5/0624 A61P31/04 A61N5/06

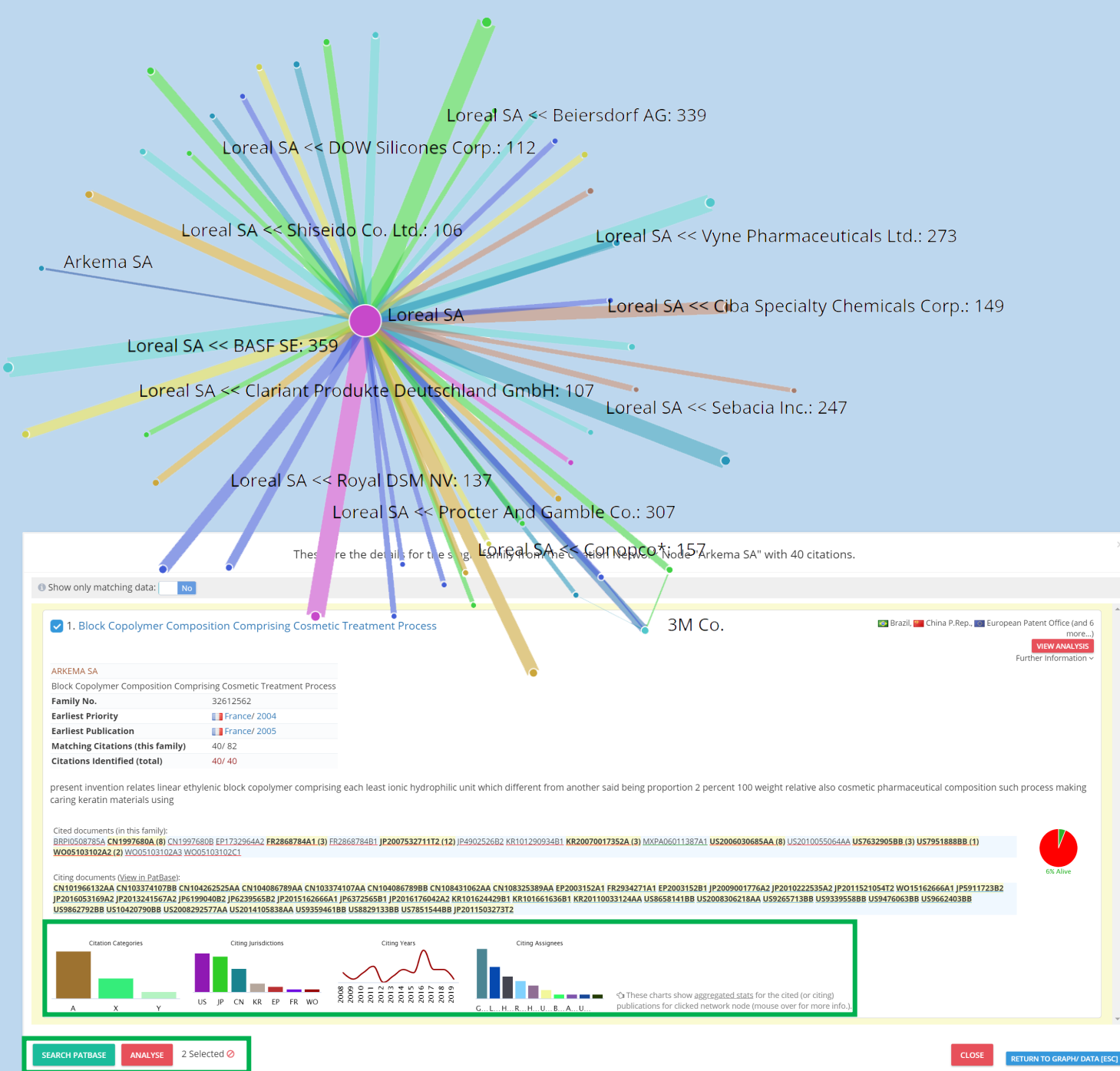
US: 1/1 128/898 424/195.17 424/195.170S 424/59 424/59S 424/70.1 424/70.100P 424/722 424/722S 424/737 424/737S 424/94.1 424/94.100S 435/377 435/377P 514/12 514/161 514/161S 514/184 514/184S 514/275 514/275S 514/4 514/414 514/414S 514/6.5 514/6.500S 514/8.9 514/8.900S 604/20 604/20P 604/22 604/22S 606/10 606/127 606/13 606/131 606/133 606/13S 606/2 606/27 606/27S 606/3 606/32 606/3P 606/3S 606/8 606/9 606/9P 606/9S 607/101 607/86 607/86P 607/87 607/87S 607/88 607/88P 607/88S 607/89 607/89P 607/89S 607/90 607/91 607/98

Family: Family Explorer

Finding potential licensees

Once the searcher has identified 3 valuable families from the company's portfolio, they can generate a citation network on those families to identify which assignees are citing them and provide useful competitive intelligence and indicate close competitors that could be potential partners or licensees.

Citation Networks in PatBase Analytics V3 show who is citing your portfolio. The searcher can click on a data point of interest to see more details for each citation listed, with the option to run an instant analysis on the families listed or take it back into PatBase for a more in-depth review.



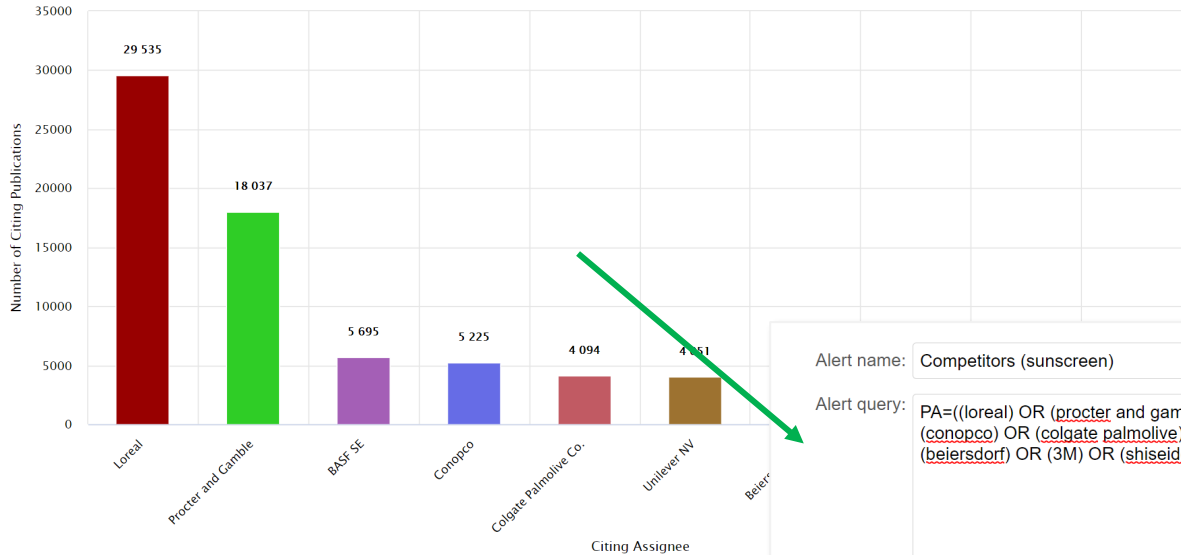
Assessing forward citations

Patents for inventions that have more forward citations or are more valuable are likely to encourage research and patenting in very similar areas as there is a proven economic incentive for design-around strategy and picket fencing. The larger the amount of research and patenting focussed on that area, the greater the number of citations to the original patent. With more research and investment, there are generally more inventions and the more inventions there are, the higher the chance of infringement or encroachment. Monitoring new competitors in the area can help protect your own innovations, and prevent you infringing on your competitors'.

Your competitors might vary depending on which area of development you are working in. Setting up alerts on these competitors helps to avoid slow, manual checks with results sent to directly to your inbox either weekly or monthly.

Top 10 Citing Probable Assignees by Number of Citing Publications

Long-lasting sunscreen



Alert name: Competitors (sunscreen)

Alert query: PA=((loreal) OR (procter and gamble) OR (BASF) OR (conopco) OR (colgate palmolive) OR (unilever) OR (beiersdorf) OR (3M) OR (shiseido) OR (kimberly clark))

Email to: caitlin@minesoft.com

(Separate multiple email addresses with a semi colon)

☐ Do not send email when alert returns zero results.

Text to include in alert email: Monitor new families for potential infringement for new sunscreen development

Alert frequency: ☒ Weekly ☐ Monthly

Display format: Classic

Alert options: ☐ New families only
☐ New families and when new publications are added
Show advanced options ⓘ
☐ When first IPC is added to the family
☐ When first assignee is added to the family
☐ When first English abstract is added to the family
☐ When first assignee or IPC or abstract is added to the family (all of the above)
☒ When legal status changes

Create alert

Clear

Infringement analysis

An Infringement Search (or Freedom to Operate, FTO, Clearance) is a critical analysis for any company wanting to market a product or service anywhere in the world. The risks and consequences of patent infringement can be significant and could involve litigation or the withdrawal of your product or service. Simply put, an infringement search involves identifying any third-party patent which would be infringed by selling a product or service in a specific country or jurisdiction. The same processes used to spot licensing opportunities can be used to spot competitors infringing on your intellectual property.

For all relevant results, legal status data and citations are critical to ensure that a full picture is obtained. Advanced highlighting tools, full text filters and text-mining capabilities can help improve the efficiency of this in-depth analysis.

By assessing the forward citations for an entire portfolio or result set, you can find hidden pieces of prior art and at the same time, compile a list of known competitors in their technology field. This list of company/assignee names can be monitored for new publications using automated alerting features, such as PatBase alerts.



Competitive intelligence

Regular examination of your own patents is important. While you may not find any new information the first time you review your patent portfolio, competitors will always be at work to overtake you. By investigating your own patents on a regular basis, you'll know if someone develops new technology that cites any of the patents you already hold.

While a citation of your patent doesn't have to mean that competition is on the way, in many cases it does. You could uncover a company that's planning to launch a new technology that could overtake yours in the market. If nothing else, someone's citation of your patent could make you aware of new trends emerging in the market.

Patent citations are continually added, especially when new entrants appear in a sector, when an established player enters a new technological area or when a sudden move (e.g. acquisition) occurs. These new patent citations may be of relevance in your CI strategy and it is therefore extremely important to be made aware of them as soon as possible.



Add a Alert:

Company:

Minesoft

Name:

Competitors

Description:

Monitoring to see who is citing our patent portfolio

Patbase Search Term:

PA=(l oreale) OR (loreal)

Users:

Tim Campbell

Kevin Spahr

Luke Mularczyk

Caitlin

Ken Rooke

Hold [Ctrl] for multi select.

Filters are applied to the Citations themselves after the alert has run. Please ensure that you understand the process before applying filters.

Exclude Assignees:

Loreal

Add

Exclude Categories:

A: Defining the state of the art and not...

D: Document cited in the application

E: Earlier patent application, but...

I: Relevant for reasons of inventive step

L: Document cited for other reasons

N: No assigned category.

O: Non-written disclosure

P: Intermediate document

T: Theory or principle underlying the...

[Clear]

Add Alert

The logo for CiteTracker, featuring a stylized 'C' made of four colored squares (yellow, orange, blue, pink) followed by the word 'CiteTracker' in a serif font.

CiteTracker

CiteTracker Weekly Alert Notification for week 2107

Dear Mie Rasmussen (Minesoft),

Welcome to your CiteTracker weekly alert notification.

A summary of new citations for each of your alerts follows.

Please contact Minesoft customer support (reply to this email or call +44 (0)20 8404 0651) if you have any questions, queries or if you'd like to add, remove or amend any of your alerts.

Please click here to fully review your alerts.

Report week number: 2107

No of alerts included: 3

Competitors

Monitoring to see who is citing our patent portfolio

New families:

54

New forward citations:

205

New backward citations:

0

[This alert notification sent to: Jorge, Mie Rasmussen, Rahman Hyatt, Ida, Phil Allan, Clement, Jochen, Peter Niermann, James Wicks, Katarina Bartos, Jochen Lennhof, Tim Campbell, Kevin Spahr, Caitlin, Matvei Maurer, Melanie Bridler, Ken Ropke, Anna Avitto, Gustavo, Alexander, Shigeo Nambu, Elizabeth Lam, Sabelo Moyo, Alexandre, Ben Rowen, Joe Allen]

Four Publications

Four Publications/ Three Families

New families:

0

New forward citations:

0

New backward citations:

0

[This alert notification sent to: James Gray, Jorge, Mie Rasmussen, Olivier Huc, Ophir Daniel, Phil Ostanock, Rahman Hyatt, Ida, Demo]

CiteTracker Alert

CiteTracker Test Alert for 961 Family IDs

No new citations

Setting up alerts

Until recently, it was extremely difficult to identify new patent citations. This task required the manual review of a list of patent citations at a date 't' and the list at a date 't+1' to identify differences over the period. Essentially, a new patent citation is not necessarily a newer patent. A newly published patent can cite an older patent than the patent of reference. Similarly, new patent citations can be added to an already known patent during specific events such as oppositions, appeals, interference or inter partes reviews (US) or third-party observations, etc.

As a result, it can be difficult to monitor new patent citations. Instead, companies rely on discovering a new, important patent citation at a later stage during routine patent reviews. However, Minesoft's CiteTracker uses a customisable patent search query to identify the patent families of interest to the searcher and then monitors all backward and forward citations for these families. This has the important advantage of taking into account new patent families that may be created after the query has run a first time, guaranteeing that the searcher doesn't miss any valuable new inventions.

To conclude...

Citations can be useful indicators for competitive and strategic intelligence:

- Patents citing their own early patents will tend to be of pioneers, while those citing another company's patents are usually "imitators".
- Citation searches may reveal competitors "patenting around" a patent portfolio, filing improvements to a rival's product line.
- Studies indicate that patents issued to universities and research institutions providing generous citations reflect quality research.
- A highly cited patent represents core technology that other inventors have attempted to improve upon. When an important patent turns up in a search, the patents (and patent applications) citing it should be reviewed.
- Looking at forward citations is good way to determine the value of patents within a portfolio because a patent that is cited often is likely more useful and therefore more valuable than those that aren't.
- Organisations with a larger numbers of citation connections to other organisations are considered more influential; generally, these are connections to many organisations, but it can also be a larger number of citations to a few companies.



Contact us

For more information about any of our products or to request a free trial, speak to your Minesoft representative today.

Alternatively, you can call us on +44 (0)20 8404 0651, or email is at info@minesoft.com

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