

United States District Court,
N.D. Illinois.

JOHNSON PRODUCTS CO,
INC. Plaintiff.

v.

PRO-LINE CORPORATION,
Defendant.

Oct. 5, 1998.

MEMORANDUM OPINION AND ORDER

PALLMEYER, Magistrate J.

Plaintiff Johnson Products Company ("Johnson Products") filed this patent infringement action against Defendant Pro-Line Corporation ("Pro-Line") on June 8, 1994. Johnson Products owns the two patents at issue in this lawsuit: U.S. Patent No. 4,175,572 (" '572 patent") and U.S. Patent No. 5,138,822 (" '822 patent"). Both patents relate to hair relaxers intended primarily for African-American hair care. Johnson Products claims that the chemical formulations of two hair relaxer kits developed and sold by Pro-Line, namely "Soft & Beautiful" and "Just for Me," both infringe the '572 and '822 patents. On July 29, 1994, Pro-Line filed an answer and counterclaim, seeking declaratory judgment of invalidity, unenforceability, and non-infringement of the patents. This case is before the court on consent of the parties.

Pro-Line now seeks summary judgment in its favor, arguing, in four separate motions, that Johnson Products' patents are invalid or alternatively, that Pro-Line has not infringed them. Resolution of these motions depends, in large part, on construction of the language of the claims in these patents based on the evidence heard by this court in a *Markman* hearing on March 17 and 18, 1998. *See* *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). For the reasons discussed below, the court concludes that Pro-Line has not demonstrated the absence of disputed factual issues. Accordingly, all four motions are denied.

FACTUAL BACKGROUND

A. Ethnic Consumer Market

Johnson Products FN1 and Pro-Line FN2 are competitors in the business of providing hair care and skin care products designed for the specialized needs of African-Americans, a business known as the ethnic consumer market. (Complaint para. para. 6-7.) Johnson Products formulates, manufactures, advertises, markets, and sells hair care and skin care products, cosmetics, and related goods intended for African-Americans. (Pro-Line's 12(M) Statement of Non-Infringement of the '572 Patent (hereinafter "Pro-Line's 12(M) of '572 Non-Infringement") para. 6.) Pro-Line is similarly involved in manufacturing and marketing hair care products for African-Americans. (*Id.* para. 7.)

FN1. Johnson Products is a Florida corporation having its principal place of business at 8522 South Lafayette Avenue, Chicago, Illinois 60620. (Complaint para. 1.)

FN2. Pro-Line is a Texas corporation having its principal place of business in Dallas, Texas 75212. (Answer para. 3.)

One of the most popular items on the ethnic consumer market is the hair relaxer or hair straightener, which relaxes and straightens curly or kinky hair. (Johnson Products' Statement of Additional Facts of Non-Infringement of the '572 patent (hereinafter "Johnson Products' 12(N)(3)(b) of '572 Non-Infringement") para. 3.) Like many other industries, the ethnic hair care market has made marked developments and advancements over the past century. An early version of hair relaxing involved use of a hot metal comb that was heated over a stove and combed through the hair to straighten it. (*Id.* para. 4.) The heat was so intense that users applied a petroleum jelly, like Vaseline, to their scalps to prevent burning. (*Id.*)

In 1958, Johnson Products offered the first chemical hair relaxer. (*Id.* para. 4.) The product, called "Ultra Sheen," contained lye or sodium hydroxide. It was used by hair care professionals who would first apply petroleum jelly to the customer's scalp to prevent burning and then apply the lye-based relaxer.

The next step was development of a relaxer with "no base," meaning that the petroleum jelly was built into the relaxer formula. In 1971, that type of "no-base" lye or sodium hydroxide hair relaxer became available on the retail market, allowing the general public to purchase relaxer kits directly from stores rather than relying solely on hairdressers for this service. ('572 patent, col. 1, Ins. 35-38.) Unfortunately, the lye or sodium hydroxide contained in the relaxers left the hair brittle and dry. ('572 patent, col. 1, Ins. 48-50.) Demand arose for a hair product that would protect and condition the hair during the straightening process ('572 patent, col. 1, Ins. 63-68)-a difficult task because sodium hydroxide inactivated the chemical properties of all known conditioners. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 7.) The challenge for the industry was to find a conditioner that could be mixed with sodium hydroxide while still maintaining its conditioning and protective features.

B. Johnson Products' '572 Patent and '822 Patent

Such a product was developed in 1977 by two researchers at Johnson Products, who filed an application for what became the '572 patent. In this patent, Johnson Products claimed a conditioner that conditioned the hair and protected the scalp even when used with a sodium hydroxide relaxing agent. (*Id.*) Johnson Products refers to the active ingredient in this conditioner as a "quaternary polymer," polydiallyldimethyl-ammonium chloride, known as DMDAAC. (*Id.*) In its motions for summary judgment of invalidity and non-infringement of the '572 patent, Pro-Line recognizes that the '572 patent requires a "quaternary polymer," but insists that the polymer called out by the patent is not one presently recognized as DMDAAC. (*See* Pro-Line's Reply Brief to Johnson Products' Brief in Response to Pro-Line's Motion for Summary Judgment on Non-Infringement of the '572 patent (hereinafter "Pro-Line's '572 Non-Infringement Reply"), at 3; Pro-Line's Summary Judgment Motion for Invalidity of the '572 Patent (hereinafter "Pro-Line's '572 Invalidity Motion"), at 4). As will be discussed below, the issue of whether the patent did, in fact, cover the composition called DMDAAC is probably the most disputed factual contention in this case.

The '572 patent explains that the "hair conditioning composition" under the patent could be applied "prior to the application of the relaxer, ... premixed with the relaxer and applied at the same time, or ... applied after application of the relaxer to the hair." ('572 patent, col. 3, line 65-col. 4, line 1.) The '572 patent contains three independent claims: claims 1, 9, and 10. Claims 1 and 9 address different versions of the hair conditioner combination while claim 10 goes to a combination of a hair conditioner and a straightening composition. Claim 1 of the '572 patent reads:

A hair conditioning composition for use under highly alkaline conditions comprising an aqueous dispersion containing from about 1 to about 20 weight percent mineral oil, from about 1 to about 20 weight percent a fatty alcohol having 12 to 18 carbon atoms, from about 1 to about 15 weight percent of a non-ionic emulsifier, and from about 0.05 to about 20 weight percent of a quaternary polymer having recurring units of the formula:

[graphic depiction not included.]

Claim 9 reads:

A hair conditioner composition for use under highly alkaline conditions comprising an aqueous dispersion containing about 5 weight percent of mineral oil, about 10 weight percent of cetyl alcohol, about 7 weight percent of Emulsifying Wax N.F., and about 4 weight percent of polydiallyldimethylammonium chloride.

Finally, claim 10 reads:

A composition for waving or straightening hair comprising an aqueous dispersion containing from about 1 to about 20 weight percent of mineral oil, from about 1 to about 20 weight percent of a fatty alcohol having 12 to 18 carbon atoms, from about 1 to about 15 weight percent of a non-ionic emulsifier, and from about 0.05 to about 20 weight percent of a quaternary polymer having recurring units of the formula:

[graphic depiction not included.]

From about 10 to about 30 weight percent of petrolatum, from about 1 to about 10 weight percent of a normal liquid polyhydroxycompound, and from about 1 to about 3 weight percent of a watersoluble alkaline caustic material, the composition having a pH between 12 and 13.

On November 27, 1979, the U.S. Patent & Trademark Office granted the '572 patent. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 10.) Shortly after the grant of the '572 patent, Johnson Products introduced two new products containing the conditioning composition with the relaxer creme, "Ultra Sheen Precise" and "General Treatment." (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 25.)

The next area of development in the ethnic hair care industry was creating a product that would texturize and strengthen hair after the straightening process. Johnson Products filed its application for what became the '822 patent on October 22, 1991 as a continuation of a prior Johnson Products patent, U.S. Patent No. 5,060, 860 (" '860 patent"), which also related to hair relaxers. The '822 patent was directed to texturing and strengthening compositions for use in hair before or after using a relaxer like sodium hydroxide or calcium hydroxide. ('822 patent, col. 6, Ins. 4-15.) The patent contains two independent claims: claims 1 and 12. Claim 1 reads:

An aqueous hair texturing and strengthening composition for application to hair about to undergo a highly alkaline hair straightening procedure comprising an aqueous nonacidic cosmetic vehicle having dispersed therein about 0.1 to about 8 weight percent on a total composition weight basis of at least one water-dispersible quaternary nitrogen-containing compound having at least one alkyl group directly or indirectly bonded to a quaternary nitrogen group, each said alkyl group containing about 3 to about 22 carbon atoms, each said compound being selected from the group consisting of (a) non-proteinaceous, non-polymeric quaternary nitrogen containing compounds which are in the salt form and which contain said alkyl group and (b) hydrolyzed proteins which are in the salt form wherein at least one amino group therein is quaternized to include said alkyl group, each said compound being characterized by having a positive charge and being stable when in an aqueous medium at a pH of at least about 6.1.

Claim 12 reads:

A method for straightening hair comprising the steps of:

- (a) first applying to the hair a composition of claim 1;
- (b) then applying to the resulting hair a highly alkaline hair straightener for a time sufficient to at least partially straighten said hair;
- (c) rinsing substantially all of said straightener from said so straightened hair; and
- (d) washing said so rinsed hair with a neutralizing shampoo having a neutral to acidic pH.

The '822 patent was granted on September 22, 1992. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 11.)

C. Pro-Line's Hair Relaxer Kits

In 1984 or 1985, Defendant Pro-Line developed its original "Soft & Beautiful" hair relaxer kit, which is aimed at African-American women consumers. (Pro-Line 12(M) of '572 Non-Infringement para. 8.) Pro-Line also sells a hair relaxer kit called "Just for Me," which is targeted at children. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 11.)

As part of an effort to respond to competition in the marketplace, Pro-Line, acting through its CEO and founder, Comer Cottrell, hired Tehsel Dhaliwal to head its research and development department in November 1992. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 12.) Dhaliwal had been working in the African-American hair care industry for approximately twenty-six years, fifteen of those years as an employee of Johnson Products. (Pro-Line's 12(M) of '572 Non-Infringement para. 10; Dhaliwal resume, Ex. 7 to Appendix to Johnson Products' Brief in Response to Pro-Line's Motions for Summary Judgment (hereinafter "Johnson Products' Response").) While at Johnson Products, he became familiar with the chemical formulations in the '572 patent. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 13; Dhaliwal Dep., at 124, Ex. 6 to Johnson Products' Response.)

At Pro-Line, Dhaliwal's work was directed at changing the process, improving the performance, and reformulating the "Just for Me" products. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 12.) Dhaliwal succeeded in developing new formulas; by April 1993, five months after beginning work at

Pro-Line, Dhaliwal signed off on final formulas for the new relaxer cremes and the pre-relaxer treatment for "Soft & Beautiful" and "Just for Me." (Id. para. 17; Dhaliwal Dep. at 62-63.) Significantly, Pro-Line has little documentation concerning its development of the new formulas. (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 16.) In fact, Karen O'Neal, current head of Research & Development at Pro-Line, testified that she did not know how Dhaliwal came up with the formulas. (O'Neal Dep., at 152-53, Ex. 12 to Johnson Products' Response.)

After the reformulations, Pro-Line renamed the "Soft & Beautiful" product "New Advanced System Soft & Beautiful." (Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 18.) The name of "Just for Me" remained the same. (Id.) Each kit included:

- (1) Pre-Relaxer Treatment, designed to "prevent overprocessing, repair split ends and strengthen damaged hair";
- (2) No-Lye Conditioning Relaxer Creme, designed to strengthen hair;
- (3) Liquid Activator, designed to generate or produce the straightening agent in the Relaxer Creme;
- (4) Neutralizing & Decalcifying Shampoo, designed to "clean and condition" the hair;
- (5) Leave-In Conditioner, designed to "improve the overall health of the hair with conditioners that contain vitamins A & E";
- (6) Hair Moisturizing Complex, designed to "remove excess residue resulting in cleaner, healthier softer hair."

(Id.; "Soft & Beautiful" Label, Ex. 13 to Johnson Products' Response; "Just for Me" Label, Ex. 14 to Johnson Products' Response.) The two products in the hair relaxer kits most relevant to Johnson Products' charges of patent infringement are the Pre-Relaxer Treatment and the Relaxer Creme.

Dhaliwal's reformulations of "Soft & Beautiful" and "Just for Me" entailed adding Polyquaternium-39, a quaternary polymer, to the non-alkaline pretreatment components of the hair relaxer kits. (Pro-Line's 12(M) of '572 Non-Infringement para. 18.) Dhaliwal also added Polyquaternium-39 with nonoxynol-10-carboxylic acid to the calcium hydroxide relaxer composition of the "Soft & Beautiful" product and Polyquaternium-39 or Polyquaterium-22 with nonoxynol-10-carboxylic acid to the calcium hydroxide relaxer component of the "Just for Me" product. (Id.) He found the resulting product prevented the dull appearance normally left on relaxed hair when using the mild relaxer used in Pro-Line's relaxer, calcium hydroxide. (Id.)

The instructions provided in the "Soft & Beautiful" hair relaxer kit FN3 outline the use of the different products in the following way:

FN3. The instructions for the "Just for Me" kit are on cassette tape and have not been submitted by the parties as part of the record. The court assumes that the same instructions apply for the two kits.

first, the consumer should apply the Pre-Relaxer Treatment over the hair; second, apply the mixture of No-Lye Relaxer Creme and the Liquid Activator to the hair and comb; third, smooth the hair with the back of

the comb; fourth, rinse the hair with water; fifth, apply the Neutralizing and Decalcifying Shampoo to the hair and rinse; sixth, apply the Hair Moisturizing Complex to the hair and scalp, leave on 4-5 minutes, then rinse; and seventh, spray on the leave-in conditioner.

(Johnson Products' 12(N)(3)(b) of '572 Non-Infringement para. 21.)

Pro-Line started manufacturing and selling its "New Advanced System Soft & Beautiful" and "Just for Me" kits in November 1993. (Id. para. 23.) In February 1994, Thomas Polke, Chief Financial Officer of Johnson Products, called Comer Cottrell and warned him that, in Johnson Products' view, Pro-Line's products infringed the '572 and '822 patents. (Id.) Unable to resolve the dispute informally, Johnson Products filed this suit on June 8, 1994.

DISCUSSION

A. Claim Construction

Before addressing the summary judgment motions, the court turns to the scope of the claims in the two patents. Claim construction is a pivotal element in analysis of patent cases because "to decide what the claims mean is nearly always to decide the case." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 989 (Fed.Cir.1995) (en banc) (Mayer, J., concurring), *aff'd* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

A patent is a grant of rights that permits the patentee to exclude others from making, using, or selling the invention as claimed. 35 U.S.C. s. 154. Accordingly, a patent must describe the exact scope of an invention to define the limits of the patentee's rights and "apprise the public of what is still open to them." *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996) (quoting *McClain v. Ortmyer*, 141 U.S. 419, 424, 12 S.Ct. 76, 35 L.Ed. 800 (1891)). A patent is composed of two distinct elements. The first contains a specification, describing 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." 35 U.S.C. s. 112. The second consists of "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." *Id.*

In *Markman*, the Supreme Court held that the proper construction or interpretation of an asserted claim is strictly a question of law for the court. 517 U.S. at 372. A patent covers the invention that the court decides that it describes and claims. *Id.* In determining the proper construction of a claim, the court may consult both intrinsic and extrinsic evidence. *Vitronic Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). The proper starting point is always the "words or claims themselves, both asserted and unasserted, to define the scope of the patented invention." *Id.* at 1582. The court may consider extrinsic evidence when the intrinsic evidence fails to "unambiguously describe the scope of the patented invention." *Id.* at 1584. In any case, the court must construe the words in a claim "as one of skill in the art at the time of invention would understand them." *Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1555 (Fed.Cir.1997).

Accordingly, before considering the parties' arguments concerning non-infringement and invalidity of the two patents, the court must first decide disputes concerning the legal construction of the language of the claims in these patents. To do so, the court heard evidence in a *Markman* hearing on March 17 and 18, 1998, discussed below. The parties have identified three disputed issues with respect to the '572 patent and two disputes with respect to the '822 patent.

1. Does "hair conditioning composition" refer to any part of the hair relaxer system that conditions the hair, or does it refer only to a separately bottled conditioner?
2. Would a chemist of ordinary skill in the art in 1977 have understood "recurring units of the formula" to be a graphic depiction of polymerized dimethyldiallyl ammonium chloride (DMDAAC)?
3. Does the ordinary meaning of "quaternary polymer" apply, or should the specification be read into the claim?

'822 Patent

1. Is the meaning of "being stable when in an aqueous medium at a pH of at least about 6.1" limited by the prosecution history of the '860 patent?
2. Is the patent limited to compositions that simultaneously texturize and strengthen alkaline relaxed hair at a pH of 8 to 11, or does it also cover compositions outside that pH range?

1. '572 Patent

a. "Hair Conditioning Composition"

Claim 1 of the '572 patent covers a "hair conditioning composition for use under highly alkaline conditions comprising an aqueous dispersion." The parties first dispute whether "hair conditioning composition" refers only to a separately bottled conditioner, as argued by Pro-Line, or any part of the hair relaxer system, as asserted by Johnson Products.

According to the specification of the '572 patent, it is designed to cover hair conditioning compositions "premixed with the relaxer and applied at the same time" and also those applied "prior to the application of the relaxer" and "after application of the relaxer to the hair." In other words, the plain language of the patent itself provides for the formula to be used during any conditioning process of the hair relaxer system. Plaintiff's expert, Dr. Wolfram, testified that one of ordinary skill in the art would "definitely not be inclined to accept" that the hair conditioning composition is "limited to those situations only where there's a preconditioner rather than when [it is] mixed in with a relaxer." (Transcript of March 17-18, 1998 hearing (hereinafter "Tr."), at 22-23). He continued that the examples in the '572 patent would indicate to one of ordinary skill in the art that "the hair conditioning composition can be used in any step of the relaxation process." (*Id.* at 24.) Dr. Lochhead, Pro-Line's expert, did not present any contrary testimony.

Based on this intrinsic and extrinsic evidence, the court concludes that the expression "hair conditioning composition" in claim 1 of the '572 patent refers to any part of the relaxer kit that conditions hair and is not limited to a separate conditioner.

b. "Recurring Units of the Formula"

Claim 1 of the '572 patent also covers "from about 0.05 to about 20 weight percent of a quaternary polymer having recurring units of the formula." The parties dispute what this formula meant to a chemist of ordinary skill in the art at the time of the invention in 1977. The claims in the 1977 patent clearly depict polymerized dimethyldiallyl ammonium chloride (DMDAAC) as a chemical compound featuring a six-member carbon

ring. Current understanding of the structure of the DMDAAC molecule is that it is actually a five-member ring. FN4

FN4. Comparison of the graphic depictions readily demonstrates that the basic chemical composition of DMDAAC is the same regardless of whether it is viewed as a six-member or five-member ring. As recognized by the court, the number of molecules in both depictions is exactly the same; only the graphic portrayal of the molecular structure changes. In essence, the difference is one of form rather than substance. See figure below:

This revised understanding of the structure of the DMDAAC molecule makes no difference to the patent claim, however, according to Johnson Products. Johnson Products argues that a chemist in 1977 would have understood the formula to be a graphic depiction of DMDAAC. (Johnson Products' Post- *Markman* Hearing Brief (hereinafter "Johnson Products' *Markman* Brief"), at 3). Conversely, Pro-Line maintains that the court should read these claims with the requirement of a six-member ring, as found in the '572 patent. (Pro-Line's Post- *Markman* Hearing Brief (hereinafter "Pro-Line's *Markman* Brief"), at 3.) If the patent requires a six-member ring, Pro-Line argues that: (1) the '572 patent would be invalid because DMDAAC with a six-member ring does not exist and (2) Pro-Line's products could not infringe the '572 patent because no such chemical composition exists. (Pro-Line's '572 Invalidity Motion, at 4; Pro-Line's '572 Non-Infringement Motion, at 3.)

Johnson Products points out that the specification itself explicitly identifies polymerized DMDAAC as the preferred quaternary polymer to be used in the conditioning relaxer composition.FN5 Further, the other claims of the patent demonstrate that the formula in claim 1 was meant to cover a polymerized DMDAAC. For instance, claim 5 refers to "the hair conditioner composition of claim 2 [which is dependent on claim 1] wherein said quaternary polymer is polydiallyldimethylammonium chloride." Claim 5 thus contemplates that the quaternary polymer was a homopolymer made up solely of polymerized DMDAAC units.

FN5. The claim repeatedly lists DMDAAC in the specification. For example, it states that the "preferred quaternary polymers have recurring units of diallyldimethylammonium salts" (DMDAAC) and that the "preferred polymer is a polydimethyldiallylammonium salt, such as chloride" (DMDAAC). ('572 patent 1, col. 3, lns. 30-34.) Additionally, examples of a conditioning composition in the specification of the patent list either the DMDAAC homopolymer or the DMDAAC acrylamide copolymer as the quaternary polymers that are part of the hair conditioning composition. ('572 patent, example I, col. 4, line 20; example III, col. 4, line 52; example IV, col. 4, lns. 68-69.)

Johnson Products presented substantial extrinsic evidence that a chemist of ordinary skill in the art in 1977 would have understood the formula in claim 1 of the patent as depicting polymerized DMDAAC. First, its expert witness, Dr. Wolfram, testified that "[t]here was no doubt in anybody's mind that it was DMDAAC." (Tr. at 60.) Dr. Lochhead offered no contrary evidence.FN6

FN6. The court sustained Johnson Product's objection to Dr. Lochhead's testimony on this issue at the hearing because of his earlier deposition testimony that he had no opinion on the views of one of ordinary skill in the art in 1977 with respect to the meaning of the formula in claim 1.

In addition, the vast majority of sources available to a chemist of ordinary skill in the art in 1977 portray polymerized DMDAAC as containing a six-member ring similar to the one in claim 1. The most important source was the CTFA Cosmetic Ingredient Dictionary.FN7 The second edition of the CTFA Dictionary was published in 1977 and also represented the chemical containing polymerized DMDAAC as having a six-member ring. (*Id.* at 52-53.) It was not until 1991 that the CTFA Dictionary showed DMDAAC as having a five-member ring. (*Id.* at 309-10.) Besides the CTFA Dictionary, numerous other articles and patents referred to polymerized DMDAAC as having a six-member ring. FN8

FN7. The significance of the CTFA Dictionary was noted by James Akerson, chairman of the Nomenclature Committee of the CTFA for 20 years, who called the dictionary the "primary document used by the entire cosmetic industry not only in this country, but now around the world as a source of information for cosmetic ingredients." (Tr. at 292.) According to Akerson, the CTFA Dictionary is the first and most important source for chemists in the cosmetic and hair industry when looking for information about the structure of chemicals such as DMDAAC. (*Id.* at 304-05.) Similarly, Dr. Wolfram called the CTFA Dictionary the "bible of the formulating chemist in the cosmetic field." (*Id.* at 14.)

FN8. For example, two chemists with Calgon, the manufacturer of DMDAAC, both portrayed DMDAAC with a six-member ring. (Johnson Products' *Markman* Brief, at 6.) One of the chemists was the first to synthesize the DMDAAC polymer. (*Id.*) Also, the first person to use DMDAAC in hair conditioning referred to DMDAAC as having a six-member ring in all three of his patents in 1975, 1976, and 1977. (*Id.*)

Pro-Line urges the court to construe the claims as a matter of law to require a six-member ring, thereby finding that the '572 patent does not refer to DMDAAC, which actually has a five-member ring. The only evidence in support of such a construction was a 1976 publication by J.E. Lancaster that stated that 'poly(diallyldimethylammonium) chloride consists predominantly, if not exclusively, of five-membered rings.' (J.E. LANCASTER, ET AL., POLYMER LETTERS 549 (1976).) Because the Lancaster article was available in 1977 when the application for the patent was filed, Pro-Line argues that the claim should not be read to refer to DMDAAC because Johnson Products chose to depict DMDAAC with a six-member ring.

Pro-Line's argument is unpersuasive for three reasons. First, Lancaster's view, though now commonly accepted, was apparently neither well-known nor well-accepted in 1977. (Tr. at 110.) His article was published in a technical journal not typically read by chemists in the cosmetics industry. (*Id.* at 109.) Indeed, a number of post-1977 patents for cosmetic products continued to represent polymerized DMDAAC as containing a six-member ring. (*See, e.g.*, U.S. Patent No. 4,213,960 to Grollier from the L'Oreal cosmetics company, issued in 1980; U.S. Patent No. 4,369,037 to Matsunaga from Kao Soap, a Japanese cosmetic company, issued in 1983.)

In addition, accepting Pro-Line's position would mean that the formula in claim 1 of the '572 patent has no meaning at all merely because scientists later discovered that polymerized DMDAAC has a five-member rather than six-member ring. As Johnson Products notes, Pro-Line's interpretation would require that an entire patent be rendered meaningless whenever the graphic depiction of the structure of one of the chemical ingredients in a patent changed even though the patented composition did not change at all. (Johnson Products' *Markman* Brief, at 6.) Requiring inventors to be able to predict future discoveries in order to ensure a valid patent would be both unreasonable and illogical. Such an interpretation also conflicts with proper claim construction, which prohibits imposing a "post-filing date development" of a different

understanding of the meaning of terms. *See* W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1556-57 (Fed.Cir.1983).

Finally, the evidence supports the conclusion that a chemist of ordinary skill in the hair care industry in 1977 would have recognized that the formula in claim 1 of the '572 patent was polymerized DMDAAC, whether it was depicted with a six-member or five-member ring. Even if a chemist understood DMDAAC to have a five-member ring at that time, that chemist would look at the formula and almost certainly know what was being referred to in the formula. (Johnson Products' *Markman* Brief, at 6.)

In sum, the weight of the intrinsic and extrinsic evidence supports the finding that a chemist in 1977 would have understood the formula in claim 1 to be a graphic depiction of polymerized dimethyldiallyl ammonium chloride or DMDAAC.

c. "Quaternary Polymer"

A third dispute between the parties concerns the meaning of "quaternary polymer" as used in the '572 patent. Johnson Products argues for the ordinary meaning of the phrase and urges that the specification not be read into the claim. (Johnson Products *Markman* Brief, at 8.) In the alternative, Johnson Products claims that even if the specification could be read into the claim, "quaternary polymer" would still refer to chemicals such as Polyquaternium-22 and Polyquaternium-39. (*Id.*) On the other hand, Pro-Line asserts that the specification limits the definition of "quaternary polymer" such that the claims refer only to Polyquaternium-6 and Polyquaternium-7. (Pro-Line's *Markman* Brief, at 7.) Then, according to Pro-Line, its products, which contain Polyquaternium-22 and Polyquaternium-39, would not infringe the '572 patent. (Pro-Line's '572 Non-Infringement Motion, at 18.)

In construing claims, words are given their ordinary meaning unless a specific limitation is given in the specification. *See* Transmatic, Inc. v. Fulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995). This court simply finds no evidence of a limitation in the specification of the '572 patent.FN9

FN9. The specification of the '572 patent states:

The quaternary polymer can be either a homopolymer wherein all of the groups are substantially as shown above, or a copolymer wherein at least about 50% of the recurring groups are of the structure shown above. The remaining groups are moieties of vinyl monomers such as acrylamide. The preferred quaternary polymers have recurring units of diallyldimethylammonium salts.

('572 patent, col. 3, lns. 25-31.) The language that a quaternary polymer "can be either a homopolymer ... or a copolymer" does not appear to be a limitation. This seems especially likely in light of other instances in the patent where the inventors provided a definition for the term when it differed from its ordinary meaning. Pro-Line offered the testimony of Dr. Du Hsuing, the patent's co-inventor, in which Dr. Hsuing stated that Polyquaternium-6 and Polyquaternium-7 would work in the invention. (Confidential Letter of Dr. Hsuing, Tab 9 to Pro-Line's *Markman* Exhibit 32.) Based on that testimony, Pro-Line claims that the inventor did not consider conditioners other than Polyquaternium-6 and Polyquaternium-7 as part of the invention. (Pro-Line's *Markman* Brief, at 7.) Dr. Hsuing's testimony, however, need not be interpreted as urged by Pro-Line. Dr. Hsuing did not testify that other conditioners were not covered by the patent; he only stated that Polyquaternium-6 and Polyquaternium-7 were both covered by the patent.

Additionally, the claims of a patent are not "limited by preferred embodiments." *CVI/Beta Ventures v. Tura LP*, 112 F.3d 1146, 1158 (Fed.Cir.1997), *cert. denied*, 522 U.S. 1109, 118 S.Ct. 1039, 140 L.Ed.2d 105 (1998). Moreover, "[t]hat claims are interpreted in light of the specification does not mean that everything expressed in the specification must be read into all the claims." *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 957 (Fed.Cir.1983). As such, the '572 patent is not necessarily limited to the particular quaternary polymers listed in the examples section of the patent.

In the alternative, Johnson Products argues that even if the specification is read into the claim, "quaternary polymer" would include chemicals such as Polyquaternium-22 and Polyquaternium-39 on the grounds that: (1) "copolymer" means a polymer with two or more monomers and (2) the measurement of "50% of the recurring groups" is based on weight.

Johnson Products presented substantial evidence that "copolymer" is commonly understood by chemists to mean two or more monomers.FN10 Conversely, Pro-Line has not supported its position that "copolymer" is limited to just two monomers. Indeed, Pro-Line's own expert, Dr. Lochhead, testified consistently with Johnson Products' claim that "copolymer" means two or more monomers. (Tr. at 280.) The court concludes that the word "copolymer" refers to a polymer containing two or more monomers and that "quaternary polymer" does include chemicals like Polyquaternium-22 and Polyquaternium-39.

FN10. Both Dr. Wolfram and Dr. Lochhead testified that this was the case. (Tr. at 131-33, 280.) Additionally, various reference materials affirmed Johnson Products' view, including the COMPENDIUM OF MACROMOLECULAR NOMENCLATURE ("copolymer" defined as a "polymer derived from more than one species of monomer" which includes "terpolymers," which are polymers derived from "three species of monomer"), the ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY ("there are myriad ways in which two or more monomers can be bonded to form copolymers"), and STILLE, INTRODUCTION TO POLYMER CHEMISTRY (1962) ("polymers containing two or more structural units ... are copolymers").

Also at issue in the determination of whether the '572 patent covers Polyquaternium-22 and Polyquaternium-39 is the meaning of the phrase "a copolymer [with] ... at least about 50% of the recurring groups [] of the structure shown above." Johnson Products claims that the measurement of "50% of the recurring groups" is based on weight, while Pro-Line contends that it is based on mole fraction. (Johnson Products' *Markman* Brief, at 12.) Johnson Products argues that the specification must refer to "50% of the recurring groups" as based on weight and not mole fraction because otherwise, the example in the patent that describes a copolymer would not be included in the claim language.FN11 This would be inconsistent with proper interpretation of claim language, which rarely finds correct an interpretation in which the preferred embodiment would not fall within the scope of the claim. *See Vitronics*, 90 F.3d at 1583. Pro-Line has failed to produce any counter evidence.

FN11. Example IV of the specification includes 'diallyldimethylammonium chlorideacrylamide copolymer' as an ingredient in the "conditioning hair relaxer." ('572 patent, col. 4, lns. 55-69.) The only copolymer available at that time with those particular ingredients was a chemical that consisted of 50% DMDAAC and 50% acrylamide by weight. (Tr. at 139.) There was, however, no copolymer with those ingredients containing at least 50% by DMDAAC by mole fraction. (*Id.* at 140-44.) If the 50% was based on mole fraction rather than weight, as Pro-Line claims, Example IV would not be an embodiment of the claims of the '572 patent.

After evaluating the relevant evidence, the court finds that the ordinary meaning of "quaternary polymer" applies, as no limitation was made in the specification.

2. '822 Patent

a. "Being Stable When in an Aqueous Medium at a pH of at Least About 6.1"

The parties have identified two disputes concerning the language of the '822 patent. First, a disputed issue exists as to the meaning of the phrase "being stable when in an aqueous medium at a pH of at least about 6.1." Johnson Products argues that the language should be read literally to include any aqueous medium of a pH of 6.1 or more. (Johnson Products' *Markman* Brief, at 14.) Pro-Line claims that this phrase is limited by the prosecution history of the parent to the '822 patent, U.S. Patent 5,060,860 (" '860 patent"). (Pro-Line's *Markman* Brief, at 13.) Specifically, Pro-Line contends that claim 1 of the '822 patent that the aqueous medium would have a "pH of at least about 6.1" is unusable because claim 33 of the parent application was amended to limit the pH of the hair strengthening and texturing composition to the range of 8 to 11, thereby excluding Pro-Line's products from the patent's claims. (*Id.*)

Pro-Line's argument confuses two independent facts. As noted by Johnson Products, whether the composition in the '860 patent has to be limited to a certain pH range is different from and independent of whether the composition in the '822 patent is "stable when in an aqueous medium at a pH of at least about 6.1." (Johnson Products' Pre- *Markman* Hearing Brief, at 16.) Moreover, the two claims that Pro-Line interprets—the rejected claim 33 of the parent application and the allowed claim 1 of the '822 patent—differ to such an extent that comparison is not appropriate.^{FN12} In other words, the fact that one claim of the parent application was limited to a certain pH range does not impose such a limitation on a different claim in the later application.

FN12. In revising the rejected claim 33 to become claim 1 of the '822 patent, Johnson Products specifically indicated that the composition of the latter claim was different:

Original composition Claim No. 33 has been amended and rewritten to recite compositions which compositionally differ from those appearing in the claims of co-pending parent patent application Serial No. 95,397 now identified as U.S. Pat. No. 5,060,860.

('822 File History, at Tr. 238, Ex. 4 to Johnson Products' *Markman* Hearing Exhibits.)

The court concludes that the plain language of the '822 patent is not restricted by the limitations of the '860 patent.

b. "Texturing and Strengthening Composition"

The final dispute concerning interpretation of the '822 patent arises from the reference in claim 1 to an "aqueous hair texturing and strengthening composition." Johnson Products contends that the language should be read literally so that the composition need not simultaneously texturize and strengthen and need not be limited to a particular pH range. (Johnson Products' *Markman* Brief, at 14.) Pro-Line argues that at a minimum, all of the claims in the '822 patent should be limited to exclude any compositions that do not both texturize and strengthen alkaline relaxed hair. (Pro-Line's *Markman* Brief, at 11.) Moreover, Pro-Line argues that the patent should be limited to require simultaneous strengthening and texturizing of hair at a pH

of from 8 to 11. (*Id.*) Thus, the phrase would not include compositions at a pH of 6.1, and the patent would be invalid.

The phrase "aqueous hair texturing and strengthening" appears in the claim preamble. Pro-Line relies on the claim preamble as a claim limitation, arguing that the patent only covers compositions that texturize and strengthen at a pH of 8 to 11. (Pro-Line's *Markman* Brief, at 11.) Nothing in the preamble, however, limits the application of the phrase "aqueous hair texturing and strengthening composition" to any particular pH range. Furthermore, nothing in the specification or the claim language indicates that the claim covers only compositions substantially above a pH of 6.1. Pro-Line's additional support derives from its view that the '822 patent's inventor, Mr. Akhtar, intended the invention to simultaneously strengthen and texturize hair at a pH from 8 to 11. (Pro-Line's *Markman* Brief, at 12.) Pro-Line makes no attempt to explain the significance of that point beyond that single observation, and this court declines to draw any unwarranted references. Lastly, Pro-Line again points to the prosecution history of the '860 patent to argue for a limited pH range. As already determined, however, the relevant prosecution history of the '860 patent does not apply to the '572 patent.

The plain language of the claim does appear to require the composition to texturize and strengthen. Unfortunately, neither party has offered any evidence that a composition at a pH of 6.1 either does or does not texturize and strengthen. For example, assuming *arguendo* that a composition at a pH of 6.1 could not possibly texturize and strengthen hair, that composition would almost certainly not be covered by the patent.

In light of the presented evidence, however, the court concludes that the plain meaning of the phrase imposes no limitations regarding the pH range.

For the reasons discussed above, this court finds that the claims for the '572 and '822 patents should be interpreted as follows:

1. "Hair conditioning composition" refers to any part of the hair relaxer system that conditions the hair, not only to a separately bottled conditioner.
2. A chemist of ordinary skill in the art in 1977 would have understood "recurring units of the formula" depicted in the patent to be a graphic depiction of the DMDAAC compound; that chemists in the cosmetic industry now know DMDAAC has a five-member ring structure does not alter this conclusion.
3. The ordinary meaning of "quaternary polymer" applies and includes chemicals such as Polyquaternium-22 and Polyquaternium-39, the ingredients in Pro-Line's products.
4. The prosecution history of the '860 patent does not operate to limit the meaning of the phrase "being stable when in an aqueous medium at a pH of at least about 6.1."
5. The '822 patent should be limited to include compositions that texturize and strengthen alkaline relaxed hair, but not necessarily only those at a pH of 8 to 11.

B. Motions for Summary Judgment

Pro-Line has moved for summary judgment on the grounds of invalidity of the '572 patent, non-infringement of the '572 patent, invalidity of the '822 patent, and non-infringement of the '822 patent. The

court addresses each motion separately, relying heavily on the claim construction set forth above.

1. Standard of Review

Summary judgment in a patent case, as in any other type of case, is appropriate when there are no genuine issues of facts and the moving party is entitled to judgment as a matter of law. *Monarch Knitting Mach. Corp. v. Sulzer Morat GMBH*, 139 F.3d 877, 880 (Fed.Cir.1998). To determine whether genuine issues of material fact exist, the court will look to pleadings, depositions, answers to interrogatories, admissions on file, and affidavits. *See General Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 980 (Fed.Cir.1997). All evidence and inferences are viewed in the light most favorable to the nonmoving party. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986).

The moving party bears the burden of demonstrating the absence of all genuine issues of material fact. *Celotex Corp. v. Catrett*, 477 U.S. 317, 323, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1985); *Monarch Knitting*, 139 F.3d at 880 (citation omitted). To do so, the moving party need not produce evidence demonstrating the absence of a genuine issue of material fact, but must show the absence of evidence to support the nonmoving party's case. *Celotex*, 477 U.S. at 325. Once the moving party supports the motion as provided by FED. R. CIV. P. 56(c), the party opposing the motion must come forward with evidence directed to specific facts showing that there is a genuine issue for trial. *Jamesbury Corp. v. Litton Indus. Prods., Inc.*, 839 F.2d 1544, 1548 (Fed.Cir.1988), FED. R. CIV. P. 56(e). Mere denials or conclusory statements are not sufficient. *Id.*

2. Non-Infringement of the '572 Patent

Because patent infringement cases involve a fact-intensive inquiry, the Federal Circuit has cautioned that summary judgment on that issue must be approached with great care by the district court. *See, e.g., SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1116 (Fed.Cir.1985). Nonetheless, "[w]here the determination of infringement turns solely on the legal question of the proper construction of the claims, summary judgment is appropriate." *Mantech Envtl. Corp. v. Hudson Envtl. Servs.*, No. 98-1079, 1998 WL 469887, at *2 (Fed.Cir. Aug. 13, 1998).

Johnson Products alleges that Pro-Line infringes the '572 patent in four different ways:

- (1) direct infringement by manufacturing, selling, and offering for sale creme relaxers for the "Soft & Beautiful" and "Just for Me" relaxer kits that literally infringe the '572 patent;
- (2) direct infringement by manufacturing, selling, and offering for sale creme relaxers that infringe the '572 patent under the doctrine of equivalents;
- (3) inducement of infringement by consumers through instructions to mix the pretreatment conditioner and the creme relaxer; and
- (4) contributing to the infringement of the '572 patent by manufacturing different components of the relaxer kit that, when mixed on the consumers' heads, infringe.

(Johnson Products' Brief in Response to Pro-Line's Motions for Summary Judgment (hereinafter "Johnson Products' Response"), at 8.) The court addresses each argument in turn.

a. Literal Infringement

Analysis of a literal patent infringement claim involves two steps: (1) the proper construction of the asserted claim and (2) a determination as to whether the accused method or product infringes the asserted claim as properly construed. *See* *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 975 (Fed.Cir.1995) (en banc), *aff'd* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1581-82 (Fed.Cir.1996). Claim construction proceeds as a matter of law. *Markman*, 517 U.S. at 372. In contrast, the comparison of properly interpreted claims to the accused structure is a question of fact. *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572, 1583 (Fed.Cir.1996). To infringe, the accused device must embody exactly each claim limitation or its equivalent. *Miles Labs., Inc. v. Shandon Inc.*, 997 F.2d 870, 876 (Fed.Cir.1993), *cert. denied*, 510 U.S. 1100, 114 S.Ct. 943, 127 L.Ed.2d 232 (1994).

Pro-Line claims that its "Soft & Beautiful" and "Just for Me" products do not literally infringe claim 1 of the '572 patent because the pre-relaxer treatment products lack the following elements: (1) about 1 to about 20 weight percent of mineral oil, (2) about 1 to about 20 weight percent of a fatty alcohol, and (3) a quaternary polymer having a six-member piperidine recurring unit of the formula [pictured in claim 1].FN13 (Pro-Line's Summary Judgment Motion on Non-Infringement of the '572 Patent (hereinafter "Pro-Line's '572 Non-Infringement Motion"), at 9.) Pro-Line further argues that there is no direct infringement of claim 9 of the '572 patent because the two relaxer kits do not contain a 5 weight percent of mineral oil and a 10 weight percent of cetyl alcohol.FN14 (*Id.* at 10.) Lastly, Pro-Line contends that its products cannot directly infringe claim 10 of the '572 patent because its products do not have a 0.05 to 20 weight percent of a quaternary polymer having recurring six-member piperidine rings of the formula. FN15 (*Id.*) Instead, Pro-Line insists that both of the products contain polyampholyte terpolymer Polyquaternium-39 having recurring units of acrylamide, a five-member pyrrolidone ring, and acrylic acid-elements not found in the '572 patent. (*Id.* at 11.)

FN13. Pro-Line also contends that the issuance of a patent to Pro-Line on the accused products where the '572 patent was listed as prior art proves that Pro-Line's products do not infringe the '572 patent. (Pro-Line's '572 Non-Infringement Motion, at 18-19.) As the Federal Circuit has recognized, however, "[t]he grant of a separate patent does not automatically avoid infringement, either literal or by equivalency." *National Presto Indus., Inc. v. West Bend Co.*, 76 F.3d 1185, 1191 (Fed.Cir.1996). The fact of separate patentability is one relevant factor in the factual determination of whether the claims cover the accused product, *id.* at 1192, but the issuance of a patent to Pro-Line does not establish non-infringement of the '572 patent as a matter of law.

FN14. Johnson Products failed to address Pro-Line's summary judgment motion with respect to claim 9 of the '572 patent. The court, therefore, concludes there are no disputes of fact on that claim and that Pro-Line is entitled to summary judgment on that issue.

FN15. Johnson Products, however, does not appear to allege direct infringement of the '572 patent with respect to claim 10. Accordingly, the court's discussion of direct infringement is limited to claim 1 of the '572 patent.

In its response brief, Johnson Products called Pro-Line's discussion of why its Pre-Relaxer Treatment standing alone does not infringe in the three ways "entirely irrelevant" because the Creme Relaxer kits as a whole infringe the '572 patent. (Johnson Products' Response, at 9.) Pro-Line insists that the Creme Relaxer kits also do not infringe because the two products lack a quaternary polymer having a six-member piperidine recurring unit of the formula. (Pro-Line's Reply Brief to Johnson Products' Brief in Response to Pro-Line's Motion for Summary Judgment on Non-Infringement of the '572 Patent (hereinafter "Pro-Line's '572 Non-Infringement Reply"), at 16.) This last argument, however, rests on Pro-Line's reading of claim 1 of the '572 patent as not including the quaternary polymers in "Soft & Beautiful" and "Just for Me," namely Polyquaternium-39 and Polyquaternium-22—a reading this court has rejected. To the contrary, as discussed above, this court concludes from the evidence presented at the *Markman* hearing that Polyquaternium-39 and Polyquaternium-22 are both quaternary polymers covered by the patent. Accordingly, Pro-Line's use of Polyquaternium-39 and Polyquaternium-22 do not defeat Johnson Products' infringement claim.

Johnson Products points out that Pro-Line's "Soft & Beautiful" and "Just for Me" hair relaxer kits both contain about 1 to about 20 percent mineral oil, about 1 to about 20 percent fatty alcohol, about 1 to about 15 percent non-ionic emulsifier, and about 0.05 to 20 percent quaternary polymer. (Johnson Products' Response, at 10-16.) As support, Johnson Products points to the ingredient labels for "Soft & Beautiful" and "Just for Me," which list mineral oil, fatty alcohol, non-ionic emulsifier, and quaternary polymers. ("Soft & Beautiful" and "Just for Me" Ingredient Labels, Exs. 13 & 14 to Johnson Products' Response.) In addition, Johnson Products alleges that the Ingredient Weighing Records FN12 for the Creme Relaxers used in the kits indicate that all of the disputed chemical ingredients are, in fact, found in both "Soft & Beautiful" and "Just for Me." FN13 (Ingredient Weighing Records, Exs. 15 & 16 to Johnson Products' Response.) Dr. Wolfram, Johnson Products' expert witness, also explained that, in his opinion, the Creme Relaxers for the "Soft & Beautiful" and "Just for Me" hair relaxer kits contain each element of claim 1 of the '572 patent. (Wolfram Aff. para. 30, Ex. 1 to Johnson Products' Response.) Beyond challenging the status of Polyquaternium-22 and Polyquaternium-39 as quaternary polymers, Pro-Line has not rebutted the evidence.

FN12. Ingredient Weighing Records show the ingredient as well as the weight (in pounds) for each ingredient in the product, which can be converted into a weight percent. (Johnson Products' Response, at 12.)

FN13. Specifically, the Ingredient Weighing Records show that mineral oil makes up 11.02% of the "Just for Me" Creme Relaxer and 10.8% of the "Soft & Beautiful" Creme Relaxer, fatty alcohol makes up 4% of the "Just for Me" Creme Relaxer and 5.28% of the "Soft & Beautiful" Creme Relaxer, and non-ionic emulsifier makes up 8% of the "Just for Me" Creme Relaxer and 7.85% of the "Soft & Beautiful" Creme Relaxer. Thus, all of the disputed ingredients in claim 1 of the '572 patent are found in Pro-Line's "Soft & Beautiful" and "Just for Me" hair relaxer kits.

In this court's view, the evidence creates a dispute of material fact: whether Pro-Line's "Soft & Beautiful" and "Just for Me" hair relaxer kits contain the elements listed in claim 1 of the '572 patent. Accordingly, Pro-Line's motion for summary judgment of non-infringement of the '572 patent is denied.

b. Doctrine of Equivalents

Under the doctrine of equivalents, even if an accused product does not directly infringe a patent claim, the

product may nevertheless infringe if there is an "equivalence" between the product and the claimed elements. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17,21, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). The essential inquiry is whether the accused product or process contain elements identical or equivalent to each claimed element of the patented invention. *Id.*

Pro-Line contends that its products do not infringe the '572 patent under the doctrine of equivalents on the basis that "Soft & Beautiful" and "Just for Me" do not contain the elements in claim 1 of the '572 patent-the same argument it made for summary judgment on the literal infringement claim. (Pro-Line's '572 Non-Infringement Motion, at 18.) As analyzed above, this court concludes there is a fact issue as to whether Pro-Line's products literally infringe Johnson Products' patents. The court thus declines to decide whether infringement exists under the doctrine of equivalents.

c. Inducement of Infringement

In addition to its claims of literal infringement and infringement under the doctrine of equivalents, Johnson Products claims that Pro-Line is liable for having induced its customers to infringe, in violation of 35 U.S.C. s. 271(b). Proof of such a claim requires a showing of (1) actual infringement by a third party and (2) that the inducer knew that direct infringement would occur. *Black & Decker, Inc. v. Catalina Lighting, Inc.*, 953 F.Supp. 134, 139 (E.D.Va.1997). In addition to the knowledge element, an inducement of infringement claim "requires that the defendant specifically intended that its sale or other challenged acts induce its customers to engage in the conduct that allegedly directly infringes." *FN14 R2 Medical Syst., Inc. v. Katecho, Inc.*, 931 F.Supp. 1397, 1440 (N.D.Ill.1996) (citing *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469 (Fed.Cir.1990)). Absent direct infringement by a third party, a defendant cannot be liable for induced infringement. *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 341, 81 S.Ct. 599, 5 L.Ed.2d 592 (1961); *Universal Elec., Inc. v. Zenith Elec. Corp.*, 846 F.Supp. 641, 644 (N.D.Ill.1994).

FN14. Neither party addressed the intent issue in their briefs. Because the court concludes for other reasons that Johnson Products' inducement of infringement claim fails, the court need not address the intent issue further.

According to Johnson Products, Pro-Line induces infringement of claims 1 and 10 of the '572 patent through its written instructions to the consumers of "Soft & Beautiful" and "Just for Me" to mix the Creme Relaxer with the Liquid Activator and then place the mixture on hair with the Pre-Relaxer Treatment. (Johnson Products' Response, at 25-26.) In other words, Johnson Products' inducement claim rests on its contention that when used as designed, the accused products literally infringe the '572 patent.

Generally speaking, the doctrines of actively inducing infringement and direct infringement are mutually exclusive when the actions are based on the same act. *See United States Fidelity & Guaranty Co. v. Star Tech., Inc.*, 935 F.Supp. 1110, 1115 (D.Or.1996); *Picker Int'l Inc. v. Varian Assoc., Inc.*, 661 F.Supp. 347, 350 (N.D.Ohio 1987). In explaining the rule, courts note that the act of encouraging someone to purchase a product is necessarily subsumed by the actual sale of that product. *United States Fidelity*, 935 F.Supp. at 1115. The only case allowing for simultaneous actions for direct infringement and inducement of infringement involved a situation where the direct infringement and inducement of infringement claims were based on two time periods, namely sales before and after issuance of the patent. *See Procter & Gamble Co. v. Nabisco Brands, Inc.*, 604 F.Supp. 1485, 1490 (D.Del.1985).

Relying on these principles, Pro-Line argues that Johnson Products may not assert simultaneously claims of direct and induced infringement.FN15 In support, Pro-Line cites *Picker International*, where plaintiff alleged that defendant directly infringed its patent for a frosted glass x-ray tube by manufacturing, using, and selling the accused x-ray tubes and indirectly infringed the patent by inducing others to infringe by similar use and sales. 661 F.Supp. at 348. Noting that "[i]t is well settled that the doctrine of 'actively inducing infringement' ... is not available as a separate source of liability against one who is alleged to be direct infringer[.]" the court concluded that the theories were mutually exclusive. *Id.* at 351. Under the rationale of *Picker International*, Pro-Line urges that Johnson Products lacks standing to claim induced infringement because it also asserts a direct infringement claim. (Pro-Line's Motion of '572 Non-Infringement, at 19.) Johnson Products responds that *Picker International* is inapposite because Johnson Products bases its claim of direct infringement and its claim of inducement of infringement on two different acts: (1) direct infringement via making and selling the Creme Relaxer component of the relaxer kits and (2) inducement via instructing customers to mix the Pro-Relaxer Treatment, the Creme Relaxer, and the Liquid Activator. (Johnson Products' Response, at 26.) Johnson Products further adds that it is entitled to set forth alternative or hypothetical statements of a claim under FED. R. CIV. P. 8(e)(2).

FN15. This defense is available to Pro-Line only with respect to Johnson Products claims of inducement concerning claim 1 of the '572 patent; Johnson Products does not allege that Pro-Line infringed claim 10 of the '572 patent.

After careful consideration, this court finds Johnson Products' argument that its two claims are based on two different acts unpersuasive. Pro-Line's alleged inducement of its customers can only fairly be understood as part of Johnson Products' direct infringement claim against Pro-Line for manufacture and sale of the hair relaxer kits. As the courts recognize, manufacturers inevitably encourage their customers to use their products as instructed whenever they sell the product. *See United States Fidelity*, 935 F.Supp. at 1115. Nor would a manufacturer produce an item that was not intended ultimately for sale to customers. In short, the act of manufacturing and selling a product, on the one hand, and encouraging its use by customers, on the other, are really one and the same act. Accordingly, the rationale of *Picker International* precludes Johnson Products' claim of inducement of infringement with respect to claim 1.

Pro-Line's remaining argument for summary judgment on the induced infringement claim need not detain the court. Specifically, as before, Pro-Line claims that its hair relaxer kits do not infringe claim 1 of the '572 patent because they do not combine mineral oil, a fatty alcohol, and a quaternary polymer having a six-member piperidine recurring unit. (Pro-Line's Motion of '572 Non-Infringement, at 19.) Pro-Line also asserts that there is no infringement of claim 10 of the '572 patent because its products do not have a quaternary polymer containing a six-member piperidine recurring unit. (*Id.*)

As discussed above, Johnson Products has identified a genuine issue of material fact as to whether the "Soft & Beautiful" and "Just for Me" hair relaxer kits contain every limitation in claim 1. As for claim 10 of the '572 patent, Pro-Line's sole basis for seeking summary judgment on the induced infringement claim consists of the declaration of Pro-Line's CEO and founder, Comer Cottrell, that no customer of Pro-Line's makes, uses, or sells a composition for straightening hair having a quaternary polymer containing a six-member piperidine recurring unit of the formula claimed. (*See Pro-Line's Motion for '572 Non-Infringement*, at 19.) Conversely, Johnson Products presented evidence that all eight limitations of claim 10 are found in the Creme Relaxers. (Johnson Products' Response, at 27-29.) This was based on the ingredients listed on the

"Soft & Beautiful" and "Just for Me" labels, the Ingredient Weighing Records, and the expert testimony of Dr. Wolfram. (*Id.*) Johnson Products has raised a factual dispute over whether Pro-Line's product, when mixed together by the customer, infringe claim 10 in which the written instructions may induce infringement.

Because a genuine issue of material fact remains as to whether Pro-Line's instructions to its customers induce infringement of claim 10 of the '572 patent, summary judgment is inappropriate as to claim 10. Further, *Picker International* does not estop Johnson Products' claim that Pro-Line induces infringement of claim 10 of the '572 patent because Johnson Products has not asserted a direct infringement claim regarding claim 1. As for claim 1 of the '572 patent, though a genuine issue of material fact exists as to Pro-Line's direct infringement of claim 1, the rationale of *Picker International* precludes a claim of inducement of infringement. Therefore, summary judgment is granted on inducement of infringement of claim 1 of the '572 element.

d. Contributory Infringement

Lastly, Johnson Products argues that Pro-Line is liable under the doctrine of contributory infringement.

35 U.S.C. s. 271(c) provides in pertinent part:

Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in a patented process, constituting a material part of the invention, knowing the same to be made or especially adapted for use in an infringement of such patent, and not a staple article or commodity suitable for substantial noninfringing use, shall be liable as a contributory infringer.

To establish liability under this section, a plaintiff must show that defendant has sold a component of a patented device knowing that the component will be made or adapted for use in the infringement of a patent. *Mid-America Bldg. Prods. Corp. v. Richwood Bldg. Prods., Inc.*, 978 F.Supp. 708, 712 (E.D.Mich.1996). As with inducement of infringement, there must be a showing of direct infringement by a third party before a claim of contributory infringement can be made. *Aro*, 365 U.S. at 341; *Universal Electronics*, 846 F.Supp. at 644. The unauthorized use of a patented item, even by a consumer, constitutes a violation of the patent. *Universal Electronics*, 846 F.Supp. at 645. Nevertheless, if the accused product is a "staple article or commodity of commerce suitable for substantial noninfringing use," contributory infringement does not exist. 35 U.S.C. s. 271(c). To determine whether a product is a staple of commerce, the court must look at the entire device and not just the part capable of practicing the claims of the patent at issue. *Universal Electronics*, 846 F.Supp. at 651.

Contributory infringement is a broad equitable doctrine that developed to deal with circumstances in which an alleged infringer sold a component that was not itself technically covered by the claims of a product or process patent, but had no other use except with the claimed product or process. *Hewlett-Packard*, 909 F.2d at 1469. The doctrine was intended to prevent sellers from escaping liability for direct infringement by selling all but one element of the infringing product. *Proctor & Gamble*, 604 F.Supp. at 1489. Contributory infringement thus covers activities that do not constitute direct infringement, but intentionally contribute to direct infringement. *Id.* (citation omitted).

Procter & Gamble, for example, involved a patent for a method of manufacturing ready-to-serve cookies

that remain crispy on the outside and chewy on the inside for an extended shelf life. *Id.* at 1486. The plaintiff alleged that the defendant-manufacturer, knowing that issuance of a patent to plaintiff was imminent, flooded the market with infringing products before the patent issued. *Id.* Thousands of retailers thus directly infringed the patent, but the court found that action against the retailers was an impractical remedy. *Id.* Because defendant's conduct posed the "same risk of harm to the patentee as the cases applying the common law doctrine of contributory infringement," *id.*, the court recognized an equitable claim for contributory infringement.

Pro-Line contends that there can be no contributory infringement because there is no direct infringement; Pro-Line then repeats the same arguments it made with respect to the direct infringement claim, urging that Pro-Line's hair conditioners in its hair relaxer kits do not contain the necessary elements recited in Johnson Products' claims. (Pro-Line's Motion of '572 Non-Infringement, at 19-20.) As discussed above, however, this court recognizes genuine issues of material fact precluding summary judgment of Johnson Products' claim of direct, literal infringement of claim 1 of the '572 patent. Assuming, as Johnson Products maintains, that the direct infringement at issue here is by the customers, who use the patented invention on their hair by mixing the Pre-Relaxer Treatment with the Creme Relaxer (Johnson Products' Response, at 30, n. 11), Pro-Line is not entitled to summary judgment on the contributory infringement claim.

Nor is the court persuaded by Pro-Line's argument that its products are staples of commerce with substantial noninfringing uses. In particular, Pro-Line claims that Polyquaternium-39, which is used in the conditioner and straightener of the "Soft & Beautiful" product, and Merquat-295, FN16 which is found in the conditioner and straightener of the "Just for Me" product, have substantial noninfringing uses. (Pro-Line's '572 Non-Infringement Motion, at 20-21.)

FN16. Merquat-295 is the quaternary polymer chemical found in the straightener of the "Just for Me" products. (Pro-Line's 12(M) of '572 Non-Infringement para. 61.)

Pro-Line, however, misconstrues the "staples of commerce" defense by failing to consider the whole device. *See Universal Electronics*, 846 F.Supp. at 651. In *Universal Electronics*, the court considered whether the "staples of commerce" defense should apply for alleged patent infringement by the defendant's remote control transmitter. *Id.* Indicating that the proper focus in the inquiry is on the "entire device," the court looked at the entire remote control unit rather than just the transmitter at issue. *Id.* Similarly, the appropriate inquiry here is whether the conditioner and straightener in the "Soft & Beautiful" and "Just for Me" products are "staples of commerce" rather than whether Polyquaternium-39 and Merquat-295 are staples of commerce. It is irrelevant that the individual chemicals have substantial noninfringing uses because the court must look to the entire device, namely the whole hair relaxer kit.

Although the court is not persuaded by Pro-Line's challenge to the claim of contributory infringement, the court nevertheless notes its own concerns about whether the rationale behind an action for contributory infringement applies here. Contributory infringement was intended for situations where the defendant manufactured a product that did not directly violate the patent and then sold the product to another who assembled the final infringing product. *See Hewlett-Packard*, 909 F.2d at 1469; *Proctor & Gamble*, 604 F.Supp. at 1489. The present case differs in that Johnson Products alleges that Pro-Line's products themselves literally infringe the '572 patent. The infringement does not occur only once in the hands of the buyer. The fact that the Pre-Relaxer Treatment and Creme Relaxer are mixed together by the customer is irrelevant since the claim is that the products as a whole violate the patent, a violation that is arguably

completed before it reaches the ultimate user of the product.

The court denies Pro-Line's motion for summary judgment on the contributory infringement claim, but invites further argument on the applicability of the theory to the facts presented here.

3. Invalidity of the '572 Patent

A party seeking summary judgment of invalidity bears a heavy initial burden because an issued patent carries a statutory presumption of validity under 35 U.S.C. s. 282. *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1467 (Fed.Cir.1990); *Zumbro, Inc. v. Merck and Co.*, 819 F.Supp. 1387, 1405-06 (N.D.Ill.1993) (citation omitted). To satisfy the burden, courts have required the moving party to establish invalidity through clear and convincing evidence. *Rockwell Int'l Corp. v. United States*, 147 F.3d 1358, 1362 (Fed.Cir.1998). "Clear and convincing evidence" means "evidence which produce [s] in the mind of the trier of fact an abiding conviction that the truth of [the] factual contentions are highly probable." *Buildex, Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1463 (Fed.Cir.1988) (citations omitted).

Pro-Line makes a single argument in favor of its motion for summary judgment of the invalidity of the '572 patent: the quaternary polymer having a six-member recurring ring, as contemplated by claims 1 and 10, does not actually exist. (Pro-Line's '572 Invalidity Motion, at 4.) Consequently, according to Pro-Line, the '572 patent is invalid under 35 U.S.C. s. 112 FN17 because the claims are indefinite and the specification does not enable one skilled in the art to practice the claimed invention. (*Id.* at 5.) Johnson Products counters that when the '572 patent is construed as understood at the time of the invention in 1977, it meets the tests of enablement and definiteness. (Johnson Products' Response, at 46.)

FN17. 35 U.S.C. s. 112 requires:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same....

a. Enablement

To be "enabling" under section 112, "the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *Genetech, Inc. v. Novo Nordisk*, 108 F.3d 1361, 1365 (Fed.Cir.1997), *cert. denied*, 522 U.S. 963, 118 S.Ct. 397, 139 L.Ed.2d 310 (1997). Experimentation is not fatal; some experimentation is permissible "if it is merely routine [] or if the specification in question provides a reasonable amount of guidance...." *Johns Hopkins Univ. v. Cellpro, Inc.*, Nos. 97-1495, 98-1017, 1998 WL 466633, at * 16 (Fed.Cir. Aug. 11, 1998). If the claim incorporates incorrect or questionable theories of operation and a limitation is thus impossible to meet, however, it may be invalid because "the impossible cannot be enabled." *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 956 (Fed.Cir.1983). The issue of enablement is a question of law. *Id.* (citation omitted).

Pro-Line's contention centers on the construction of "quaternary polymer" in the '572 patent. The claims must be interpreted at the time of the invention in 1977, however. *See Eastman Kodak*, 114 F.3d at 1555. As already determined from the evidence presented at the *Markman* hearing, one skilled in the art in 1977 would have understood the quaternary polymer with six-member rings to be a graphic depiction of DMDAAC. For the same reasons enumerated in the claim construction discussion, the court finds that a genuine issue of material fact as to patent enablement precludes the grant of summary judgment.

b. Definiteness

Pro-Line also argues that the '522 patent is invalid for indefiniteness. (Pro-Line's '572 Invalidity Motion, at 5.) The statute, 35 U.S.C. s. 112, requires each patent to include "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." The "distinctly claiming" requirement means that the claims must have a "clear and definite meaning when construed in the light of the complete patent document." *Miles Labs., Inc. v. Shandon, Inc.*, 997 F.2d 870, 874-75 (Fed.Cir.1993), *cert. denied*, 510 U.S. 1100, 114 S.Ct. 943, 127 L.Ed.2d 232 (1994).

"Whether a claim is invalid for indefiniteness requires a determination whether those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Morton Int'l, Inc. v. Cardinal Chem. Co.*, 5 F.3d 1464, 1470 (Fed.Cir.1993). To satisfy this requirement of section 112, the claims need only "reasonably apprise those skilled in the art of the scope of the invention." *Miles Laboratories*, 997 F.2d at 875. Compliance with section 112 is a question of law. *Id.*

Pro-Line's argument for invalidity of the '572 patent on the grounds of indefiniteness is identical to its contention on the basis of enablement; namely, that a person of ordinary skill in the art would not understand the reference to "quaternary polymer" in claim 1 because no six-member recurring ring units exist. (Pro-Line's '572 Invalidity Motion, at 5.) Pro-Line relies on *Morton International* for its position that claims are invalid for indefiniteness when the claimed compounds cannot be identified by testing and one skilled in the art cannot determine whether a given compound is within the scope of the claims. (*Id.*)

Again, the court is not persuaded. A 1977 chemist of ordinary skill in the art would have understood the six-member ring structure depicted in the claims to refer to a DMDAAC polymer. Indeed, *Morton International* is distinguishable from the situation here precisely because one skilled in the art in 1977 would most certainly have understood the graphic depiction of the quaternary polymer to represent DMDAAC even if the chemist believed DMDAAC to have five-member rings. Accordingly, the court denies summary judgment on the invalidity of the '572 patent.

4. Non-Infringement of the '822 Patent

Pro-Line's arguments for summary judgment on the '822 patent infringement claims are the same ones directed against the '572 patent infringement claim: Pro-Line contends there are no disputes of fact concerning Johnson Products' claims of literal infringement, direct infringement under the doctrine of equivalents, inducement of infringement, and contributory infringement. The court addresses these arguments below.

a. Literal Infringement

Pro-Line argues that there is no direct infringement because its products lack the following elements from claim 1 of the '822 patent: (1) an aqueous nonacidic cosmetic vehicle and (2) hydrolyzed proteins that are in the salt form and characterized by a positive charge. (Pro-Line's Summary Judgment Motion on Non-Infringement of the '822 Patent (hereinafter "Pro-Line's '822 Non-Infringement Motion"), at 12.) To infringe claim 1 of the '822 patent, Pro-Line claims, its products must contain a non-acidic cosmetic vehicle with either a non-proteinaceous, non-polymeric quaternary nitrogen-containing compound in salt form or a hydrolyzed protein in salt form, wherein each compound is characterized by a positive charge. (*Id.* at 27.)

Pro-Line insists that the "Soft & Beautiful" and "Just for Me" hair relaxer kits are acidic and thus fall

outside the scope of the claims of the '822 patent. Pro-Line offers the affidavits of the two experts, Dr. Lochhead and Dr. Wolfram, for support. For instance, measurements by Dr. Wolfram of the pH values in the "Soft & Beautiful" and "Just for Me" pre-relaxer treatments resulted in readings at 6.0 to 6.5. (Pro-Line's Reply Brief to Johnson Products' Brief in Response to Pro-Line's Motion for Summary Judgment on Non-Infringement of the '822 Patent (hereinafter "Pro-Line's '822 Non-Infringement Reply"), at 29.) For aqueous solutions, pH values greater than 7 indicate that there are more hydroxyl ions than hydrogen ions in the solution, making it non-acidic. (*Id.*) As such, Pro-Line argues, the '822 patent does not cover its products: claim 1 of the '822 patent requires a non-acidic composition, and Pro-Line's products are acidic.FN18

FN18. Pro-Line also apparently contends that claim 1 of the '822 patent is scientifically unsound because the claim simultaneously covers non-acidic compositions, which would have a pH greater than 7, but are characterized as being stable when in an aqueous medium at a pH of at least about 6.1. (*See* Pro-Line's '822 Non-Infringement Reply, at 29.) This argument is more appropriately addressed under the summary judgment motion for invalidity of the '822 patent, and the court accordingly reserves discussion of this issue until then.

Johnson Products has presented evidence, including affidavits from experts and the two ingredient labels, suggesting that the "Soft & Beautiful" and "Just for Me" hair relaxer kits, in fact, contain every limitation of claims 1, 4, 10, and 11 of the '822 patent. (*See* Johnson Products' Response, at 32-43.) Specifically, Johnson Products counters that Pro-Line's products contain the aqueous nonacidic cosmetic vehicle required by claim 1 of the '822 patent because they contain deionized water, which is nonacidic under the '822 patent definition. (Johnson Products' Response, at 34.) The patent specification defines "nonacidic" as "vehicles containing no ionizable hydrogen-containing substances capable of neutralizing residual alkali on the hair from the hair straightener product." ('822 patent, col. 3, line 66-col. 4, line 2.) Citing the expert testimony from both sides, Johnson Products explains that one of the ingredients in Pro-Line's Pre-Relaxer Treatment contains a monomer that is capable of neutralizing residual alkali, but that it loses that capability when connected with DMDAAC and acrylamide as part of the Polyquaternium-39 polymer. (Johnson Products' Response, at 34-35.) For instance, Dr. Lochhead, Pro-Line's expert, testified that the Polyquaternium-39 found in the Pre-Relaxer Treatment contains acrylic acid, which is capable of neutralizing residual alkali on its own. (Lochhead Dep., at 111, Ex. 36 to Johnson Products' Response). Similarly, Dr. Wolfram confirmed that acrylic acid, though capable of neutralizing residual alkali on its own, is incapable of doing so when part of the Polyquaternium-39 polymer. (Wolfram Aff. para. 39, Ex. 17 to Johnson Products' Response).

Pro-Line also attempts to read the prosecution history of the parent to the '822 patent (the '860 patent) into the specification of the claims of the '822 patent. In particular, Pro-Line notes that the rejected claim 33 of the '860 patent was amended to limit the pH to compositions in the range of 8 to 11 and argues that this amendment must also apply to the '822 patent. (Pro-Line's '822 Non-Infringement Motion, at 6-8.) For the reasons discussed above, however, this court has concluded that the '822 patent is not limited by the prosecution history of the '860 patent. Accordingly, a dispute exists over whether the claims in the '822 patent cover the chemical compositions in Pro-Line's hair relaxer kits.

Finally, Pro-Line claims that its hair relaxer kits prevent the "dull sheen" problem caused by calcium deposits from the use of calcium hydroxide to relax the hair, an issue that the '822 patent does not address. (Pro-Line's '822 Non-Infringement Motion, at 28-29 .) The apparent inference is that this additional feature precludes a determination that Pro-Line's products infringe the '822 patent. As the Federal Circuit has

explicitly observed, however, the "addition of features does not avoid infringement, if all of the elements of the patent claims have been adopted." *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 945 (Fed.Cir.1990). Pro-Line products' capacity to eliminate the "dull sheen" problem does not defeat a charge of infringement if the elements of the claim are also present.

Without a more complete understanding of the chemistry involved here, the court is unable to conclude that there are no disputes of fact as to whether Pro-Line's hair relaxer kits contain every limitation in the claims of the '822 patent. Summary judgment is therefore denied.

b. Doctrine of Equivalents

As before, because the court finds disputes of fact concerning Johnson Products' claim of literal infringement, the court need not reach the question of whether Pro-Line is entitled to summary judgment on a claim of infringement under the doctrine of equivalents.

c. Inducement of Infringement

For the same reasons Pro-Line sought summary judgment on the inducement claim with respect to the '572 patent, Pro-Line also argues it is entitled to summary judgment on the claim that it induced infringement of claims 12 and 13 of the '822 patent. Claims 12 and 13 cover the method that customers are to follow in using the hair relaxer. FN19 Johnson Products argues that Pro-Line's instructions to customers to use the pre-treatment relaxer, the creme relaxer, and then the neutralizing shampoo on their heads induce infringement of claims 12 and 13 of the '822 patent. Pro-Line first contends that there is no direct infringement because its pre-relaxer treatment does not contain the composition of claim 1. (Pro-Line's '822 Non-Infringement Motion, at 29.) Next, Pro-Line claims that *Picker International* precludes Johnson Products from asserting an inducement of infringement claim because it is also making a direct infringement claim. (*Id.*)

FN19. Claim 12 provides:

A method for straightening hair comprising the steps of:

- (a) first applying to the hair a composition of claim 1;
- (b) then applying to the resulting hair a highly alkaline hair straightener for a time sufficient to at least partially straighten said hair;
- (c) rinsing substantially all of said straight hair with a neutralizing shampoo having a neutral to acidic pH.

Claim 13 provides:

A method of claim 12 wherein the applied composition in step (a) has a pH of at least about 6.1.

As discussed above, Johnson Products has presented sufficient evidence to demonstrate that there is a genuine issue of material fact on whether Pro-Line's Pre-Relaxer Treatment contains each of the limitations in claim 1. (*See* Johnson Products' Response, at 43-45.) Pro-Line fails to respond to Johnson Products' specific claim that Pro-Line's written instructions induce infringement of the '822 patent. Furthermore, *Picker International* does not apply to the claims of inducement of infringement here because Johnson Products has not alleged direct infringement of claims 12 and 13 of the '822 patent, which are the claims at issue in the inducement of infringement charge. (*Id.* at 45.) Accordingly, the court denies summary

judgment on this basis.

d. Contributory Infringement

Pro-Line challenges Johnson Products' claim of contributory infringement of the '822 patent on the same grounds that it raised against the '572 contributory infringement claim. Specifically, Pro-Line argues again that there is no direct infringement, as required for liability under contributory infringement. (Pro-Line's '822 Non-Infringement Motion, at 30.) Additionally, Pro-Line contends that its products fall under the purview of the "staples of commerce" defense. (*Id.* at 31.)

As noted above, assuming Johnson Products' customers may be deemed third parties for purposes of contributory infringement, there is a genuine issue of material fact regarding direct infringement of the '822 patent by a third party. Further, the "staples of commerce" defense fails because it improperly focuses on the individual elements of Polyquaternium-39 and Merquat-295 rather than on the complete product of the Pre-Relaxer Treatment and Creme Relaxer of the hair relaxer kits. Although the court has reservations concerning the application of this theory to the facts here, Pro-Line's arguments do not support the grant of summary judgment to it.

4. Invalidity of the '822 Patent

Pro-Line argues that the '822 patent is invalid for three reasons: (1) lack of utility under 35 U.S.C. s. 101, (2) indefiniteness under 35 U.S.C. s. 112, or (3) prohibitive new matter under 35 U.S.C. s. 112 or lack of enablement under 35 U.S.C. s. 112.FN20 (Pro-Line's Motion for Summary Judgment on Invalidity of the '822 Patent (hereinafter "Pro-Line's '822 Invalidity Motion"), at 2-3.)

FN20. The court notes that Pro-Line's brief did not directly address the issue of enablement. Accordingly, the court considers only the first three grounds listed.

a. Utility

Only "useful" inventions may be patented. 35 U.S.C. s. 101. To meet the utility requirement, a new product or process must be shown to be "operable," meaning that it must be "capable of being used to effect the object proposed." *Stiftung v. Renishaw PLC*, 945 F.2d 1173, 1180 (Fed.Cir.1991) (quoting *Mitchell v. Tilghman*, 86 U.S. (19 Wall.) 287, 396, 22 L.Ed. 125 (1873)). Utility only requires that the claimed invention meet at least one stated objective. *Raytheon*, 724 F.2d at 958. The utility determination is made as a matter of fact. *Id.* at 956.

Pro-Line's "no utility" argument rests on its assertion that the stated purpose of the composition in the '822 patent is to simultaneously texturize and strengthen straightened or relaxed hair. (Pro-Line's '822 Invalidity Motion, at 6.) Pro-Line draws the court's attention to one of the examples in the '822 patent, which states that "this study was unable to detect strengthening benefits from applying this particular non-acidic composition" when the pH of the hair texturing and strengthening composition was about 6.1. (*Id.*) Then, in a somewhat nonlinear display of logic, Pro-Line concludes that all claims of the patent were limited to a pH of at least 6.1 and hence cannot meet the supposed purpose of simultaneously texturing and strengthening. (*Id.*)

Johnson Products counters that the pH limitation of 6.1 is only relevant to claims 11 and 13 of the '822

patent. Claims 1, 4, 10, and 12 merely require that the composition be "stable when in an aqueous medium at a pH of at least 6.1," not that the composition itself be limited to a pH of 6.1. (Johnson Products' Response, at 51 .) As for claims 11 and 13, which require that the composition have a pH of at least 6.1, Johnson Products contends that Pro-Line's sole source of authority is an out-of-context quote. (*Id.*) More specifically, each of the examples in the patent illustrates a different point; one may illustrate the texturing benefit while another may show the conditioning benefit. (*Id.*) Explaining the complete quote, Johnson Products contends that it only indicates that there were texturing benefits at a pH of 6.1, through the study did not find strengthening benefit. (*Id.* at 52.) The absence of a strengthening benefit finding in one study, Johnson Products argues, is not enough to establish a lack of utility; the test for utility demands that just one objective be met. (*Id.*)

If all claims in the '822 patent were limited to compositions at a pH of 6.1 and the stated objective were simultaneous texturing and conditioning, Pro-Line's position would have some force. In light of the determination from the *Markman* hearing that the compositions are not limited to a particular pH range,FN21 however, and the further determination that the patent does not call for simultaneous texturing and conditioning, Pro-Line has not established the absence of disputes of fact concerning its "no utility" argument. Because there are genuine issues of material fact about the utility of the '822 patent with respect to claims 1, 4, 10, 11, 12, and 13, summary judgment on this basis is denied.

FN21. The court notes that Pro-Line's claims have been somewhat inconsistent with regard to the pH range of the composition in the '822 patent. For example, during the *Markman* hearing, Pro-Line appeared to be urging the court to find that the patent only covers compositions at a pH of 8 to 11. In the present motion for summary judgment, however, Pro-Line seems to be advocating for a finding that all claims in the '822 patent are limited to a pH of at least 6 .1.

b. Indefiniteness

As its second challenge to the validity of the '822 patent, Pro-Line argues that the patent is invalid for indefiniteness because its claims do not correspond in scope with what the patentee regarded as the invention. (Pro-Line's '822 Invalidation Motion, at 7.) Citing *In re Corkill*, 771 F.2d 1496, 1501 (Fed.Cir.1988), Pro-Line contends that the '822 patent is invalid for indefiniteness. The *In re Corkill* court affirmed the Patent Office's rejection of a patent for indefiniteness as it was unclear whether the particle sizes in the patent referred to single crystals or agglomerates comprised of smaller crystals. *Id.* at 1500. The patentee argued that simple experimentation would show which particles should not be used, and only those particles that worked would be covered by the claims. *Id.* at 1501. Rejecting that contention, the court found that the claims did not correspond in scope to what the patentee regarded as the claimed invention and were thus invalid under section 112. *Id.*

Pro-Line similarly notes the testimony of the inventor of the '822 patent, Mr. Akhtar, in which the inventor agreed that hair undergoing a highly alkaline straightening procedure is simultaneously textured and strengthened by compositions with a pH of at least 8 or greater. (Pro-Line's '822 Invalidation Motion, at 8; *see* Akhtar Dep., at 16-17, Ex. D to Pro-Line's Exhibits in Support of its Motions for Summary Judgment.) In other words, Pro-Line urges, the specification in the '822 patent calling for a pH of 6.1 would not provide the strengthening benefits that the inventor considered a component of the invention. (*Id.*) As further support for the proposition that the patent should include only compositions at a pH of 8 to 11, Pro-Line again relies on the file history of the parent application of the '860 patent, in which claim 33 was amended

to cover compositions at a pH range of 8 to 11. (*Id.*) Lastly, Pro-Line summarily concludes that the claims are invalid for indefiniteness because the claimed compounds that would be stable when in an aqueous medium at a pH of at least about 6.1 cannot be identified by testing and that one skilled in the art could not determine whether a given compound was within the scope of the claims. (*Id.* at 10.)

Johnson Products first responds that *In re Corkill* is inapposite because the case concerns a rejected patent claim which, unlike the '822 patent, does not carry a presumption of validity. (Johnson Products' Response, at 53-54, n. 21.) Courts have recognized that a valid patent may permit some experimentation. *See Johns Hopkins University*, 152 F.3d 1342, 1998 WL 466633, at *16. If there is a question of how much experimentation is allowable, there is a dispute that precludes summary judgment. As determined above, a genuine issue of material fact exists as to whether a composition at a pH of 6.1 is relevant to claims 11 and 13 and would provide strengthening benefits. Additionally, Johnson Products offers evidence that one skilled in the art would understand how to determine whether a compound is stable in an aqueous medium at a pH of "at least about 6.1." FN22 Thus, Pro-Line's position is contravened by evidence on the record, and summary judgment is accordingly denied.

FN22. According to Dr. Wolfram, the test would consist of placing the compound in an aqueous medium with a pH of at least 6.1 and then observing whether or not the compound changes. (Johnson Products' Response, at 55.) If it changes into another compound by losing or gaining certain molecules, the chemist will conclude that it is not stable. (*Id.*)

c. Prohibitive New Matter

Pro-Line's final validity challenge relates to the doctrine of prohibitive new matter. Under 35 U.S.C. s. 132, "no amendment shall introduce new matter into the disclosure of the invention." The test for determining the sufficiency of support in a parent application is whether the disclosure of that parent application "reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter..." *In re Kaslow*, 707 F.2d 1366, 1375 (Fed.Cir.1983). Whether information is new matter depends on "the nature of the disclosure, the state of the art, and the nature of the added matter." *Brooktree Corp. v. Advanced Miro Devices, Inc.*, 977 F.2d 1555, 1574 (Fed.Cir.1992). Furthermore, claims to subject matter disclosed in the earlier patent specification cannot be considered new matter. *Kolmes v. World Fibers Corp.*, 107 F.3d 1534, 1539 (Fed.Cir.1997). A patent examiner's decision to allow an amendment without a rejection as to new matter "is entitled to an especially weighty presumption of correctness." *Brooktree*, 977 F.2d at 1574.

Pro-Line argues that the phrase "being stable when in an aqueous medium at a pH of at least about 6.1" in claim 1 of the '822 patent is "prohibitive new matter" because the '822 patent is a continuation patent and the parent patent (the '860 patent) did not describe this pH level. (Pro-Line's '822 Invalidation Motion, at 10.) By subsequently adding a pH range of at least about 6.1, the argument follows, Johnson Products added prohibitive new matter to the '822 continuation patent. (*Id.*)

As Johnson Products correctly notes, however, the earlier '860 patent reasonably conveys that the inventor knew of the effectiveness of hair straightening and texturing of compositions in an aqueous medium with a pH of about at least 6.1. Thus, claim 1 of the '822 patent does not contain prohibitive new matter. (Johnson Products' Response, at 56.) Moreover, the specifications of the '860 and the '822 patents both discuss the use of an aqueous medium that had an average pH of 6.18. (*Id.*) Most important, the specification of the '860 patent provides the support for claiming aqueous mediums with pHs of at least 6.1 in the continuation

application. (Id.) Genuine issues of material fact about whether the '822 patent contains prohibitive new matter therefore preclude the granting of summary judgment.

CONCLUSION

For the aforementioned reasons, the court denies Pro-Line's motions for summary judgment. The parties are urged to explore the possibility of settlement and directed to appear for a status conference on October 27, 1998, at 10:00 a.m.

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