

United States District Court,
D. Delaware.

REVLON CONSUMER PRODUCTS CORPORATION,
Plaintiff.

v.

L'OREAL S.A., Cosmair, Inc., Maybelline, Inc., and Maybelline Sales, Inc,
Defendants.

Civil Action No. 96-192 MMS

Feb. 12, 1997.

Patentee brought action against competitors, alleging infringement of its patent for transfer resistant lipstick. The District Court, Murray M. Schwartz, Senior District Judge, held that: (1) term "silicone ester wax" in claims of patent included substances with both branched and linear chemical structures; (2) "transfer resistance" within meaning of patent meant tendency of cosmetic not to transfer to other surfaces, including skin, clothing, glassware and silverware; and (3) alleged infringer that admitted that its lipstick had compound containing silicone ester wax within meaning of patent was not entitled to amend its admission to deny that its compound was a silicone ester wax as that term was commonly understood by those skilled in the art.

Ordered accordingly.

Cited.

Jack Blumenfeld, and Jon E. Abramczyk, Morris, Nichols, Arsht & Tunnell, Wilmington, DE (Daniel J. Leffell, Elizabeth J. Holland, and Douglas A. Berman, Paul, Weiss, Rifkind, Wharton & Garrison, New York City; and John W. Behringer, Fitzpatrick, Cella, Harper & Scinto, of counsel) for plaintiff.

Rudolph E. Hutz, and Stanley C. Macel, III, of Connolly, Bove, Lodge & Hutz, Wilmington, DE (Norman H. Stepno, Frederick G. Michaud, Jr., David M. Schlitz, and Ronni S. Jillions, Burns, Doane, Swecker & Mathis, L.L.P., Alexandria, VA; and Norman F. Oblon, Richard D. Kelly, Jean-Paul Lavalleye, and Frank J. West, Oblon, Spivak, McClelland, Maier & Neustadt, P.C., Arlington, VA, of counsel) for defendants.

OPINION

MURRAY M. SCHWARTZ, Senior District Judge.

INTRODUCTION

Revlon Consumer Products Corp. ("Revlon") filed a complaint against L'Oreal S.A. ("L'Oreal"), Cosmair Inc. ("Cosmair"), Cosmair Canada, Inc., FN1 Maybelline, Inc. ("Maybelline") and Maybelline Sales, Inc. ("Maybelline Sales") (collectively "defendants") alleging infringement of Revlon's patented composition for transfer resistant lipstick. *See* Docket Item ("D.I.") 61 (Amended Complaint). The patented composition is used in Revlon's ColorStay(R) Lipcolor and Ultima II Lipsexxy(R) lipsticks. Revlon was issued U.S.

Patent No. 5,505,937 ("the '7 patent") on April 9, 1996. According to the Amended Complaint, the composition used in defendants' Color Endure(R) and Great Lip Color lipsticks is claimed in Revlon's '7 patent. Three defendants, Cosmair, Maybelline, and Maybelline Sales, asserted a counterclaim seeking a declaratory judgment that the '7 patent is invalid and they have not infringed nor induced infringement.

FN1. Cosmair Canada, Inc. has since been dismissed as a defendant. D.I. 24.

Revlon's composition claimed under the '7 patent "provides improved transfer resistance as compared with conventional lipstick." D.I. 61, at 4. According to Revlon, this result is achieved by combining a "volatile solvent" and a "silicone ester wax." *Id.* Before the Court is the parties' dispute over construction of the terms "silicone ester wax" and "transfer resistance" as used in the patent. Defendants also have filed motions to amend by supplemental response their responses to Revlon's first set of requests for admissions. *See* D.I. 96.FN2

FN2. Revlon has moved pursuant to D.Del. LR 7.1.2(c) to submit a rebuttal memorandum following post-Markman hearing briefing. D.I. 152. Defendants opposed this submission, or, in the alternative requested permission to file their own rebuttal brief. D.I. 155.

In support of its motion to file a rebuttal brief, Revlon argues "new evidence" was submitted by defendants in their reply brief. The so-called new evidence is not relevant and will not be discussed in the Court's opinion. Second, Revlon asserts defendants adopted a "new position" in their reply brief. The "new position" is not really new, as it was presented in defendant's opening post-Markman hearing submission. Third, enough trees have already been destroyed in pursuit of the correct construction of "silicone ester wax." Therefore Revlon's motion is denied.

I. CLAIM CONSTRUCTION

In its complaint, Revlon alleges defendants violated 35 U.S.C. s. 271, which prohibits patent infringement. Patents give inventors "the right to exclude others from making, using, offering for sale, selling, or importing the patented invention[.]" *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, ----, 116 S.Ct. 1384, 1387, 134 L.Ed.2d 577 (1996) (quoting H. Schwartz, *Patent Law and Practice* 1, 33 (2d ed. 1995)). "It has long been understood that a patent must describe the exact scope of an invention and its manufacture to 'secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to them.'" *Id.* (quoting *McClain v. Ortmayer*, 141 U.S. 419, 424, 12 S.Ct. 76, 77-78, 35 L.Ed. 800 (1891)). Two parts of a patent document are relevant to analysis of the exact scope of a patented invention: the specification and the claim. *Id.* The specification "describ[es] the invention 'in such full, clear, concise, and exact terms as to enable any person skilled in the art ... to make and use the same.'" *Id.* at ---- - ----, 116 S.Ct. at 1387-88 (quoting 35 U.S.C. s. 112). The claims "particularly poin[t] out and distinctly clai[m] the subject matter which the applicant regards as his invention." *Id.* (quoting 35 U.S.C. s. 112).

Claim construction, or, in other words, the process of interpreting the terms contained in a patent claim, is within the province of a court as opposed to a jury. *Markman*, 517 U.S. at ----, 116 S.Ct. at 1387. In construing the claims, a court is first to look at the patent claims, specification, and prosecution history; in other words, the "intrinsic evidence." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). The words of the claim are to be given their "ordinary and customary meaning" unless a special definition "is clearly stated in the patent specification or file history.... The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." *Id.* The definition in the specification must be such that those of "ordinary skill in the art" may understand and use it. *Id.* The specification "is the single best guide to the meaning of a disputed term." *Id.* Similarly, the patent prosecution history is "often of critical significance in determining the meaning of the claims," especially with reference to representations made therein by the applicant concerning the scope of the

claims. *Id.*

If a court is able to discern the meaning of a patent's claims after considering these three sources of intrinsic evidence, it should not look further to expert testimony or other evidence not part of the public record to interpret the patent claims at issue. *Id.* at 1583. These non-public sources of information are considered "extrinsic evidence." *Id.* If possible, a court is to avoid extrinsic evidence and limit itself to what other members of the public can discern about the meaning of the claims because

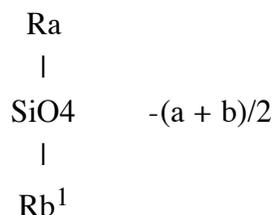
competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention.... Allowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right meaningless.

Id. The Federal Circuit has made special note, however, that one category of extrinsic evidence is more favored than others. Technical treatises and dictionaries may be consulted by a court in conjunction with the public record in order to understand the underlying technology of a claim, as well as construe a claim, so long as these sources do not contradict anything in the patent documents. *Id.* at 1584 n. 6.

II. SILICONE ESTER WAX

[1] In accordance with these principles, the Court is called upon to construe the meaning of "silicone ester wax" as found in the "7 patent. Specifically, as found in claims 1 and 16, a composition is claimed comprising:

0.1-15% of a **silicone ester wax** comprising moieties of the general formula:



Wherein R is hydrogen or methyl, R¹ is a carboxylic ester containing radical having 12 or more carbon atoms and comprising a carboxylic acid moiety esterified with an aliphatic alcohol moiety, a is an integer of 0 to 3 inclusive, b is an integer from 1 to 3 inclusive, and the sum of a + b has an average value of from about 1.0 to 3.0 with the proviso that there is present at least one R¹ radical.

"7 patent, Col. 7, lines 31-45; Col. 8, lines 43-50 (emphasis added) FN3.

FN3. This formula will be referred to as the "chemical formula." Claim 33 recites a chemical formula which differs only lightly. Col. 10, lines 12-29. The differences are not relevant to the issue of claim construction put before the Court. Therefore claims 1, 16 and 33 will be analyzed as a group. The remainder of the claims are dependant on claims 1, 16 and 33.

Revlon asserts the ordinary and customary meaning of the term silicone ester wax "includes silicone polymers with attached ester groups and waxlike physical properties including linear silicone esters." Transcript of Markman Hearing ("Transcript") at 51. Defendants on the other hand urge "the term silicone ester wax as understood by those who have read the patent specification means that silicone ester wax is a resin and does not include linear silicone esters." *Id.*

The parties agree one of ordinary skill in the art has the following background: (1) a Bachelor's Degree, (2) a Master's Degree in Chemistry (3) three to five years experience developing makeup products, and (4) possible attendance of specialty courses in makeup formulation. *Id.* Thus the task before the Court is whether one with such experience would interpret the claims of the '7 patent to cover linear silicone ester waxes.

The significance of whether the claims include linear silicone esters—the crux of the dispute between the parties—is as follows. The product used by defendants L'Oreal and Cosmair in their allegedly infringing lipsticks is "behenic ester dimethicone." Transcript at 11. Defendants admit behenic ester dimethicone is a silicone ester, but note it has a "linear" chemical structure. *Id.* at 13. Defendants assert there is a distinction between a linear chemical structure and one that is "branched." Defendants argue Revlon's '7 patent would be read by one of ordinary skill in the art only to claim silicone esters that are branched as opposed to linear.FN4

FN4. Although defendants originally asserted Revlon's claimed silicone ester waxes were cyclic, *see* D.I. 93, at 2, at the hearing on claim construction they urged Revlon's claimed silicone ester waxes were in fact branched. In a cyclic silicone structure, a sequence of silicones would form a circle. Transcript at 37; D.I. 139, at 5. The parties disagreed as to whether a cyclic structure was limited to one circle or multiple circles within the structure. *See* Transcript at 55-56. The resolution of that disagreement is not necessary to the Court's decision on claim construction. The Court considers defendants' position to be Revlon's claim did not cover silicone ester waxes with linear chemical structures.

A. The Claim Language

As required by the Federal Circuit, construction of the term "silicone ester wax" begins with an examination of the words of the claim. *See Vitronics*, 90 F.3d at 1582. The word "wax" does not illuminate the question of whether Revlon's silicone ester waxes could have a linear chemical structure. Defendants preferred not to use the word "wax", finding it confusing; plaintiff asserted that "wax" described the substance's physical properties as opposed to chemical structure.FN5 Transcript at 7-8, 68. Further, according to the parties' Stipulated Glossary of Terms, an "ester" is "a functional derivative of carboxylic acid in which the -OH of the carboxyl group has been replaced by -OR¹. The structure is RCO-OR¹ where RCO- represents the carboxylic acid radical and where -OR¹ is the alcohol residue." D.I. 95, at 1-2. Nothing in that definition helps the Court determine whether the chemical structure of the silicone ester waxes is to be considered linear, branched, both, or neither. Finally, the parties do not seem to dispute that silicone is merely the combination of a silicon atom and an oxygen atom, *see* Transcript at 11, 65, but that does not inform the Court's decision either. In summary, the Court finds nothing easily discernable about the words silicone ester wax to aid in determining the chemical structure of the resulting compound.

FN5. In post- Markman hearing briefing, defendants assert Revlon's use of the word "wax" in the claim is inconsistent with the use of the word "resin" in the specification. According to defendants, wax is a solid at room temperature while Revlon's '7 patent specification's use of the word resin indicates the silicone esters can be liquids. *See* D.I. 142, at 2-3. This argument is not materially different than defendants' main argument in this case, that is, that the use of the word "resin" in the '7 patent specification defines the claimed silicone ester wax.

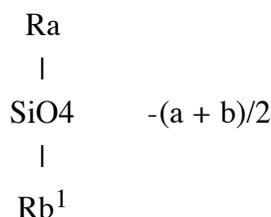
The chemical formula found in the claim represents another possible source of information as to whether the structure of this silicone ester wax can only be branched, or if it can be linear as well. In this determination, the Court, lacking the necessary background in polymer chemistry, relies in part on "extrinsic evidence," specifically, expert testimony presented at the Markman hearing. In evaluating conflicting expert testimony

the Court considers not only the spoken word but also non-verbal testimony. Non-exhaustive examples of non-verbal testimony are: the witnesses' body language, the inability to maintain eye contact, the long pause following a question challenging the expert's opinion where it is apparent the delay was not caused by the content of the ensuing answer, or the tone of voice or facial expression that indicates the expert is not convinced by his or her own testimony. The Court evaluates conflicting experts' testimony based on which spoken word makes more sense combined with some or all of the nontranscribable events described above.

After reviewing the prosecution history and the expert testimony, the Court is persuaded the chemical formula depicted in claims 1, 16 and 33 does not indicate the silicone ester waxes are limited to compounds with branched chemical structures. As explained by defendant's expert, Professor James McGrath, silicon atoms have a valence of four, requiring the formation of four bonds to other atoms. Transcript at 152. If one or two of those four silicon bonds is connected to an oxygen atom, the result is likely to be a linear polymer. *Id.* If three or four of the silicon's bonds are connected to oxygen atoms, however, the result can be a branched polymer. *Id.* At its most basic level, the question is whether the chemical formula in claims 1, 16, and 33 could define a silicone ester wax in which only one or two of the silicon's four bonds is connected to an oxygen.

Once again, the information given in the claims to interpret the formula is:

0.1-1.5% of a silicone ester wax comprising moieties of the general formula:



Wherein R is hydrogen or methyl, R¹ is a carboxylic ester containing radical having 12 or more carbon atoms and comprising a carboxylic acid moiety esterified with an aliphatic alcohol moiety, a is an integer of 0 to 3 inclusive, b is an integer from 1 to 3 inclusive, and the sum of a + b has an average value of from about 1.0 to 3.0 with the proviso that there is present at least one R¹ radical.

A moiety, according to Webster's Third International Dictionary, is either "one of two equal portions of a whole" or, "one of the portions into which something is divided; component, part." The Court accepts the parties' positions in this context a moiety is a component-not necessarily an equal half-of the whole. *See* Transcript at 11; D.I. 141, at 5 n. 2.

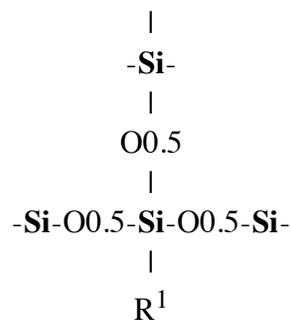
It will be recalled the silicon must have four bonds to other atoms. The value given to "a" in the above formula signifies how many R groups will be bonded to the silicon. The explanation following the formula indicates there can be between zero and three R groups bonded to the silicon. The value given to "b" signifies how many R¹ groups are bonded to the silicon. It is indicated there will be between one and three R¹ groups bonded to the silicon. Depending on the value assigned to "a" and to "b", with the caveat that there always will be one "b", the result of the mathematical equation connected to the O, "[4 - (a + b)]/2," controls how many oxygen bonds there will be.FN6

FN6. If read literally, the mathematical equation means $4 - [(a + b)/2]$. However, that literal reading may lead to results which are absurd because the silicon atom only has four valences. Stated differently, if a = 1 and b = 1, the result of the equation is 3 1/2-meaning 3 1/2 oxygens are to be bonded to the silicon. This is impossible because if a = 1 and b = 1, the silicon atom has only *two* remaining valences for the formation of two more bonds. Formation of 3 1/2 bonds, i.e., a value greater than two, is thus chemically impossible.

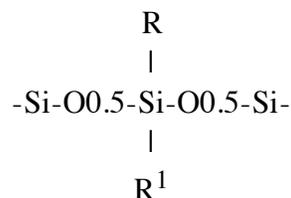
Revlon used the mathematically correct equation in the specifications. *See* Col. 2, lines 32-37. Moreover, Revlon consistently used this impossible equation in its prosecution history, although it was apparent it actually meant the entire $[4 - (a + b)]$ to be divided by 2, leading to results that are not impossible. *See* Defendants' Markman Hearing Exhibit 44 ("Exh. 44") at 73-75. With that in mind, the equation $4 - (a + b)/2$ will be considered a hasty shorthand for the equation $[4 - (a + b)]/2$.

Contrary to what might be expected, the equation is not an impossibility if the mathematical equation results in a fraction of a whole number. This is because 0.5 of an oxygen atom can be bonded to one silicon if the other 0.5 is bonded to another silicon. In other words, one oxygen can be shared by two silicons, resulting in the following chemical equation: Si-O-Si.

Accordingly, if $a=0$ and $b=1$, there will be 1.5 oxygen atoms bonded to the silicon atom, leading to a silicone ester wax that is likely to be branched because three oxygen atoms are bonded to a silicon atom. As is demonstrated by the figure below, the presence of the third oxygen bonded to another silicon creates two axes of silicon atoms—one horizontal and one vertical—giving rise to the "branched" structure:



On the other hand, if $a = 1$ and $b = 1$, which is clearly possible under the formula, only one oxygen atom remains to be bonded to the silicon, and the resulting silicone ester wax has only a horizontal axis along which the silicons can be found. Thus, the structure would be considered linear:



This compound would likely possess a linear chemical structure, because as explained above, at least three oxygen atoms are needed to form branches. FN7

FN7. The deposition testimony of Bianca Thayer, the developer of these silicone ester waxes, is seemingly contradictory. Although she agrees a branched formula usually contains more than two oxygens, she also says if $a = 1$ and $b = 1$, the result is branched. It appears there were follow-up questions which possibly clarified this testimony; unfortunately those pages of the deposition were not included in the record before the Court. *See* D.I. 140, Exh. I.

A patent examiner requested Revlon map out all the possible combinations of the formula, giving "a" and "b" their range of possible values. *See* Exh. 44, at 73-75. Revlon's response, consistent with what has been explained above, indicates that when $a = 1$ and $b = 1$, only two bonds remain to be connected to oxygen atoms. *Id.* As the Court understands the expert testimony, the resulting silicone ester wax will possess a

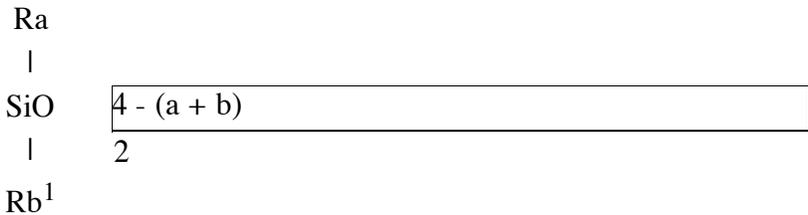
linear structure. This is true when a = 0 and b = 2 as well. *Id.* Therefore the Court does not find anything in the chemical equation contained in the claims 1, 16 and 33 indicating Revlon's patent only covers silicone ester waxes with branched structures as opposed to linear ones.

B. The Specifications

Having decided there is nothing in the words "silicone ester wax" or in the chemical formula in the claim that necessarily limits Revlon's claim to a non-linear chemical structure, the focus of the inquiry becomes the specifications. It is here defendants vigorously assert the use of the word "resin" in conjunction with silicone ester wax would indicate to one skilled in the art that Revlon's patent only claimed a branched, as opposed to linear, compound. *See* Col. 1, line 41; Col. 2, line 28. Defendants also argue both preferred embodiments of the silicone ester waxes contained in the specifications are branched, thus adding to their belief one skilled in the art would believe Revlon's patent only covered silicone ester waxes with branched structures. *See* Col. 2, line 49-Col. 3, line 10.

i. Resin

The focus of defendants' "resin" argument is language found in Column 2, lines 28-31, of the "7 patent. It is stated: The silicone resins used in the composition of the invention of the invention are silicone ester waxes comprising moieties of the general formula:



Wherein R is hydrogen or methyl, R¹ is a carboxylic ester containing radical having 12 or more carbon atoms and comprising a carboxylic acid moiety esterified with an aliphatic alcohol moiety, a is an integer of 0 to 3 inclusive, b is an integer from 1 to 3 inclusive, and the sum of a + b has an average value of from about 1.0 to 3.0 with the proviso that there is present at least one R¹ radical.FN8

FN8. The mathematical equation is set out correctly here, as opposed to the claim. *See supra* note 6.

Defendants assert this sentence means the silicone ester waxes are defined as, or limited to, certain silicone resins. And, according to defendants, the word resin has a meaning in the world of chemistry that denotes a branched chemical compound. Defendants then reason the use of "resin" would inform one of ordinary skill in the art that the structure of the silicone ester wax claimed in the "7 patent is not linear. Revlon on the other hand, argues the word resin as read by cosmetic chemists merely refers to certain physical properties of the compound and not any particular chemical structure. Once again lacking expertise on this subject, the Court is forced to rely on extrinsic evidence.

Defendants have put sufficient evidence in the record to support their proposition that distinctions exist in the field of chemistry between linear and resinous compounds, wherein resinous compounds are branched. Defendants' expert Professor McGrath testified to this.FN9 Transcript at 170-71. The linear-resinous distinction can be found in the patent literature as well. *See* D.I. 101, Exh. 14 ("Thimineur patent"). Moreover, defendants proffered deposition testimony to the same effect. *See* D.I. 142, Exh. E, at 63 (deposition of Myriam Mellul, head of L'Oreal's cosmetic research laboratory).

FN9. Professor McGrath was offered as an expert in silicon polymer chemistry. He is a professor of

chemistry at Virginia Polytechnic Institute and State University, and directs a center on polymeric adhesives and composites there. He has a Masters Degree in Chemistry and a Ph.D. in Polymer Science. Transcript at 145; 148.

The position advanced by defendants is similar to that of an examiner in the European Patent Office, who, with regard to Revlon's patent for transfer resistant lipstick filed there, stated:

It should be mentioned ... the silicone esters of the invention are always referred to in the description as filed as silicone resins, which implies a branched structure, preferably selected from the resinous silicone ester waxes described [within] ... [A] skilled person would be unable to decide from the contradictory information given what characteristics should have the silicone esters of the invention (solid or not, resinous or not).

Defendants' Markman Hearing Exh. 43.

Yet there is ample support for Revlon's position as well. Revlon's expert, Dr. Robert Lochhead testified the term resin is "a broad and probably an indefinite term. If I think of a resin, I think of everything from something like a-the sticky liquid you get from Christmas trees, all the way up to plastic. That would be the general definition, or definition of a resin, where you define it by physical properties." Transcript at 84.FN10 Dr. Lochhead posited a possible explanation for the discrepancy between his testimony and the testimony of Professor McGrath:

FN10. Dr. Lochhead was offered as an expert in cosmetic chemistry and silicon chemistry. He is the Chair of the Department of Polymer Science at the University of Southern Mississippi. He has a Bachelor's Degree in pure chemistry and a Ph.D. in polymer solution. Transcript at 60-61; 63.

[W]hen silicone chemists started to try to get resinous properties, and the way to get resinous properties was to take the SIO [sic] unit and create branching, and that gives you the resinous, the properties that you normally associate with a resin. Now we know that those physical properties can be achieved by other means.... The term specifically in silicone chemistry, resinous began to mean branch compounds.... Cosmetic chemists would not normally think of the structure that way.

Transcript at 100.FN11

FN11. As admitted at the Markman hearing, defendants' expert Professor McGrath does not work in the cosmetics industry, and thus may be considered in the category of silicon chemists referred to by Dr. Lochhead. *See* Transcript at 149-152. It is possible Professor McGrath does not meet the stipulated definition of one of ordinary skill in the art, as he does not have 3-5 years experience developing makeup. Although the Court is not inclined to entirely disregard Professor McGrath's testimony, Dr. Lochhead's testimony as to the word resin, as understood by one skilled in the art, was left largely rebutted.

Dr. Lochhead's explanation of the discrepancy is corroborated by the definition of a resin in a chemical dictionary. The general definition states:

Flammable, amorphous, vegetable products of secretion or disintegration, usually formed in special cavities of plants.... They are the oxidation or polymerization products of the terpenes, and are mixtures of aromatic acids and esters.

J. Grant, Hackh's Chemical Dictionary 578 (4th ed. 1969).

Within that definition is included a definition of "synthetic" resins, where it is stated:

A heterogeneous group of compounds produced synthetically from simpler compounds by polymerization and/or condensation.... *The term was originally used to describe such synthetic substances having the properties of resin, but is now used in a wider sense.*

Id. at 579 (emphasis added).

Dr. Lochhead's testimony that the word resin merely describes physical properties is corroborated by deposition testimony. *See* D.I. 140, Exh. D, at 100 (deposition of Jean-Claude Ser, formerly head of L'Oreal's Formulation Laboratory); D.I. 141, Exh. A, at 304 (deposition of Terry Jacks, formerly a Maybelline cosmetic chemist). Moreover, the record contains evidence of patent literature in which the term resin is used as a description of physical properties. *See* Defendants' Markman Hearing Exh. 19 (Mellul patent) (describing "three classes of silicones (oils, waxes, and resins) ...").

Finally, even defendants have stated: "defendants have never contested that the term resin may include linear compounds, but have consistently stated that the term 'silicone ester wax' as used in the '7 patent refers to a non-linear (cyclic) silicone resin compound." D.I. 128, at 10 (reply memorandum in support of defendants' motion to amend by supplemental responses their responses to plaintiff's requests for admissions).

On balance then, both parties have advanced credible evidence their definition of resin is accepted in the chemical community.FN12 The Court's opinion that Revlon's position is correct is, in the end, derived from accepting the testimony of Dr. Lochhead over that of Dr. McGrath in this critical area. Further, aided by the experts' testimony, the Court concludes the internal structure and language of the patent favors Revlon's position. *See* Markman, 517 U.S. at ----, 116 S.Ct. at 1395 (indicating preference for a construction comporting with patent's internal "logic" and "coherence").

FN12. U.S. Patent No. 7,725,685 (the "Thayer patent") was the first patent involving silicone ester wax. This patent contains language that is helpful to both parties. It states: "Those of ordinary skill in the art will appreciate that the siloxane chain [comprising the silicone ester wax] can be substantially linear or resinous (i.e. highly branched)." Defendants' Markman Hearing Exh. 30. This language supports defendants' position that a distinction exists between a linear compound and one that is resinous, or branched. However, the passage also lends strong support to plaintiff's position that silicone ester wax, as it was viewed originally, could have either a linear or branched structure.

In so finding, the Court is unable to adopt defendants' interpretation of that crucial sentence found in the specification: "The silicone resins used in the composition of the invention are silicone ester waxes comprising moieties of the general formula...." '7 patent, Col. 2, lines 28-31. Defendants urge this means the silicone resins are a subset of silicone ester waxes. Close study of the patent leads to the conclusion, in fact, the term silicone resin is used in a broad sense, and defined as certain silicone ester waxes.

The patent begins with a "Summary of the Invention," Col. 1, line 36. In that summary, Revlon indicates the claimed composition comprises: a) 1-70% of a volatile solvent; b) 0.1-15% silicone resin; c) 10-45% wax; d) 5-50% powder; e) 1-30% oil. *See* Col. 1, lines 40-45. Significantly, the other components of the composition are all described here by their physical properties, as opposed to their chemical structures. Therefore, Revlon's assertion that "silicone resin" refers to the component's physical properties is consistent with how the patent defines all of the components of the invention.

Following the Summary of Invention is a "Detailed Description," describing and defining each component of the summary. Col. 1, line 50-Col. 4, line 51. For example, in the first paragraph of the description, the terms "volatile" and "volatile solvents" are defined and described. Col. 1, line 51-Col. 2, line 27. It is the second paragraph that begins: "The silicone resins used in the composition of the invention of the invention are silicone ester waxes comprising moieties of the general formula...." *See* Col. 2, lines 28-31. The third paragraph describes "the waxes or wax-like materials" and the next paragraph begins, "The powder component of the invention can be generally defined...." Col. 3, lines 12, 20. Given that each paragraph is devoted to defining a component of the original Summary of the Invention, it is likely that silicone resins are defined as certain silicone ester waxes, instead of vice versa.

ii. Preferred Embodiments

The Court also cannot agree with defendants' further contention that because both preferred embodiments contained in the specifications employ silicone ester waxes which are branched, the patent does not cover linear structures. *See* Col. 2, line 49-Col. 3, line 10. Examples given in a patent specification do not necessarily limit the claims. *Ekchian v. The Home Depot, Inc.*, 104 F.3d 1299, 1302-03 (Fed.Cir.1997). As noted above, the "7 claim itself does not in any way limit the silicone ester waxes to those that are non-linear.

Although not dispositive, the Revlon patent does contain the following language introducing its claims: "While the invention has been described in connection with the preferred embodiment, it is not intended to limit the scope of the invention to the particular form set forth, but, on the contrary, it is intended to cover such alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims." Col. 7, lines 17-23. The preferred embodiments do not act as limitations on the claim.

Defendants also argue the preferred embodiments are impossible under the chemical formula found in the claims, as interpreted by Revlon. If true, Revlon's claim construction would almost certainly be wrong. *See Vitronics*, 90 F.3d at 1583 (noting if the claim, as interpreted, does not cover the preferred embodiments, construction not likely to be considered correct). Defendants' argument is based on the fact the preferred embodiments of the silicone ester waxes both contain units where all four of the silicon's bonds are connected to oxygens. Such units are called "Q units" by chemists. Transcript at 152-53. These Q units *are* impossible under the chemical formula contained in the "7 claims because of the requirement that at least one R¹ be bonded to the silicon. If one R¹ is present, there is not room to bond four oxygen atoms to the silicon.

Defendants' argument ignores the language of the claims, however, which state the silicone ester wax "compris[es] moieties" of the general chemical formula. As noted above, the word moiety refers to a component of a whole, indicating there may be other units in the composition. Similarly, the word "comprising" or "comprises" indicates the silicone ester wax may contain other units in addition to units of the general chemical formula. *FN13 Azoplate Corp. v. Silverlith, Inc.*, 367 F.Supp. 711, 732 (D.Del.1973), *aff'd* 506 F.2d 1050 (3d Cir.1974), *cert. denied*, 421 U.S. 914, 95 S.Ct. 1572, 43 L.Ed.2d 780 (1975); *see also Exxon Chemical Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed.Cir.1995), *cert. denied* 518 U.S. 1020, 116 S.Ct. 2554, 135 L.Ed.2d 1073 (1996) ("The claimed composition is defined as comprising-meaning containing at least-five specific ingredients").

FN13. In post- Markman hearing submissions, defendants argued if the chemical equation found in the claims does cover the preferred embodiments, Revlon has impermissibly introduced "new matter" into the claim. This Court's opinion on claim construction will not address defendants' new matter argument, as the Court does not have the benefit of full briefing and oral argument on the subject.

C. The Patent Prosecution History

The patent prosecution history is relevant insofar as it documents the applicant's representations to the patent office concerning the scope of the claims. *Vitronics Corp.*, 90 F.3d at 1582. Revlon made an assertion as to the chemical structure of the silicone ester waxes used in its lipsticks that is consistent with its argument here that silicone ester waxes can include compounds with linear chemical structures. On December 15, 1992, in response to questions by the patent officer as to chemical structure of the silicone ester waxes, Revlon asserted: "The silicone resin doesn't have a cyclic formula.... U.S. Patent No. 4,725,658 to Thayer discloses and claims the silicone ester waxes used in the invention.... Thayer states that the siloxane chain in the silicone ester waxes is substantially linear or resinous...." Exh. 44, at 69. Although the Thayer patent clearly distinguished between linear and resinous structures, it also indicated silicone ester waxes could possess either type of structure. Thus Revlon's position in the patent prosecution history is consistent with its current position before the Court, that, by using the term silicone ester wax, it did not intend to limit its claim to a compound with a branched structure.FN14

FN14. In a later amendment, dated June 27, 1995, Revlon states, "It is ... clear from Applicant's disclosure as originally filed that the two preferred silicone ester waxes set forth in their examples [in the patent specification] are both 'siloxo silicates.' That is an art-recognized term referring to a 'branched resinous siloxane structure ... surrounded by ester functionality.' " Exh. 44, at 214. This statement does not compel a different result, however, because the preferred embodiment does not limit the claims in this case. *See supra*, pp. 395-99.

D. Conclusion

After analysis of the claims, specification and prosecution history of the "7 patent, as well as the expert testimony presented at the Markman hearing, the Court finds the term "silicone ester wax" in the patent claims includes substances with linear chemical structures. The Court, recognizing its responsibility to independently construe the claim under *Exxon Chemical Patents, Inc.*, 64 F.3d 1553, believes Revlon's proffered definition is correct. Accordingly silicone ester waxes are "silicone polymers with attached ester groups and waxlike physical properties including linear silicone esters."

III. TRANSFER RESISTANCE

[2] The parties next present the term "transfer resistance" for claim construction. The term is used in claims 1, 16, and 33, and, by reference, in the dependent claims. Claim 1 covers: "[a] cosmetic composition exhibiting improved transfer resistance...." Col. 7, lines 24-25. Claim 16 covers: "[a] lipstick composition having improved transfer resistance...." Col. 8, lines 36-37. Claim 33 covers: "[a] lipstick composition exhibiting improved transfer resistance...." Col. 10, lines 9-10. Revlon urges the term is defined by reference to a specific "kiss test" as set forth in the specification. Transcript at 51. The following passage from the specification is the basis for Revlon's position:

The term "transfer resistance" means that when the cosmetic composition is applied to skin or lips it exhibits from 10-100%, preferably 30-100% improvement in transfer resistance when compared with a standard lipstick formulation and as measured by the Kiss test of Example 4.

"7 patent, Col. 4, lines 44-48.

That passage is followed by four examples, "set forth for the purposes of illustration only" in which three examples describe lipsticks and one example describes eye shadow, blush and concealer. Col. 4, lines 49-51. Example 4 refers to a lipstick. Col. 6, line 35-Col. 7, line 1. The kiss test found in Example 4 asked

participants to apply the lipstick composition of the '7 patent, wait five minutes, and then kiss their hands. Col. 6, lines 66-67. Participants were then asked how many thought the lipstick "left hardly a trace" of color on their hand. Col. 6, line 66-Col. 7, line 1. The results indicated more participants thought the lipstick covered by the '7 patent left hardly a trace, when compared with Revlon's "traditional" (i.e. non-transfer resistant) Moondrops lipstick. Col. 7, lines 5-7.

Defendants assert transfer resistance "should be defined as not merely the specific kiss test that you find in Column 4 of the patent but includes the tendency of a cosmetic not to transfer to some other surface such as glassware, silverware, clothing, et cetera, as the patent itself specifies in Column 1." Transcript at 57. Column 1, lines 23-34, of the '7 patent states:

One of the long standing problems with makeup, particularly lipstick, is the tendency of the cosmetic to blot or transfer from the skin onto other surfaces such as glassware, silverware, clothing, etc.... The object of the invention is to formulate a cosmetic composition for application to skin or lips which exhibits superior transfer resistance when compared with traditional makeup formulation.FN15

FN15. The fact that when testing for transfer resistance Revlon performed the kiss test as well as a test to see if the lipstick blotted onto a tissue is not strong evidence for either side's position. Testing the transfer resistance to a tissue may, or may not, have been meant to measure transfer resistance to the other objects noted above, clothes, glassware and silverware. *See* Defendants' Markman Hearing Exhs. 11, 12.

Revlon correctly asserts its definition of "transfer resistance" in the specification is important evidence of its meaning. As noted by the Federal Circuit:

Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.

Vitronics Corp., 90 F.3d at 1582.

On the other hand, courts are not required to disregard common sense. Nor will this Court accept a construction that is inconsistent with the patent's internal logic. *See* *Markman*, 517 U.S. at ----, 116 S.Ct. at 1395 (indicating preference for a construction comporting with patent's internal "logic" and "coherence").

As noted above, some claims in the '7 patent refer specifically to lipsticks, while Claim 1 of Revlon's patent refers to a "cosmetic composition." *See* Col. 7, lines 24-25; Col. 8, lines 36-37. Moreover, the examples contained in the specification include formulations of eye shadow, blush and concealer. *See* Example 3, Col. 5, line 55-Col. 6, line 33. This leads to the ineluctable and insofar as is now uncontested conclusion that Revlon's '7 patent covers makeup other than lipstick. It is illogical then to measure "transfer resistance" as used in this patent with reference to a "kiss test" because it is illogical to conclude the kiss test was intended to measure the transfer resistance of eye shadow, blush and concealer. In fact the specification limits the kiss test to lipstick. *See* Col. 6, line 66. "Transfer resistance" also must be measured in ways meaningful to eye shadow, blush and concealer.FN16 The patent explains the general problem with makeup is its tendency to transfer to "surfaces such as glassware, silverware, clothing etc." Col. 1, lines 26-27. Accordingly, the Court adopts defendants' position transfer resistance means the tendency of a cosmetic not to transfer to other surfaces, including skin, clothing, glassware and silverware.

FN16. The Court has considered using different definitions for transfer resistance depending on the context in which the term is used. However, this is undesirable in light of the need for consistent use of terms within a patent.

Wherein R is hydrogen or methyl, R¹ is a carboxylic ester containing radical having 12 or more carbon atoms and comprising a carboxylic acid moiety esterified with an aliphatic alcohol moiety, a is an integer of 0 to 3 inclusive, b is an integer from 1 to 3 inclusive, and the sum of a + b has an average value of from about 1.0 to 3.0 with the proviso that there is present at least one R¹ radical."

See D.I. 97, Exh. 20. Now Maybelline wishes to add the following statement to each admission:

It is admitted that Great Lip Color ... utilized a liquid silicone ester having the formula set forth above. However, it is denied that the compound is a silicone ester wax as that term is common [sic] understood by those skilled in the art and the innovator General Electric.

Id.

The Maybelline defendants assert they were confused about the term "wax" and therefore admitted the silicone ester in Great Lip Color was a wax even though they now believe the admission is not accurate. *Id.* at 5. Maybelline explains:

This amendment does not alter the essential substance of Maybelline's admissions. Maybelline does admit that Great Lip Cover [sic] was manufactured ... using the formula stated in Plaintiffs Request for Admission No. 24 to which Maybelline has previously admitted. Maybelline simply denies that the compound is a silicone ester wax as that term is commonly understood by those skilled in the art.

Id. at 6.

Maybelline urges amendment will subserve presentation of the merits by clearing up the confusion about the word "wax." *Id.* At oral argument, defense counsel stated:

The reason we want to amend this is so that we do not have a lot of confusion before the jury because a substantial amount of the most relevant prior art is to resins; and the use of the term wax does not appear there because many of those resins are similarly a liquid.... We request that ability simply to avoid confusion before the jury.

Transcript at 18.

Because they are not denying their product contained the same formula as covered in the "7 patent, defendants argue Revlon is not prejudiced by the amendment. D.I. 97, at 6. If the Court were to allow the amendment, Revlon will not be forced to spend time and energy proving that aspect of its case. *Id.* at 7.

Revlon argues the amendment should not be granted, particularly if Maybelline still in essence admits their compound contained a silicone ester wax within the meaning of the "7 patent. D.I. 124, at 10. The amendment therefore goes to an irrelevant point, Revlon believes. Transcript at 31-32. Further, Revlon notes, defendants have not explained their "confusion" in a way indicating this late amendment should be granted. D.I. 124, at 11. Revlon points out defendants answered these requests for admission only after considerable time for reflection; they requested and obtained an extension of time beyond what ordinarily is permitted before responding. *Id.* at 3.

Revlon's point that defendants' amendment goes to an irrelevant point is well taken. Revlon has defined the term "silicone ester wax" in its claims and its specifications always with reference to the chemical formula. See "7 patent, Col. 2, lines 28-47; Col. 7, lines 31-45; Col. 8, lines 43-58; Col. 10, lines 12-29. Thus, given Revlon's privilege to become its own "lexicographer," it may use terms in a way inconsistent with their ordinary meaning, provided it clearly defines them in the patent claims and specifications. *Vitronics*, 90 F.3d at 1582. In that sense, the definition of the term by one of ordinary skill in the art *is* irrelevant.

Moreover, Maybelline has failed to satisfy the Court that amendment will subserve the presentation of the merits. The only explanation given by Maybelline in support of its contention the term "wax" is the sentence: "Maybelline was confused by the term 'wax' which could mean true waxes or other wax-like substances." D.I. 97, at 5. Maybelline further bolsters its position by quoting from Revlon's Australian patent application a passage indicating the term "wax" is confusing:

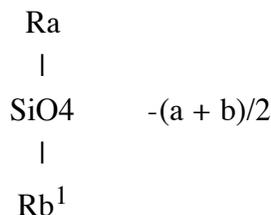
The general use of the term "wax" has been deleted from the description and claims. The reason for this is that the term "wax" can be used to refer to true waxes (e.g. beeswax) and also to other solid non-greasy, insoluble substances (e.g. isostearyl trimethylolpropane siloxy silicate and lauryl trimethylolpropane siloxy silicate). However, as at STP these other substances are liquids, the use of the term wax can be confusing. Accordingly, it is preferable to delete this term to avoid such confusion.

Id. at 5-6.

Without a doubt jury confusion is a valid concern. What is unclear, at least to the Court, is whether Maybelline's supplemental response will result in less confusion or, in fact, lead to more confusion. Maybelline has admitted its Great Lip Color contained silicone ester wax as defined in Revlon's "7 patent. To open up the question of whether the silicone ester wax truly is a wax as understood by those skilled in the art would seem only to introduce confusion where none exists. If Maybelline has reasons beyond what is stated herein for wishing to amend, the Court was not privy to those reasons, and therefore does not feel compelled to grant Maybelline's motion. Moreover, discovery is now closed, *see* D.I. 118, 153, and Revlon would be prejudiced by the amendment. Maybelline's motion will therefore be denied.

C. L'Oreal's Motion to Amend its Admissions

Similar to Maybelline, the L'Oreal defendants also admitted Color Endure "comprises a silicone ester wax comprising moieties of the general formula:



Wherein R is hydrogen or methyl, R¹ is a carboxylic ester containing radical having 12 or more carbon atoms and comprising a carboxylic acid moiety esterified with an aliphatic alcohol moiety, a is an integer of 0 to 3 inclusive, b is an integer from 1 to 3 inclusive, and the sum of a + b has an average value of from about 1.0 to 3.0 with the proviso that there is present at least one R¹ radical."

D.I. 97, at Exh. 21.

The L'Oreal defendants wish to add to their admissions a statement:

It is admitted that Color Endure ... contained a linear silicone compound containing, among other things, the identified unit. However, the formula set forth above describes a compound containing a three-dimensional, cyclic silicone structure FN17, when read in combination with the "7 patent specification. Color Endure ... used a linear silicone compound. Thus, it is denied that Color Endure contained a silicone ester falling within the scope of the "7 patent claim.

FN17. As noted above, this does not appear to comport with defendants' current position, that Revlon's silicone ester wax is a branched compound. *See supra* n. 3.

Id.

L'Oreal asserts the reason for its amendment is, although it admitted Color Endure contained "the moiety identified" in Revlon's requests for admissions, it did not mean to admit it was using the same compound as claimed by the '7 patent. Id. at 7. L'Oreal urges the two are different; the '7 patent claims "a silicone resin compound while L'Oreal is a linear polysiloxane which is considered different from resins by those skilled in the art." Id. at 8.

Given the Court's result on claim construction of the term silicone ester wax in the '7 patent claims, as including silicone ester waxes with a linear chemical structure, L'Oreal's motion to amend should not be granted. L'Oreal cannot, in light of the Court's holding on claim construction, deny that Color Endure contained a silicone ester falling within the scope of the '7 patent claim merely because it is a linear structure. L'Oreal's motion will be denied.

D.Del.,1997.

Revlon Consumer Products Corp. v. L'Oreal S.A.

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