

Cosmederm Bioscience-Patent Portfolio Report-April 2018

By Order of US Bankruptcy Court, Case # 17-06513-LA7, Chapter 7, Richard Kipperman, Trustee

Heritage Global Patents & Trademarks has received Bankruptcy Court approval to conduct a Sealed-Bid Auction of the remaining Intellectual Property of Cosmederm Bioscience. The Bid Submission Deadline for bidding on these assets shall be June 9, 2018. The Bid Submission Form, as well as all additional information relating to this auction will be found on the Heritage Global website at www.hgpauction.com



This report covers Cosmederm's granted patents and patent applications worldwide. The information contained in this report is believed to be from reliable sources, however all Due Diligence shall be the responsibility of the Bidder and shall be conducted PRIOR to Bid Submission as there will be no opportunity to conduct Due Diligence after the award to the high bidder.

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Cosmederm Bioscience was a specialty pharmaceutical company that manufactured and marketed pharmaceuticals in the Cosmeceutical and OTC drug categories. During its corporate existence it offered topical dermatological skin creams and products under the Cosmederm and Refinity brand names. The company was founded in 1999, was based in San Diego and was a subsidiary of Evofem, Inc.

Suitable Topical Keratinized Skin
 Formulation Vehicle

Skin Irritation

Pain

Polymer

Key Patenting Statistics for Cosmederm		
Total US Grants		11
Utility		11
Design		0
Pending US Applications (Within 5 years)		6
Average Pendency		2.9 Years
Total Non-US Documents		21
Top Inventors	HAHN, GARY S.	4
	THUESON, DAVID O.	2
	AXFORD LAURIE A	2
Top Agents	GORDON & REES LLP	2
	KNOBBE MARTENS OLSON & BEAR LLP	2

Cosmederm's Global Patenting Activity by Year

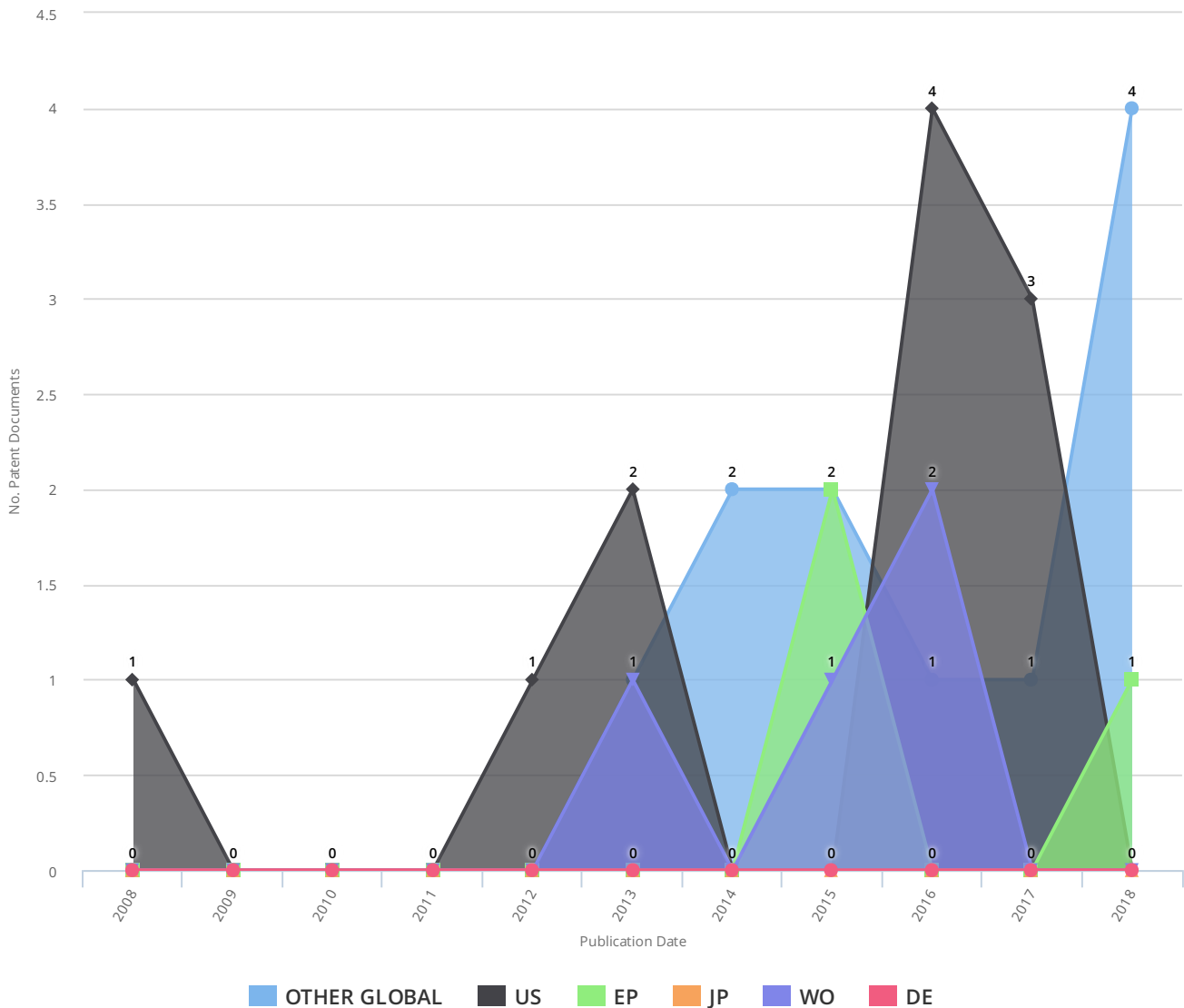
Analysis includes data from all 30 jurisdictions in which Cosmederm owns patents

Cosmederm's published patents and applications are displayed by their publication date. The data in the analysis is deduplicated at the serial number level, which means that only one document is counted per invention per country analyzed. The "Other Global" set contains all patenting authorities not specifically broken out in the other data collections. Furthermore, the analysis includes both internally developed patents, and those that may have been acquired from other patentees.

Cosmederm is currently assigned to 34 patent documents published in the last 20 years. They have enjoyed a growth rate of 37.92% over the past 5 years, and peaked in 2016 with 7 global patent documents published.

Cosmederm Unique Patent Documents by Publication Date

Data is deduplicated at the serial number level. Includes both internally generated and acquired documents

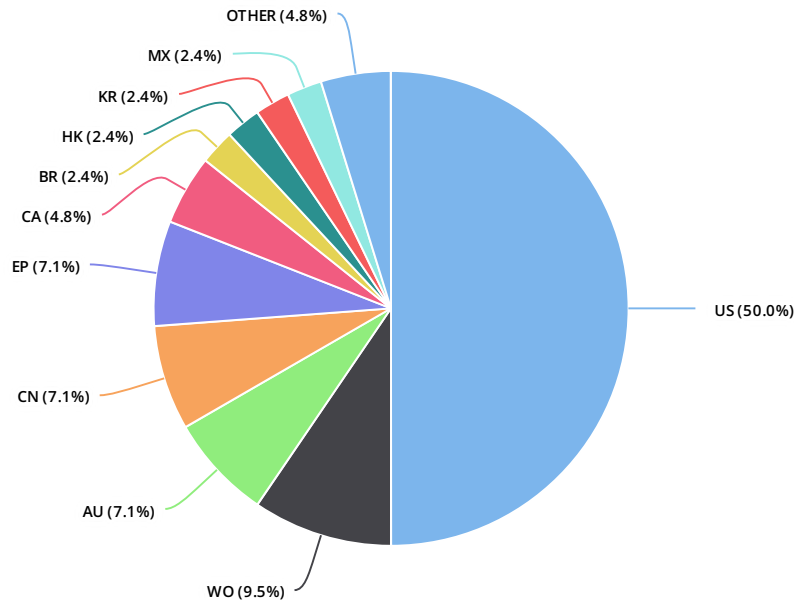


Source: www.AcclaimIP.com

Breakout of Cosmederm's Global Patents By Authority

Analysis Includes Deduplicated Global Patent Documents

Cosmederm Top 10 Countries of Publication

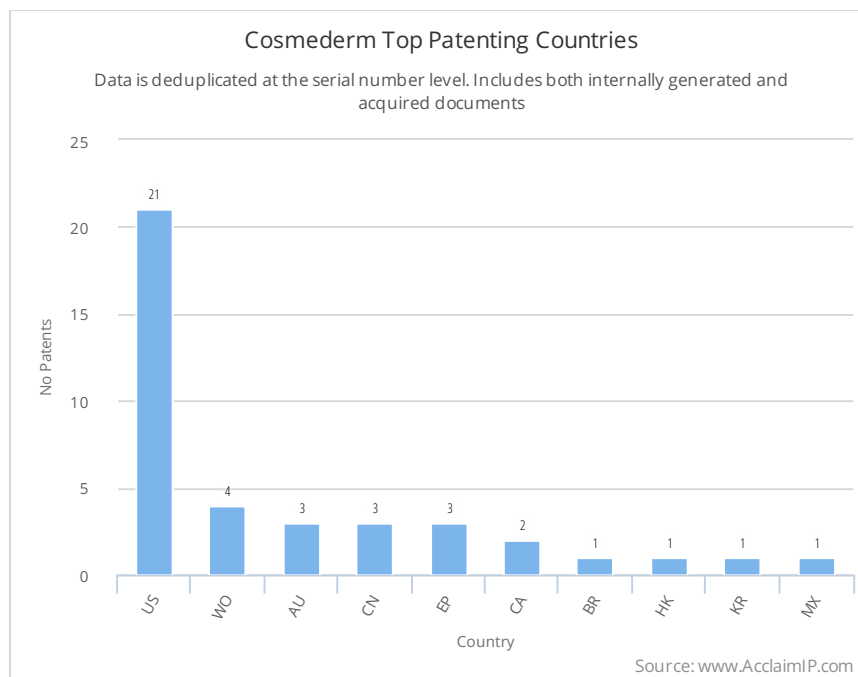


Source: www.AcclaimIP.com

Cosmederm owns patents and patent applications from 12 different countries and jurisdictions. The top 10 are displayed in the pie chart above. The remaining 2 patenting jurisdictions represent just 4.8% of the entire portfolio which includes 42 deduplicated patent documents in all.

50.0% of the portfolio is made up of US patents and applications followed by 9.5% WO (also called PCT applications) documents, and 7.1% deduplicated AU documents.

The chart on the right displays the raw counts of the number of global patent documents owned by Cosmederm in the top 10 patenting jurisdictions.



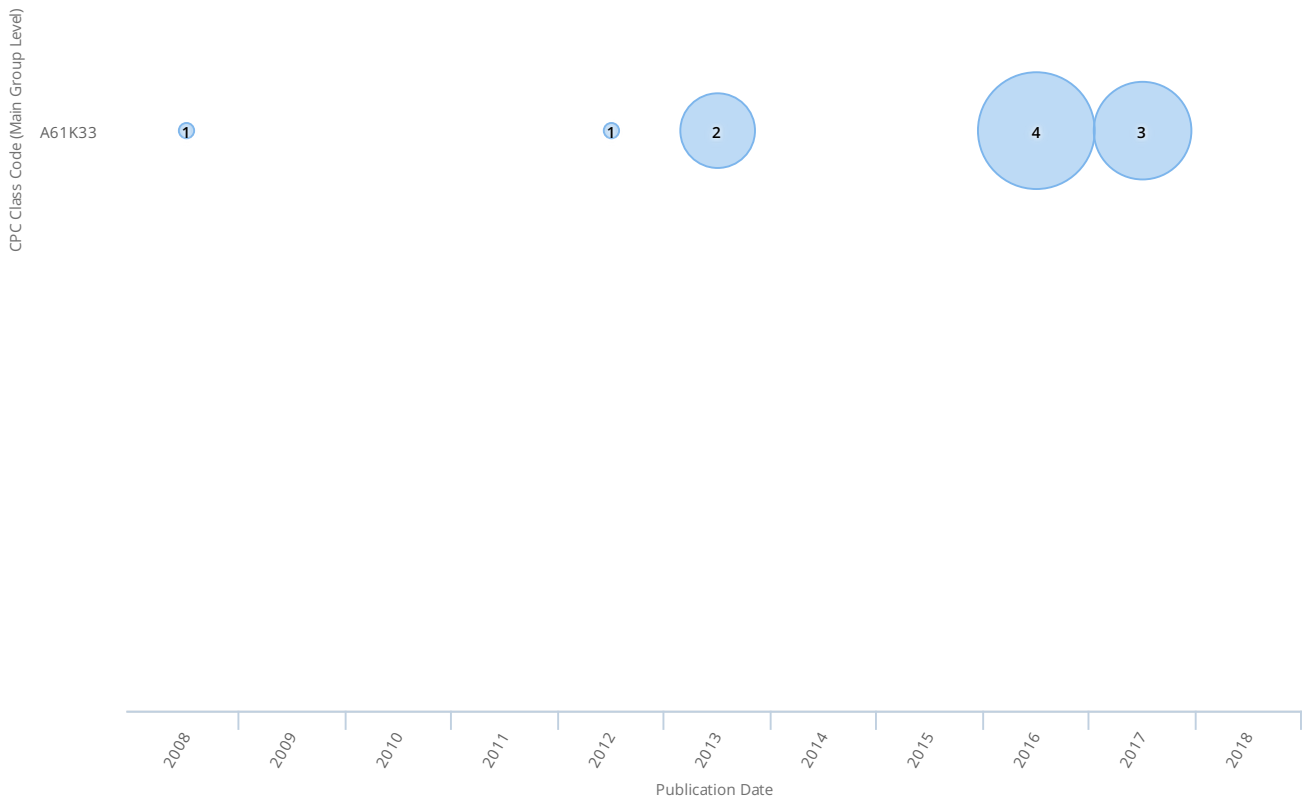
Source: www.AcclaimIP.com

Evolution of Technology Covered by Cosmederm's US Portfolio

Analysis Includes Deduplicated US Patent Documents

The chart below shows Cosmederm's patent portfolio by class and by publication date, representing a 10-year window. The chart signals where Cosmederm is currently active in patenting, and where they are no longer patenting new technology, but may have a significant number of patents. The top 20 CPC classes are represented here at the Main Group level. A supporting table of class titles is presented at the end of the section.

Evolution of Cosmederm's Patent Portfolio by CPC Class



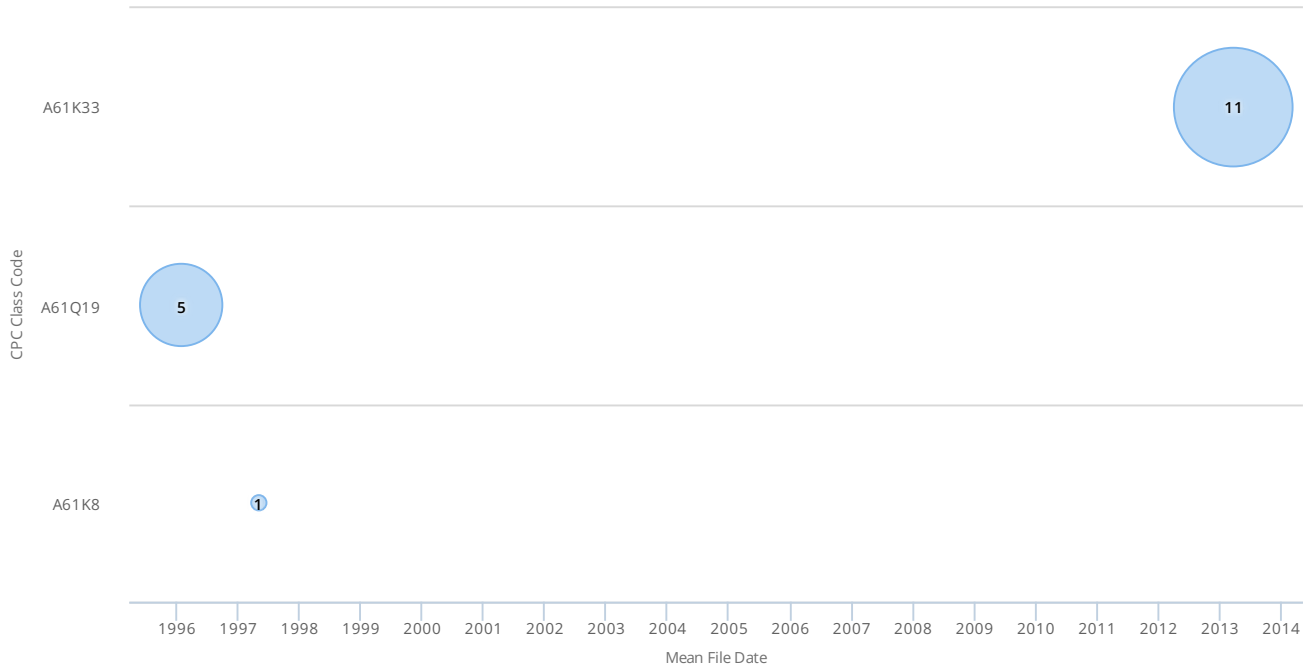
Source: www.AcclaimIP.com

Top 20 Patent Classifications in Cosmederm's US Portfolio

Analysis Includes Deduplicated Patent Families by Mean File Date

Cosmederm's US Patent Portfolio by Mean File Date by CPC Class

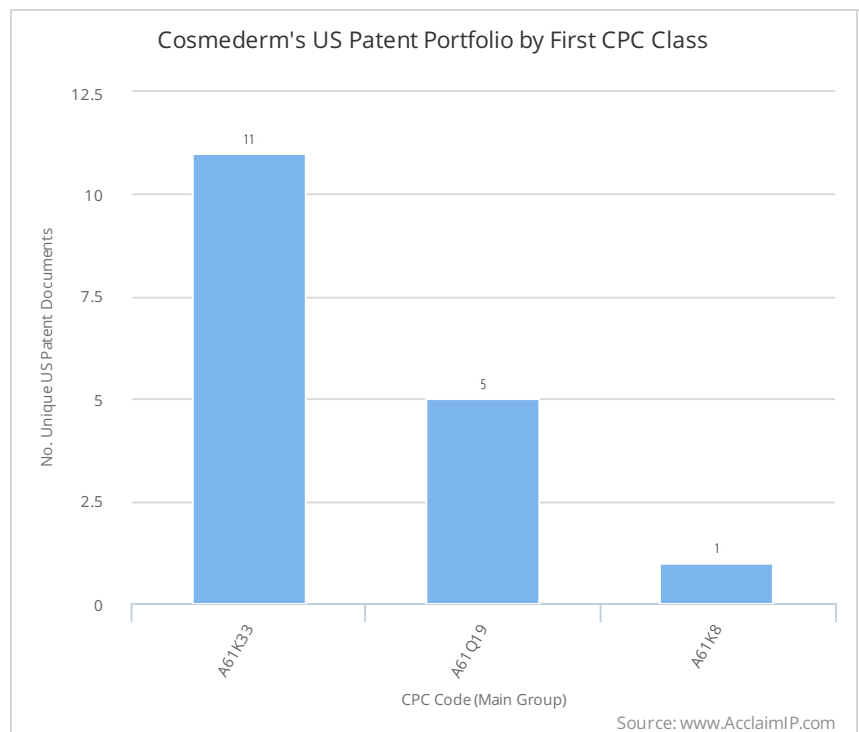
Analysis uses First CPC code listed at the main group level.



Source: www.AcclaimIP.com

50% of Cosmederm's US patent portfolio is represented by their top 20 CPC patent classifications. In this analysis, we first performed a serial deduplication on the patents, then analyzed them using the CPC classification listed first on the patent or application. In this way the portfolio is represented simply and accurately.

The chart to the right shows the same analysis as the bubble chart for easier comparison of relative quantity.



Source: www.AcclaimIP.com

Top 20 Patent Classifications in Cosmederm's US Portfolio

Analysis Includes Deduplicated US Patent Documents

The table below displays the top 20 CPC classifications at the Main Group level, including class title. The No. Patent Docs is reiterated from the previous page.

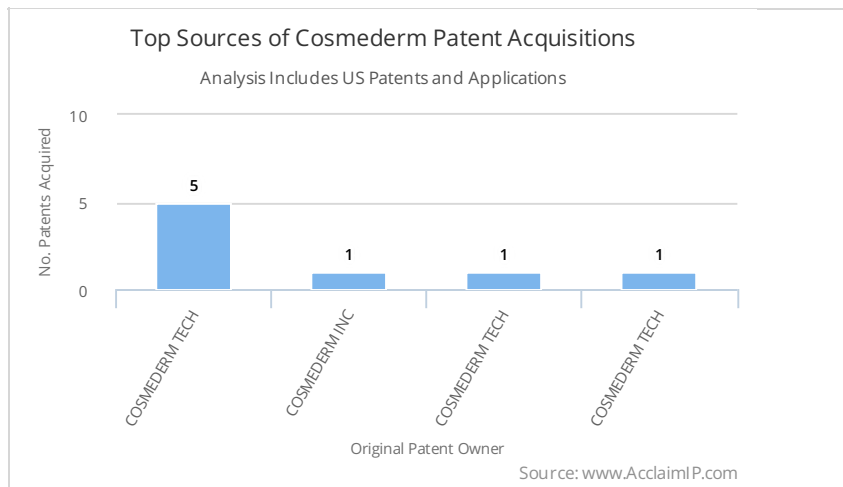
CPC Class Code	CPC Class Title	No. Patent Docs
A61K33	Medicinal preparations containing inorganic active ingredients	11
A61Q19	Preparations for care of the skin	5
A61K8	Cosmetic or similar toilet preparations	1

Cosmederm Acquisition Analysis

Patents are regularly bought and sold just like tangible assets. The analysis below shows the number of patents that have been acquired by Cosmederm. The analysis further breaks down acquisitions by source and date.

Lastly, we analyze acquired patents by technology, and present a list of competitors who have acquired similar technology.

Sources of Cosmederm's Patent Acquisitions

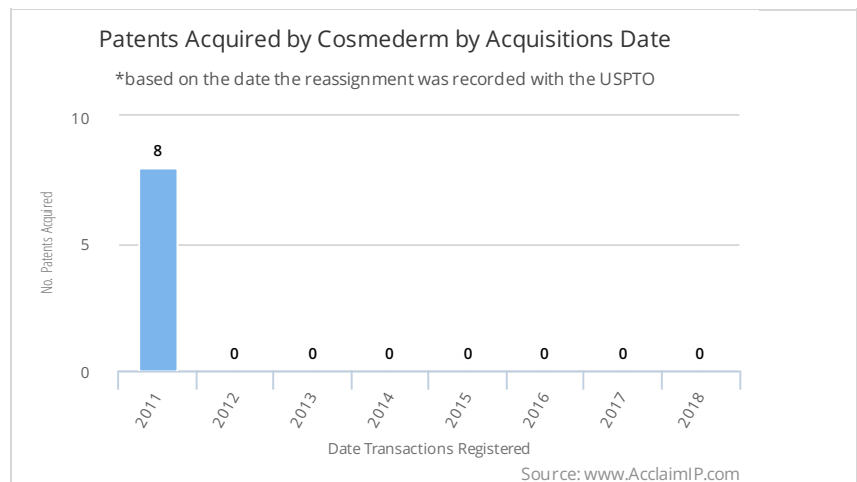


Cosmederm has acquired patents from 4 different patent assignees in the past 20 years. The COSMEDERM TECH acquisition represents 5 patents alone. Other sources of patents include COSMEDERM INC, COSMEDERM TECH INC, and COSMEDERM TECH LLC, among others.

Dates of Patent Acquisitions

In 2011, acquisitions peaked with 8 recorded re-assignments, the lion's share coming from COSMEDERM TECH.

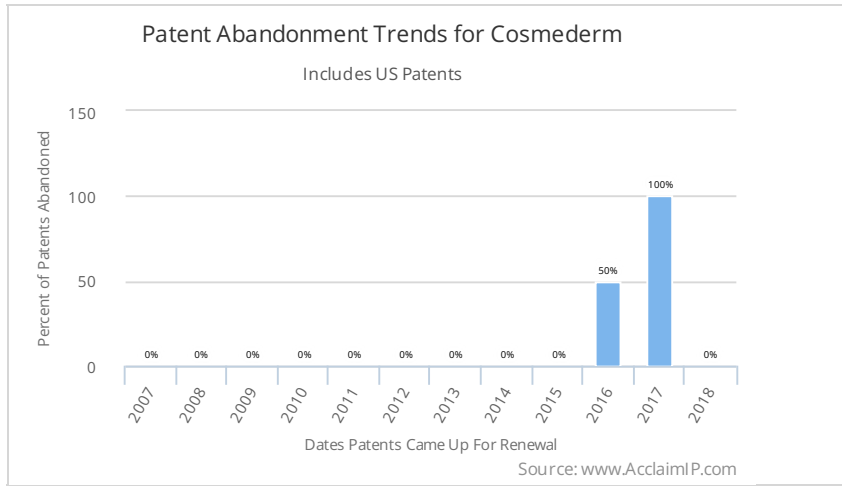
Keep in mind that patent acquisitions are made with civil contracts, and are usually not registered with the USPTO for six months to a year after the acquisition occurred. For this reason, the most currently available data may be lagging behind.



Maintenance Trends for Cosmederm

Patent maintenance trends are an important measure of how a patent portfolio is managed over time, and speaks volumes about a company's patent strategy. Some companies abandon as much as 50 percent of their portfolio at each renewal tranche, while others pay maintenance fees on the entire portfolio regardless of the current benefit the portfolio conveys to the patent owner. A well-managed healthy portfolio will typically show abandonment rates of 10 to 20 percent at each renewal tranche.

Annual Maintenance Behavior

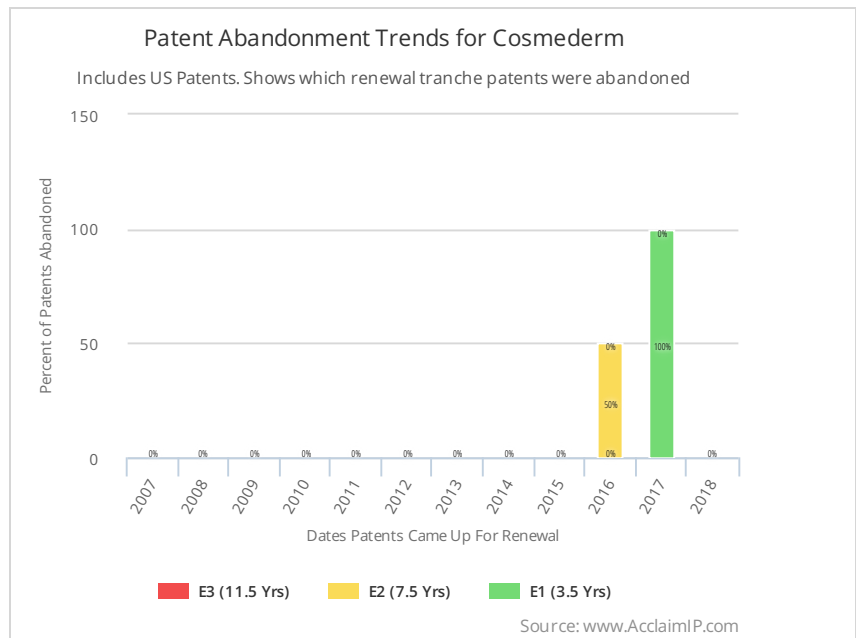


The chart to the left shows year-over-year maintenance activity. It accounts for previously abandoned patents, and shows the percentage of the patents that came up for renewal in any renewal tranche, and were subsequently abandoned.

Split by Renewal Tranche

In the US, patents must be maintained three times during their lifecycle. Maintenance payments are due at years 3.5, 7.5, and 11.5 after the patent's grant date. If no payments are received, patents expire after the six month grace period at years 4, 8 and 12 respectively.

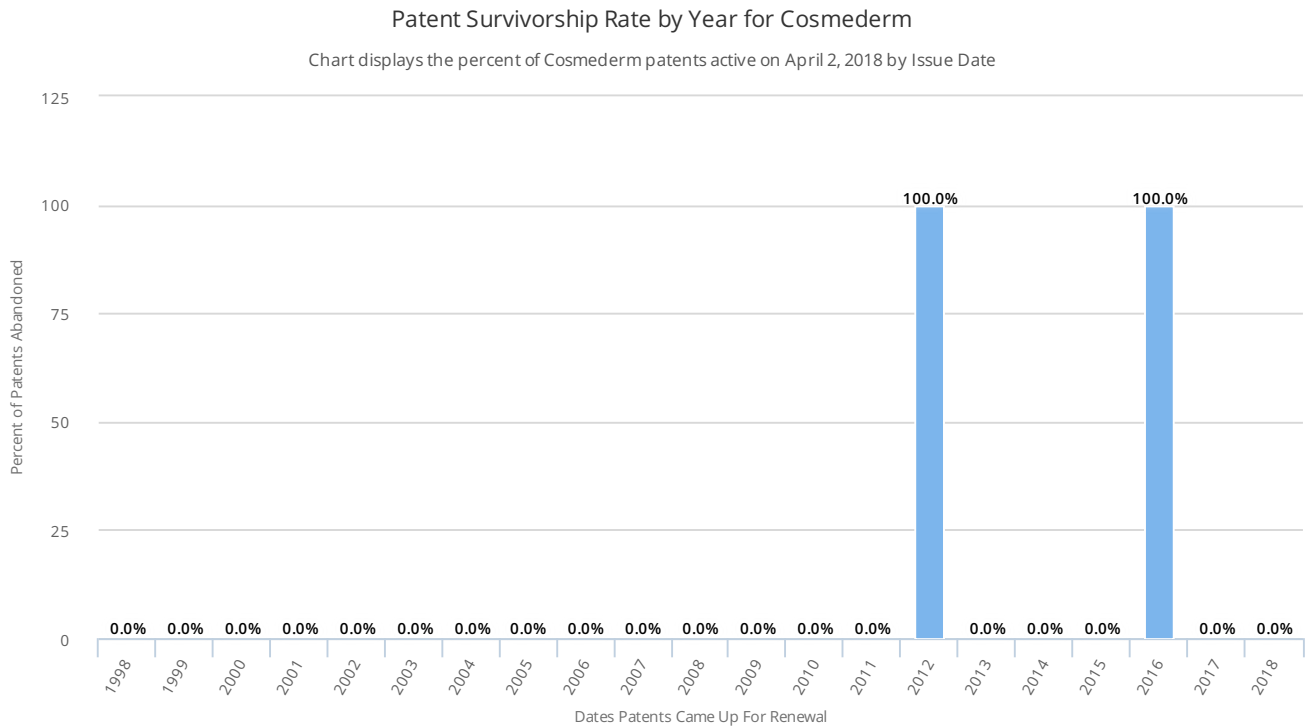
By way of comparison, approximately 20% of all renewable US patents are abandoned each year.



Survivorship Trends for Cosmederm

A patent survivorship rate analysis uses the same data from the maintenance analysis to show the number of patents that were issued on a date that still survive today.

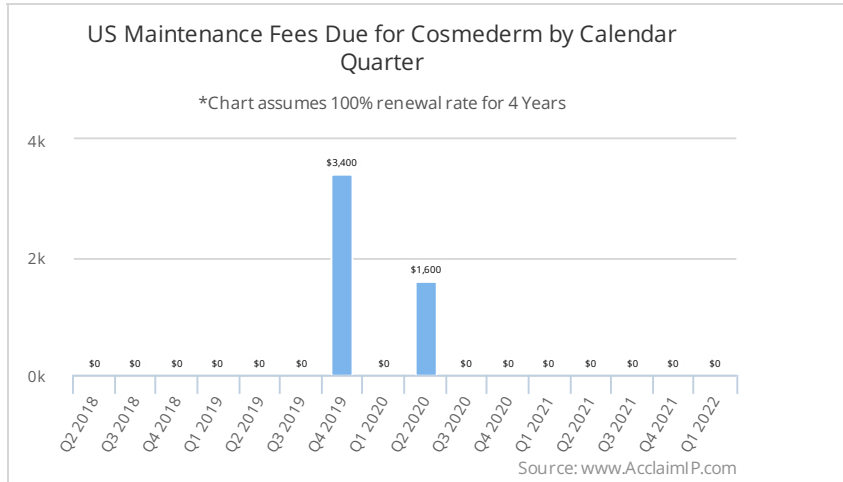
Many portfolios show a typical stair-step look, where survivorship drops at 4-year intervals at years 4, 8 and 12 when maintenance payments can no longer be made, and the patent expires for failure to pay maintenance fees.



Maintenance Fees Due in Future Quarters

The charts below aid in planning portfolio maintenance. They show the total dollars due for the subsequent 4 years, by quarter, if one were to fully maintain a portfolio. In the US, maintenance fees rise at each renewal tranche from \$1800 to \$3600 to \$7400 for large entities. The estimates account for these differences, as well as the lower fees allowed for small and micro entities.

Total Future Fees



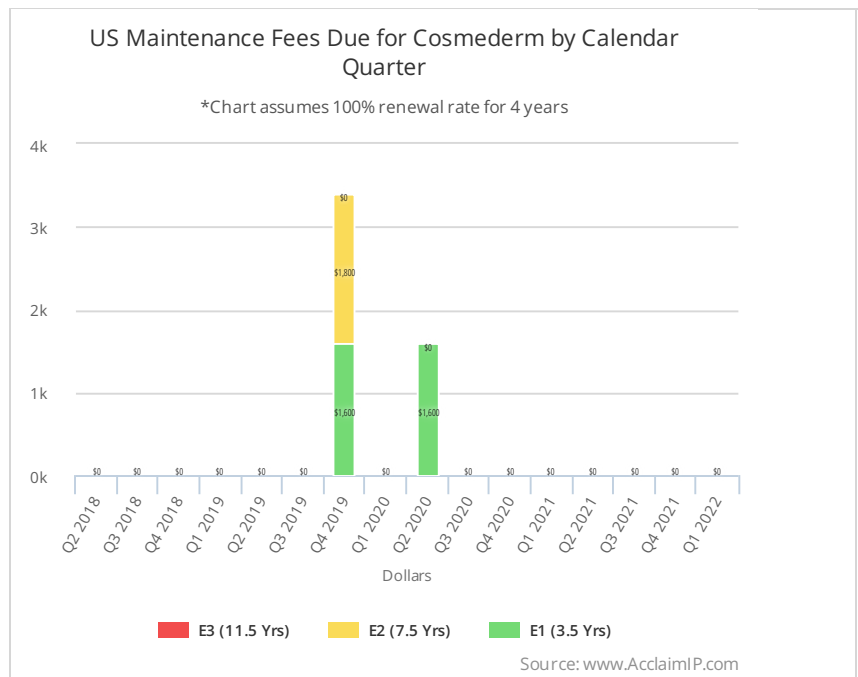
Over the next four quarters, Cosmederm will pay a total of USD0 to maintain their US portfolio which highlights the need for a sound portfolio management and maintenance strategy.

In this view, in contrast to the view below, is easier to read the total fees due to fully maintain the US portfolio.

Fees Due by Renewal Tranche

Maintenance fees effectively double at each maintenance tranche.

The same chart above is split into renewal tranches. Special attention should be paid to patents in the E2 and E3 renewal tranches. They have had enough time to prove their worth to the company and impact on the market, and their fees are relatively high.

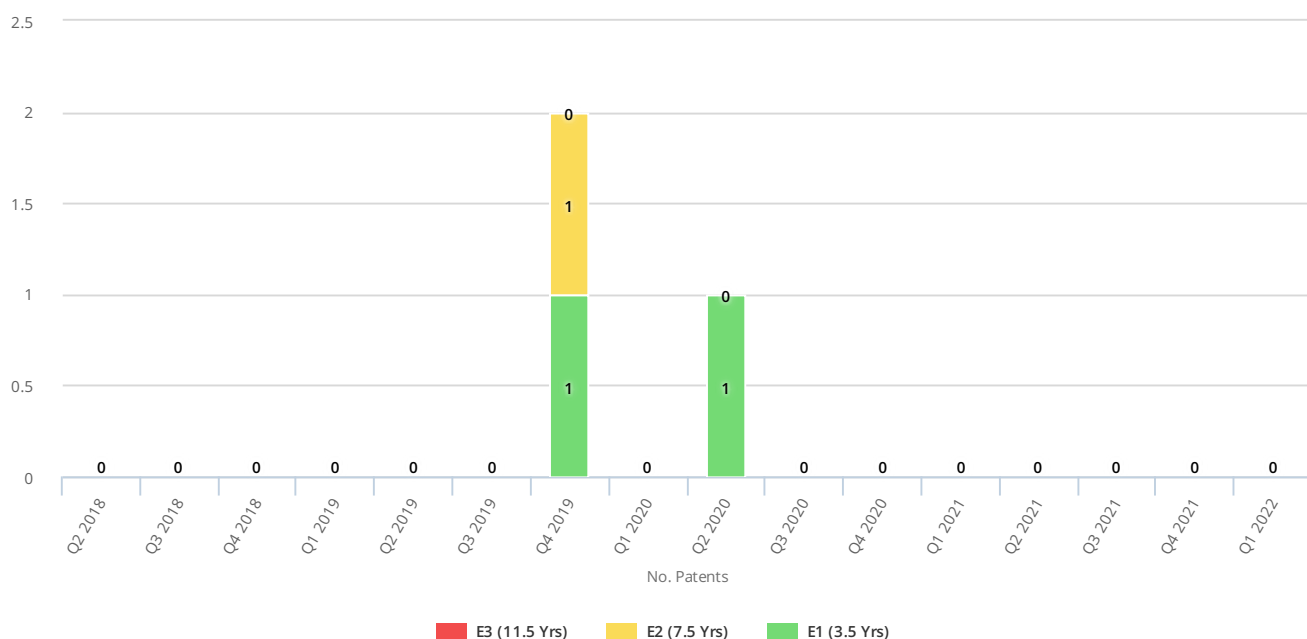


Maintenance Fees Due by Number of Patents

It is valuable to know precisely how many patents require maintenance decisions in each of the subsequent future quarters. Special attention should be paid to the patents in their E3 renewal period shown in red. These patents cost USD7,400 to maintain to the end of their term. Due to terminal disclaimers, some patents may have only a few months or years left in their full term. Other E3 patents may not have proved valuable, and will likely not do so in their remaining term.

Unlike the expiration charts which use the 4, 8 and 12 year expiration dates, the chart below shows you when the payments are due which is year 3.5, 7.5 and 11.5 respectively. Using maintenance due date helps you avoid unnecessary late fee penalties for renewing a patent in the six month grace period.

No. of Cosmederm US Patents with Maintenance Fees Due
Displays number of patents with payments due at year 3.5 / 7.5 / 11.5 after issue date.



Source: www.AcclaimIP.com

Fees Due by Renewal Tranche

In the next three years patent maintenance fees are due to the USPTO totaling USD5,000. The table below presents the fees due in each calendar year for the next three years. The current year (2018) shows what is currently remaining assuming 100% maintenance of the portfolio and removes patents that have either had their maintenance paid or have already been abandoned.

Tranche	2018	2019	2020
E1 (3.5 Years)	USD0	USD1,600	USD1,600
E2 (7.5 Years)	USD0	USD1,800	USD0
E3 (11.5 Years)	USD0	USD0	USD0
Total	USD0	USD3,400	USD1,600

Evolution of Key Inventors in Cosmederm's US Portfolio

Analysis Includes Deduplicated US Patent Documents

The chart below shows Cosmederm's patent portfolio by inventor and by publication date, representing a 10-year window. The chart identifies the top 20 most prolific inventors of their organic portfolio (i.e. acquired patents are excluded from the analysis). The chart is most useful to identify key innovators and their level of current patenting activity at Cosmederm.

Evolution of Inventors for Cosmederm

Analysis includes US Law Firms (normalized)



Source: www.AcclaimIP.com

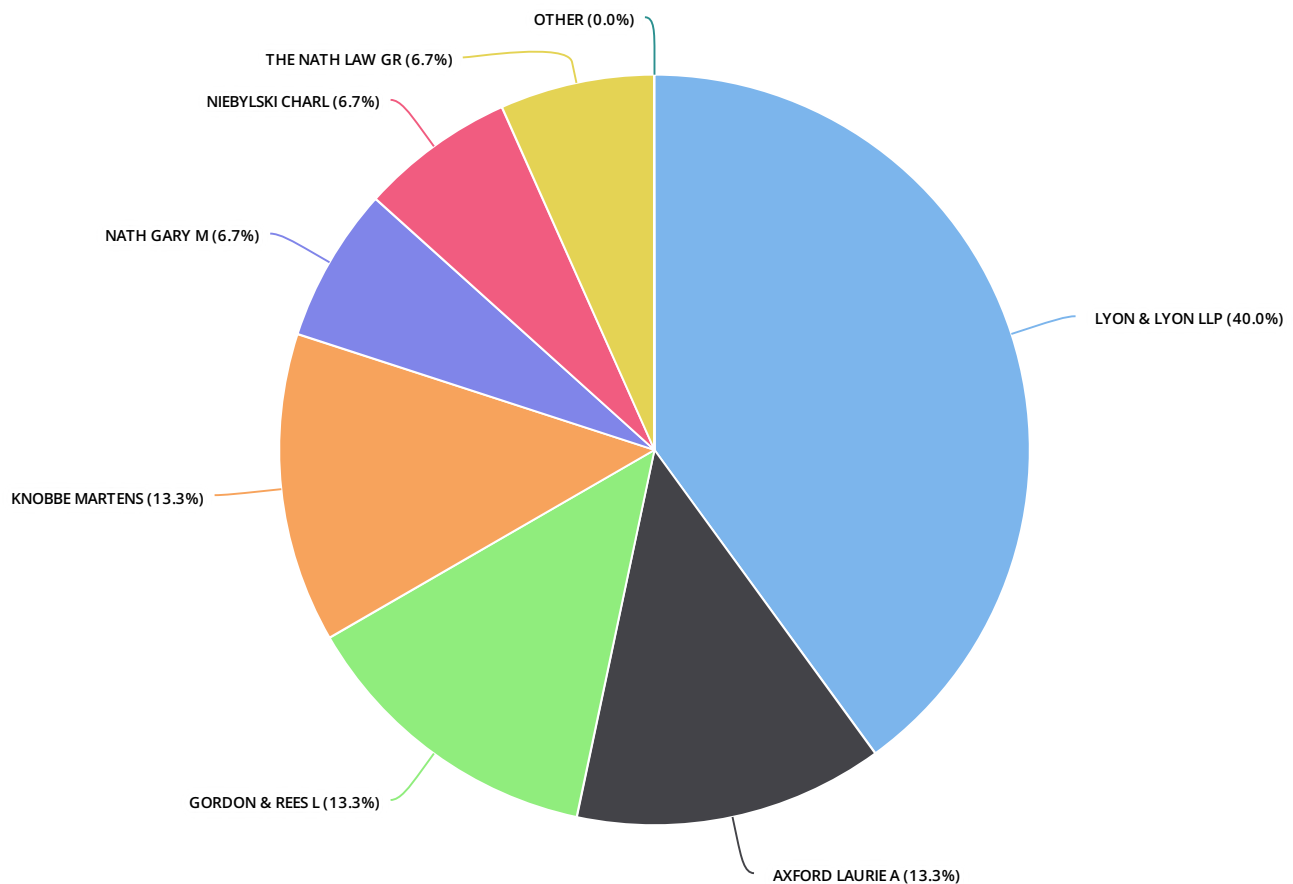
US Agent Analysis: Top 25 Law Firms & Patent Agents

Limited to US Granted Patents

The pie chart below shows the top 25 attorney firms prosecuting patents for Cosmederm. Only organic patents, where Cosmederm is the original applicant, are represented in the chart. The chart also includes a slice labeled "Other" which includes attorney firms not represented in the top 25. Often the other slice is by far the largest slice, because large companies tend to spread out their business among many firms. The reasons vary, not the least of which is an attempt to create a conflict of interest with law firms who may represent another client in a law suit against the patent holder at some future date.

Top Attorney Firms and Agents Patenting for Cosmederm

Analysis includes US patent portfolio only



Source: www.AcclaimIP.com

Longitudinal Agent Analysis: Top 25 US Law Firms

Analysis Includes US Organic Patents

The time series analysis below shows the top 25 attorney firms who have prosecuted US patents for Cosmederm. This analysis only considers organic patents where Cosmederm is the original applicant, and purposely excludes acquired patents. This view of the data gives the reader a better understanding of the evolution of the top 25 patent firms Cosmederm uses, and clearly shows which firms are growing and which firms are losing business at Cosmederm.

Evolution of Agents Prosecuting Patents for Cosmederm

Analysis includes US Law Firms (normalized)



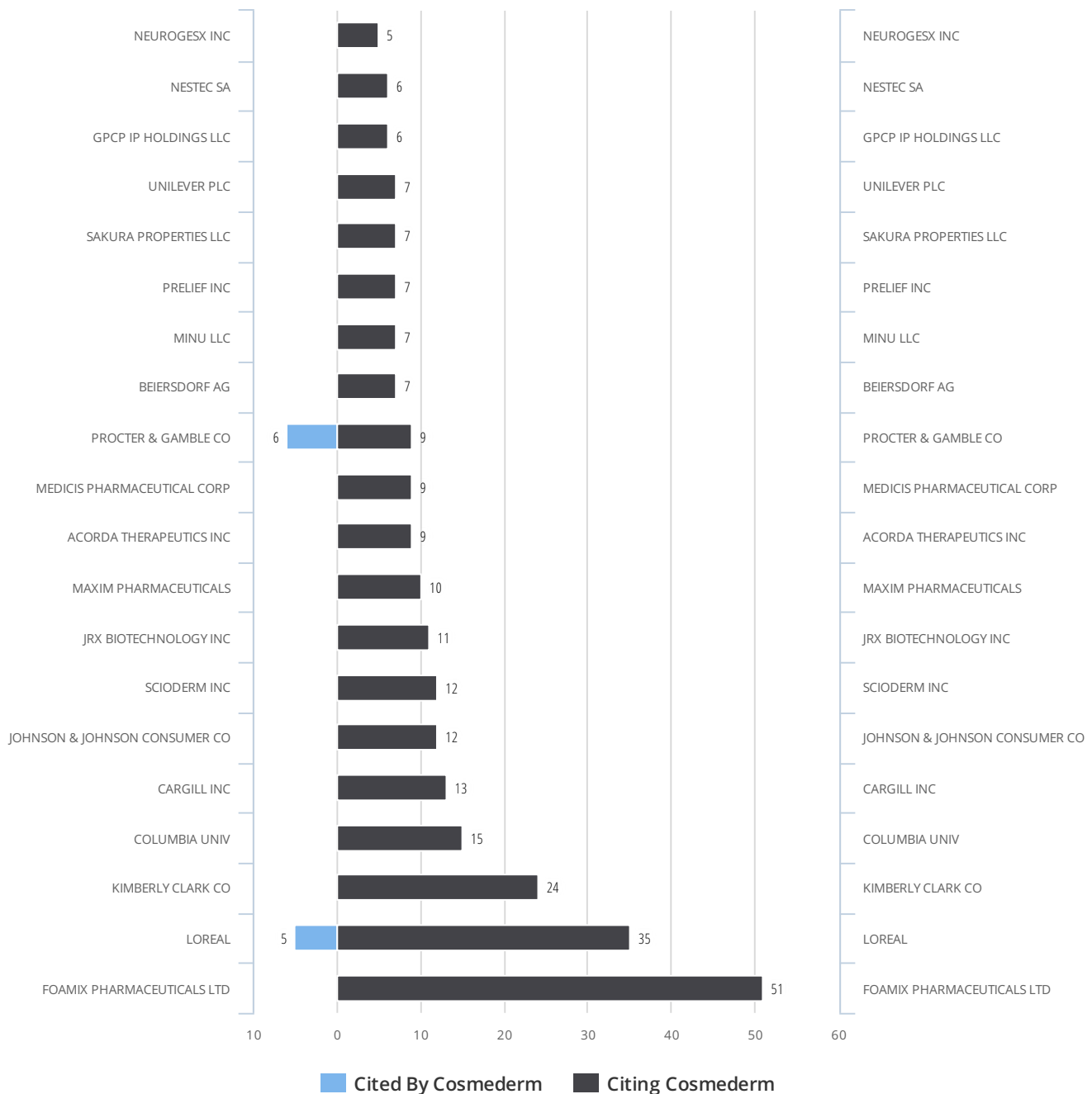
Source: www.AcclaimIP.com

Citation Pyramid Analysis of Cosmederm's US Portfolio

Relative Strength by Citing and Cited Patents

The citation pyramid shows the number of patents that cite Cosmederm's portfolio and the number of patents that are cited by Cosmederm to a particular patent owner. The top 20 citing assignees are analyzed, then the number of cited (by Cosmederm) patent documents is mapped for each assignee.

Citation Pyramid of Cosmederm



Source: www.AcclaimIP.com

Cosmederm's Interesting Patents

The following is a short list of interesting patents owned by Cosmederm. The patents described below are standouts when ranked by various statistical value indicators. A complete ranked list by any of these measures - and up to 30 more - may be provided on request.

175 Forward Citations

Patent US5804203 (*Topical product formulations containing strontium for reducing skin irritation*) has earned 175 forward citations since it was filed on 1996-06-20 making it Cosmederm's most cited patent. Top citers include KIMBERLY CLARK CO (23) , COLUMBIA UNIV (15) , and MAXIM PHARMACEUTICALS (10).

6.69 Years Pendency

Patent US7404967 (*Topical product formulations containing strontium for reducing skin irritation*) has the longest pendency of any of Cosmederm's US patent holdings. Patents with exceptionally long pendencies tend to be top patents.

113 Claims

Patent US6139850 (*Formulations and methods for reducing skin irritation*) boasts 113 claims, putting it in first place among all Cosmederm patents. Patents with a higher number of claims require a larger investment in prosecution and tend to be better patents.

21 Family Members

Patent US9333185 (*Topically administered strontium-containing complexes for treating pain, pruritis and inflammation*) contains 21 members in its simple patent family making it the priority US document in Cosmederm's largest patent family. Patents from large families containing divisionals, continuations and a large ecosystem of non-US counterparts represent a large investment in patenting and are often high value patents.

34 Words in Claim 1

Patent US8147855's 34-word claim...

A method for reducing irritation comprising the steps of: preparing a composition comprising: an aqueous-soluble strontium cation; a skin penetration enhancer; and a delivery vehicle; and topically administering the composition to keratinized skin.

... is the shortest among all Cosmederm's US utility patents granted. Short claims tend to be very broad.

97 Strength Score

Patent US7404967 (*Topical product formulations containing strontium for reducing skin irritation*) has earned the highest statistical strength ranking of all Cosmederm patents. A patent's statistical strength is calculated using an assortment of weighted value metrics and has been shown to have a positive correlation with a patent's true value.