United States District Court,
E.D. Pennsylvania.

ASTRAZENECA AB, et al,
Plaintiffs.
v.
MUTUAL PHARMACEUTICAL COMPANY,
INC. Defendant.

Aug. 19, 2002.

Patentees brought infringement suit against the filer of an abbreviated new drug application (ANDA) which sought approval from Food and Drug Administration (FDA) to manufacture generic versions of patentees' products. Following *Markman* hearing to construe patent claims, the District Court, Lowell A. Reed, Jr., Senior District Judge, held that: (1) term "nonionic solubilizer" referred to a nonionic compound that increased the solubility of a substance in a particular solvent; (2) term "extended release" referred to release of active ingredient from the dosage form over time in a manner that reduced the dosage frequency; (3) references to a "solution or dispersion of an effective amount of the active compound" and to "dissolving or dispersing an effective amount of the active compound" did not require that the active compound be solubilized or dispersed within the nonionic solubilizer after the solid preparation was in its finished form; (4) term "hydrophilic gel system" referred to a delivery system of a water soluble gel- and matrix-forming material; and (5) term "pharmaceutical dosage unit" referred to a dosage form such as a tablet or capsule containing a dose of a drug.

Ordered accordingly.

6,048,548. Cited.

Eric Kraeutler, John V. Gorman, Morgan Lewis & Bockius, Philadelphia, PA, Errol B. Taylor, Amr O. Aly, Lisa B. Baeurle, Fitzpatrick Cella Harper & Scinto, New York City, for Plaintiffs.

Robert F. Green, Leydig, Voit & Mayer, Chicago, IL, John J. Higson, Thomas S. Biemer, Dilworth, Paxson, LLP, Philadelphia, PA, Christopher T. Griffith, Leydig Voit & Mayer Ltd., Chicago, IL, for Defendant.

CONCLUSIONS OF LAW REGARDING PATENT CLAIM CONSTRUCTION

LOWELL A. REED, JR.**, Senior District Judge.**

Plaintiffs, Aktiebologet Hassle, KBI-E Inc., KBI Inc., AstraZeneca AB, and AstraZeneca LB, (collectively referred to as "Astra" or "plaintiffs") filed this patent infringement suit against defendant Mutual Pharmaceutical Company, Inc. ("Mutual" or "defendant"), alleging that under 35 U.S.C. s. 271(e)(2), Mutual is infringing United States Patent No. 4,803,081 ("the '081 patent"), by filing its Abbreviated New Drug

Application ("ANDA") seeking approval from the Federal Drug Administration ("FDA") to manufacture, use and sell Mutual's proposed Felodipine 10 mg, 5mg, and 2.5mg tablets products as generic versions of plaintiffs' products. The '081 patent is entitled "New Pharmaceutical Preparations With Extended Release," and deals with pharmaceutical extended release preparations of active compounds with very low solubility. In total, the following six claims of the '081 patent are at issue in this lawsuit: 8, 12, 14, 15 and 17. FN1

FN1. Astra argues that claim 10 is also asserted in this litigation. This issue is addressed below.

A *Markman* hearing was held on April 30, 2002, in which the parties presented oral argument as to the proper construction of the disputed claim language in the claims at issue. The parties also submitted a series of briefs, deposition transcripts and proposed claim constructions to the Court, all of which were considered by this Court in making the claim constructions that follow. On each claim term to be construed, the parties have submitted many arguments and have pointed to many portions of the intrinsic and extrinsic record in their briefs, proposed claim constructions, and oral presentations. While the Court has considered all of the arguments and citations of the parties, I may not reiterate all of them in full for each claim term.

I. THE LAW OF PATENT CLAIM CONSTRUCTION

[1] In general, a patent must describe the scope of the patentee's invention so as to "secure to [the patentee] all to which he is entitled, [and] to 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) (internal quotation omitted) (alteration in original). This is accomplished through the specification of the patent, which should describe the invention in clear terms so that a person of ordinary skill in the art of the patent may make and use the invention, and the claims of the patent, which should "particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention." FN2 35 U.S.C. s. 112.

FN2. The parties have stipulated that for the purposes of the *Markman* proceeding: "The person of ordinary skill in the art would have a Ph.D. (or equivalent) in a discipline relating to the pharmaceutical sciences, for example, chemistry, pharmacology or biochemistry, and at least 3 to 6 years pharmaceutical formulation experience."

[2] [3] In *Markman,* the Supreme Court, affirming the Court of Appeals for the Federal Circuit, held that construction of patent claims is exclusively within the province of the court to determine as a matter of law. 517 U.S. at 372, 116 S.Ct. 1384. To complete the task of claim construction, a court may draw on the canons of construction that can be sifted from the decisions of the Court of Appeals for the Federal Circuit spanning before *Markman* and beyond. In construing the claims of a patent, a court should consider the claim language, the specification, and, if offered, the prosecution history, which are collectively considered intrinsic evidence of the meaning of the claim terms. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995). As the public record before the United States Patent and Trademark Office ("PTO") upon which the public is entitled to rely, the intrinsic evidence is the most important source for determining the meaning of claim terms. *See* Vitronics Corporation v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed.Cir.1996). Under some circumstances, a court may also consult evidence extrinsic to the patent, such as technical dictionaries or expert testimony, to interpret the claims. *See* id. at 1583.

A. Claim Language

[4] [5] [6] [7] [8] [9] Claim construction begins by looking to the claim language itself to define the scope of the patent. *See* Bell Atlantic Network Services, Inc. v. Covad Comm. Group, Inc., 262 F.3d 1258, 1267 (Fed.Cir.2001). A technical term used in a patent is construed as having "the meaning a person of ordinary skill in the field of the invention would understand it to mean." *Id*. Unless otherwise compelled, a court should give full effect to the ordinary meaning of claim terms, even if the terms are broad. *See* Johnson Worldwide Assoc., Inc. v. Zebco Corporation, 175 F.3d 985, 989 (Fed.Cir.1999). The ordinary meaning of a term may be established through dictionary definitions. *See* CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002). "General descriptive terms will ordinarily be given their full meaning; modifiers will not be added to broad terms standing alone." Johnson Worldwide, 175 F.3d at 989. Where the claim language is clear on its face, the remaining intrinsic evidence is considered only to determine whether a deviation from that clear definition is specified. *See* Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1331 (Fed.Cir.2001). Where the language lacks clarity, then the remaining intrinsic evidence is viewed for resolving that ambiguity. *See id*.

B. Specification

[10] [11] After examining the words of the claim, the court is directed to turn to the specification to determine whether any terms have been used in a manner which is inconsistent with the ordinary meaning. *See* Vitronics, 90 F.3d at 1582. While terms are generally given their ordinary meaning, "[c]laims must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979; *see also* Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1466 (Fed.Cir.1998) ("Although claims are not necessarily restricted in scope to what is shown in a preferred embodiment, neither are the specifics of the preferred embodiment irrelevant to the correct meaning of claim limitations."). The relationship between the claims and the specification is illustrated by the following pair of claim construction canons: "(a) one may not read a limitation into a claim from the written description, but (b) one may look to the written description to define a term already in a claim limitation, for a claim must be read in view of the specification of which it is a part." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed.Cir.1998). At times, the line between reading a claim in light of its specification and reading a limitation into the claim from the specification is a fine one. *See* Interactive Gift, 256 F.3d at 1331. Thus, this Court is mindful that the specification is examined to discern the meaning of the claim as used by the patentee in the context of the entire invention and not merely to narrow the claim. *See id*.

[12] While additional limitations may not be imported into a claim from the specification, a court may construe a limitation specifically recited in a claim in light of the specification. *See* Phonometrics, 133 F.3d at 1466. Thus, in order to inject a definition into a claim from the written description, the claim must explicitly contain a term in need of definition. *See* Renishaw, 158 F.3d at 1248, 1252 (noting that passages referring to the preferred embodiment cannot be read into the claim without some "hook"). Further, claim terms should not be narrowed by the content of the specification "unless the language of the claims invites reference to those sources." Johnson Worldwide, 175 F.3d at 990 (noting that there "must be a textual reference in the actual language of the claim with which to associate a proffered claim construction").

[13] [14] While there is a "heavy presumption" in favor of giving terms their ordinary meaning, the presumption can be overcome if (1) the patentee chooses to be his own lexicographer, or (2) a claim term so deprives the claim of clarity that there is " 'no means by which the scope of the claim may be ascertained from the language used.' " Bell Atlantic, 262 F.3d at 1268 (quoting Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999)). In the first situation, the court must examine intrinsic evidence to determine if the patentee gave a term an unordinary meaning. *See id*. The specification will act

as a dictionary " 'when it expressly defines terms used in the claims or when it defines terms by implication.' " *Id*. (quoting Vitronics, 90 F.3d at 1582). Thus, the specification is "highly relevant" and usually "dispositive" in construing claim terms. *Id*.

[15] Where the specification is used to redefine the meaning of a particular term, the intrinsic evidence must " 'clearly set forth' " or " 'clearly redefine' " the term in such a way that one reasonably skilled in the art is on notice that the patentee intended such redefinition. Bell Atlantic, 262 F.3d at 1268 (quoting Elekta Instr. v. O.U.R. Scientific Int'l, 214 F.3d 1302, 1307 (Fed.Cir.2000); *N*. Telecom v. Samsung, 215 F.3d 1281, 1287 (Fed.Cir.2000)). The written description must demonstrate an " 'express intent to impart a novel meaning' to claim terms." *Id*. (quoting Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1353 (Fed.Cir.2000); Optical Disc Corp. v. Del Mar Avionics, 208 F.3d 1324, 1334 (Fed.Cir.2000)). *Cf*. Johnson Worldwide, 175 F.3d at 991 (term used in a variety of ways in specification may be indicative of breadth of term rather than a limited definition).

[16] As to the second situation which may overcome a presumption that the term be construed to have its ordinary meaning, while a court generally construes claim terms consistent with their common meaning, a "common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty." Renishaw, 158 F.3d at 1250. Also, a court may resort to the specifications if a claim term lends itself to several common meanings; in such a situation "the patent disclosure serves to point away from the improper meanings and toward the proper meaning." *Id*.

C. Prosecution History

[17] This Court is also instructed to view the prosecution history to determine whether "the patentee has relinquished a potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference." Bell Atlantic, 262 F.3d at 1268. This history encompasses the entire record of all proceedings before the PTO, including express representations made by the patentee regarding the scope of the patent, as well as prior art cited therein which may give clues as to what the claims do not cover. *See id.;* Vitronics, 90 F.3d at 1582-83. Thus this information can be of "critical significance" in construing the claims. Vitronics, 90 F.3d at 1582.

[18] [19] [20] As with the specification, however, "[a]lthough the prosecution history can and should be used to understand the language used in the claims, it too cannot 'enlarge, diminish, or vary' the limitations in the claims." Markman, 52 F.3d at 980 (quoting Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 12 Otto 222, 26 L.Ed. 149 (1880)). A caveat: If a patentee takes a position before the PTO, such that a "competitor would reasonably believe that the applicant had surrendered the relevant subject matter," the patentee may be barred from asserting an inconsistent position on claim construction. Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1457 (Fed.Cir.1998); *see also* Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed.Cir.1996) (holding that patentee was estoppedfrom arguing that her "perforation means" encompassed "ultrasonic bonded seams" after she distinguished references that contained such seams). If a patentee distinguishes a reference on multiple grounds to the PTO, any one of these may indicate the correct construction of a term. *See* Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1477 n. * (Fed.Cir.1998). However, "[u]nless altering claim language to escape an examiner['s] rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage," that is, by making a statement that concedes or disclaims coverage of the claims at issue based on a piece of prior art. York Products, Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1575 (Fed.Cir.1996).

D. Extrinsic Evidence

[21] [22] [23] If the claims can be construed from the intrinsic evidence alone, it is not proper to rely on extrinsic evidence "other than that used to ascertain the ordinary meaning of the claim limitation." Bell Atlantic, 262 F.3d at 1258. In the rare circumstance that the court is not able to construe the claims after examining the intrinsic evidence, however, it may turn to extrinsic evidence to resolve any ambiguity. *See id*. Extrinsic evidence includes expert testimony, articles and testimony of the inventor. *See id*. As with the intrinsic evidence, extrinsic evidence may not be used to "vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or file history." *Id*. It is also proper to consult extrinsic evidence for the purpose of understanding the underlying technology. *See* Interactive Gift, 256 F.3d at 1332.

[24] Dictionaries and technical treatises, while they are technically extrinsic to the patent, hold a "special place" and in certain situations may be considered along with intrinsic evidence when determining the ordinary meaning of claim terms. Bell Atlantic, 262 F.3d at 1267. *See also* Dow Chem. Co. v. Sumitomo Chem. Co., Ltd., 257 F.3d 1364, 1372 (Fed.Cir.2001); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n. 6 (Fed.Cir.1996) ("Judges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionaries definitions when construing term claims, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."). Courts are warned, however, against using non-scientific dictionaries, " 'lest dictionary definitions ... be converted into technical terms of art having legal, not linguistic significance.' " Sumitomo, 257 F.3d at 1372.

II. CONSTRUCTION OF THE CLAIMS

The claims here presented to the Court for construction may be categorized into the following groups: (1) Nonionic solubilizer (Claims 1, 8, 12, 14, 15 and 17); (2) Extended release (Claims 1, 8, 12, 14, 15 and 17); (3) A solution or dispersion of an effective amount of the active compound; and dissolving or dispersing an effective amount of the active compound (Claims 1, 8, 12, 14, 15 and 17); (4) hydrophilic gel system (Claims 12, 14 and 15); and (5) pharmaceutical dosage unit (Claim 17).

Astra argues that claim 10 is also asserted in this litigation. Mutual contends that Astra never identified this claim during fact discovery. (Astra's Final Answer to Mutual's Interrogatories Nos. 1, 5 and 7, Def.'s Ex. E at 3-10.) Astra brings forth no argument as to why this Court should allow Astra to pursue a claim which Astra does not deny was excluded in discovery. This Court therefore concludes that claim 10 has not been asserted in this litigation.

A. Nonionic Solubilizer

[25] Claim 1 of the '081 patent provides: "A solid preparation providing extended release of an active compound with very low solubility in water copmrising [sic] a solution or dispersion of an effective amount of the active compound in a semi-solid or liquid *nonionic solubilizer,* wherein the amount by weight of the solubilizer is at least equal to the amount by weight of the active compound, and a release controlling system to provide extended release." (Emphasis added). The additional claims in which the term "nonionic solubilizer" are recited are dependent claims 8, 12, 14 and 15 and independent claim 17.

Astra argues that the term nonionic solubilizer should be construed as: "a nonionic compound that increases the solubility of a substance in a particular solvent." (Pls.' Mem. at 24.) Mutual contends that the proper

construction is: "nonionic surface active agents (i.e., surfactant) which, when mixed with the active (dihydropyridines such as felodipine and nifedipine) in a 1:1 to 1:10 active/surfactant ratio and diluted with water, preclude significant precipitation of the active (visible to the names eye or using photospectography) and, further, incorporate the active within a micelle structure." (Def.'s Mem. at 14.) Thus, the dispute really focuses on the term solubilizer as the parties do not dispute the meaning of nonionic.

Astra takes the position that its construction is consistent with the ordinary meaning of the term and that the intrinsic record does not indicate that the heavy presumption in favor of giving full effect to the ordinary meaning should be overcome. Solubilizer is defined in the dictionary as: "an agent that increases the solubility of a substance." *Merriam Webster's Third New International Dictionary* (1993). Solubility is defined as "the amount of a substance that will dissolve in a given amount of another substance." *Meriam-Webster's Collegiate Dictionary* available at http://www.m-w.com.FN3 Dissolve is defined as "to cause to pass into solution." Id. The parties agree that solubilizers fall into three categories: (1) surface active agents, referred to as surfactants, (2) co-solvents, and (3) complexation agents. (Pls.' Mem. at 11, Def. Mem. at 11, Tr. at 59.) The key issue is whether the '081 patent claims all groups of solubilizers, as urged by Astra, or whether the patent covers only surfactants, as urged by Mutual.

FN3. Solubilize is defined as "to make soluble or more soluble," *Meriam-Webster's Collegiate Dictionary* available at http://www.m-w.com, or "to make (a substance such as a fat or lipid) soluble or more soluble, especially in water, by the action of a detergent or other agent," *The American Heritage Dictionary of the English Language* (4th ed.2000) available at www.bartleby.com. Soluble is defined as "susceptible of being dissolved in or as if in a liquid and especially water." *Meriam-Webster's Collegiate Dictionary* available at http://www.m-w.com.

Mutual argues that the intrinsic record mandates that nonionic solubilizer be limited to surfactants. I begin with the specification. As explained above, the heavy presumption that terms be given their ordinary meaning can be overcome if a claim term completely lacks clarity or if the patentee chooses to be his own lexicographer. *See* Bell Atlantic, 262 F.3d at 1268 (quoting Johnson, 175 F.3d at 989). It is unclear to this Court on precisely which ground Mutual seeks to have the presumption overcome. Beginning with the first ground, the term solubilizer is easily found in the dictionary, and the parties agree that those skilled in the art would understand the term solubilizer to encompass all three groups of solubilizers: surfactants, co-solvents, and complexation agents. I therefore conclude that the scope of the claim term can be determined by the claim language. *See id*.

As to the alternate ground, as detailed above, in order to demonstrate that the inventor chose to be his own lexicographer, the specification must clearly express an intent to redefine the ordinary term. *See id*. Mutual presents three grounds in support of its argument that Astra has offered a special definition of solubilizer in the specification. First, Mutual contends that the specification clearly expresses an intent that surfactants are the only type of solubilizer which can be used in the invention. The specification provides: "The solubilizers suitable according to the invention are *defined* below.... The solubilizers suitable for the preparations according to the invention are semi-solid or liquid non-ionic *surface active agents*." (Col.3, lns. 5-6, 33-35) (emphasis added). Mutual contends that this language explicitly offers a definition of solubilizers which includes only surfactants. Mutual notes that the language employed is definitive, i.e., the patentee did not write "may be," "could be," or "are optionally" surfactants. Thus, contends Mutual, those skilled in the art, who are well aware of the differences between types of solubilizers, would understand the invention to be limited to surfactants.

Astra responds that this quote merely refers to the preferred embodiment, and it is well recognized that claims are generally not limited to the preferred embodiment. *See* Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1343-44 (Fed.Cir.2001); Interactive Gift, 256 F.3d at 1331-32; Karlin Technology Inc. v. Surgical Dynamics Inc., 177 F.3d 968, 973 (Fed.Cir.1999). Astra argues that Mutual is impermissibly attempting to limit the claims to specific examples provided in the specification. *See* Specialty Composites v. Cabot Corp., 845 F.2d 981 (Fed.Cir.1988) ("What is patented is not restricted to the examples, but is defined by the words in the claims.... The emphasis is on the suitability of any plasticizer that will achieve the specified properties, not on the particular class of plasticizers."). Astra contends that those skilled in the art recognize that Astra claimed all types of solubilizers. In support, Astra offers U.S. Patent No. 6,048,548 which provides: "[the '081 patent] describes compositions and processes for preparing controlled release formulations that include low solubility active ingredients ... dissolved in a liquid or semi-solid solubilizing agent." (Pls.' Ex. 44, Col. 2, lns. 11-15). Thus, contends Astra, the '548 patent inventor acknowledges that the '081 patent is not limited to surfactants. This Court agrees with Astra that the written description, by highlighting surfactants, does not expressly redefine the term solubilizer to include only surfactants. The specification appears to promote surfactants as the superior solubilizer but never explicitly provides that other solubilizers cannot work. In order to overcome the presumption, the specification must clearly redefine a term, and I therefore conclude that the specification does not limit the claim term to surfactants.

[26] Related to this argument, Mutual contends that because Astra failed to specifically mention polyethylene glycol 400 ("PEG 400"), a co-solvent, despite the fact that it conducted research using PEG 400, an inference should be drawn that PEG 400 was intentionally left out of the '081 patent because it failed to work and therefore Astra surrendered claiming this co-solvent.FN4 Thus, Mutual stresses that because the patentee listed only surfactants and not other types of solubilizers, Astra is limited to surfactants. As Astra points out, however, the patentee is not required to include in the description every instance of research and development into the patent specification. *See* Rexnord, 274 F.3d at 1344 ("Our case law is clear that an applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention.") (citation omitted). Just as patentees are generally not limited to claiming only the preferred embodiments, they are likewise not required to list all compounds used in the research process. Thus, Mutual's argument fails as a matter of law.

FN4. Whether the '081 patent claims the use of PEG-400 as a solubilizer is important because Mutual's proposed invention uses this type of solubilizer.

Third, Mutual argues that the specification clearly disclaims the use of any solubilizer which would cause any precipitation and that the claim term is further limited to an invention which incorporates the active within a micelle structure. The specification provides: "The mixture of active compound (drug) and solubilizer can be diluted with water or intestinal juice without significant precipitation of the dissolved drug. In the solution the drug is included in a micell[e] structure formed by the solubilizer. With other commonly used solubilizers or co-solvents dilution may cause precipitation." (Col.3, lns.8-14). Mutual takes the position that these words show that Astra has not claimed any solubilizer which would cause precipitation and because co-solvents are identified as a solubilizer that causes precipitation, Astra has disclaimed co-solvents.

Astra responds that this section of the specification identifies a test to see how well a chemical acts as a solubilizer for a particular active ingredient, and that this test is part of the well known description

requirement to include the preferred embodiment; the test, however, cannot be imported into the claims. This Court agrees with Astra that acknowledging that a co-solvent *may* cause a negative outcome does not constitute an express disavowal of those solubilizers which *may* cause this less desirable result. *See* Amerikam Inc. v. Home Depot Inc., 99 F.Supp.2d 810, 813 (W.D.Mich.2000) (reasoning that statement in specification that certain plastic part is less durable is not the same as stating that invention cannot be made of that plastic part). The specification never clearly indicates that a micelle-forming solubilizer is required for the invention to work, nor does it clearly indicate that "without significant precipitation" means *no* precipitation. Accordingly, I conclude that the claim term is not limited to a solubilizer which precludes significant precipitation of the active drug or to a solubilizer which incorporates the active within a micelle structure.

In summary, this Court concludes that the specification fails to unambiguously indicate that the patentee intended to redefine the term solubilizer. Accordingly, the specification supports the view that the term nonionic solubilizer includes all categories of solubilizers without any limitations.

I now turn to the prosecution history. As recited above, "Unless altering claim language to escape an examiner['s] rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage." York Products, 99 F.3d at 1575. Thus, the patentee must make a statement that concedes or disclaims coverage of the claims at issue based on a piece of prior art. In essence, Mutual argues that Astra overcame the initial rejection of the '081 patent as being obvious over the Kawata patent, (United States Patent No. 4,673,564, Pls.' Ex. 4, Def.'s Ex. B, (hereinafter "the Kawata patent")), by distinguishing the '081 patent as using a surfactant and not a co-solvent. Mutual contends that the sole difference between Kawata and the '081 patent is the use of surfactants in the latter. In essence, Astra argues that the '081 patent was not distinguished by particular chemicals being used; rather, it was distinguished as an entirely different system from the Kawata patent. Specifically, argues Astra, Kawata, unlike the '081 patent, does not disclose the possibility of a controlled-release preparation based upon a solution or dispersion of a drug in a nonionic solubilizer. In fact, argues Astra, Kawata teaches against solubilizers.

The Amendment Astra submitted to the PTO to overcome the initial rejection provides:

Kawata discloses preparations in which an *amorphous* medical material such as an *amorphous* nifedipine is combined with a "basic substance" and a solvent, mixed and then dried to form an amorphous powder which is then mixed with polyethylene oxide. Only one component of these formulations could be a "nonionic solubilizer" in the context of the present invention, however, in view of the *definition* on Page 4, line 33-Page 5, line 6, i.e., Kawata's *optional* 2nd component of the basic substance. Even if the drug in Kawata's formulations can be said to be dissolved or dispersed, however, it is not in the 2nd component alone, but principally in the *required* 1st component of the basic substance.

Furthermore, not a single example in Kawata discloses a preparation in which a nonionic solubilizer as *defined* herein is used in an amount by weight equal to or exceeding the amount of the drug.

(Amendment at 4-5, Pls.' Ex. 6 at AZ 82-83, Def.'s Ex. C at AZ 82-83 (hereinafter "Amendment")) (underline in original; italicize added). The reference to Page 4, line 33-Page 5, line 6 refers to that portion of the '081 specification quoted above which outlines suitable surfactants.

Mutual contends that by inserting the words "defined" and "definition" and referring to that portion of the specification which discusses only surfactants, Astra provided a special meaning for solubilizers. Astra

responds that the reference to the specification was made to demonstrate that while Kawata uses an optional component that *could* be a nonionic solubilizer, Kawata, unlike the '081 patent, does not use that component as a solubilizer; conversely, the citation is used to point out that the '081 patent, unlike the Kawata patent, uses solubilizers. Astra explains that Kawata teaches making sparingly soluble drugs *amorphous* in order to increase the dissolution rate; the amorphous form is attained through either micronization (also referred to as milling) of the active compound, (citing Col. 3, lns. 58-62 of the Kawata patent), or co-precipitating the active compound with what is called in the Kawata patent the first basic component, (citing Col. 2 ln. 64-Col. 3, ln. 9 of the Kawata patent). Astra notes that Kawata also teaches a second optional component, as noted in the above quoted portion of the Amendment, which can be used to aid in the co-precipitation process. Astra further explains that Kawata Example 2 (Col. 5, ln. 64-Col. 6 ln. 9 of the Kawata patent) demonstrates this second optional component using PEG 400. Thus, Astra explains that in writing the Amendment to the PTO, the inventors were informing the PTO that while Kawata uses PEG 400 as a second optional component, Kawata does not use PEG 400 as a solubilizer, but rather to aid in the co-precipitation process.

Mutual responds to Astra's detailed explanation with a conclusory and insubstantial argument that Astra's assertion that Kawata was distinguished as teaching an amorphous drug fails from a factual and legal perspective. Mutual fails to articulate reasons or point to specific portions of the prosecution history in support of its conclusory argument. Rather, Mutual focuses its position on the fact that the KawataExample 2 uses PEG 400 and that Astra surrendered the solubilizer that is used in Kawata. Mutual further argues that Example 2 discloses equal amounts of the co-solvent and the active drug, just as in the '081 patent. Mutual, however, never expressly denies that the two patents use completely different processes, and that Kawata does not use PEG 400 in Example 2 as a solubilizer. At the *Markman* hearing, this Court specifically asked defendant to show where in the Kawata patent PEG 400 was used as a solubilizer. (Tr. at 108). Defendant responded by directing the court to Example 2 and highlighting that PEG 400 is used; however, Mutual never explained how it is used *as a solubilizer*.

Mutual's argument is most weakened by the uncontested fact that the Kawata patent explicitly provides that the second optional component can be PEG 400 *as well as a surfactant:* "This pharmaceutical composition may further contain at least one basic substance (2nd component) selected from the group consisting of a *surface active agent, polyethylene glycol,* propylene glycol, glycerin, a glycerin fatty acid ester and vegetable oil." (Col. 1, ln. 66-Col. 2, ln. 2 of the Kawata patent) (emphasis added). Thus, as argued by Astra, it would not have been possible for Astra to distinguish the '081 patent on the ground that the '081 patent invention used a surfactant when the Kawata patent expressly teaches that a surfactant can be used. Mutual attempts to diminish the clear import of this uncontested fact by arguing that Kawata, in mentioning surfactants, only demonstrates that those skilled in the art know the difference between the types of solubilizers and would not confuse them. The problem with this rebuttal is that it ignores the true flaw in Mutual's argument: Astra could not distinguish its invention on the ground that Kawata does not teach a surfactant because, in fact, Kawata does claim the use of a surfactant as a possible optional second element.

Astra further highlights that while Kawata teaches the use of a surfactant (in addition to PEG 400, a co-solvent) to aid in co-precipitation, Kawata teaches against using either compound as a solubilizer: "the inventors of the present invention have found that a sustained release pharmaceutical composition of nicardipine can be obtained by using amorphous nicardipine *without adding any substance improving the solubility in the intestines*." (Col. 3, lns. 48-52 of the Kawata patent) (emphasis added). This Court found no response to this argument by Mutual.

In further support of its position, Astra highlights the following additional portion of the Amendment:

Kawata does not appreciate the possibility of a control release preparation based upon a solution or a dispersion of a drug in a nonionic solubilizer. Kawata requires the presence of the 1st component of the basic substance, and requires that the drug be in an amorphous form. The claimed invention relies on neither of these requirements. Kawata also expressly teaches that "no substance improving solubility in the intestines" is added (Col. 3, lines 48-52).

(Amendment at 5). This statement to the PTO is consistent with the arguments presented for claim construction. Astra has always taken the position that Kawata is distinguishable because it uses a different process from the process of the '081 patent which relies on solubilizers.

Mutual also points to this statement in the Amendment: "Thus, none of the references disclose materials in which solutions or dispersions of the active material in a nonionic *surfactant* are formed into a solid preparation with extended release." (Amendment at 8) (emphasis added). Mutual contends that this statement indicates that Astra defined its invention as one using only surfactants. Astra responds that this statement is merely a description of prior art (beyond Kawata) which use surfactants. The reference immediately preceding this statement cited by Mutual provides: "both [references] describe increased solubilization of griseofulvin in the presence of nonionic surfactants. There is no basis in the cited art which would lead a person skilled in the art to apply this teaching in a sustained release drug formulation." (Amendment at 7). Astra contends that the statement relied upon by Mutual was written to show that the surfactants previously used were not dissolving or dispersing the active material and were not formed into a solid preparation with extended release. Mutual contends that the passage on which it relies is not distinguishing only the secondary references which teach the use of surfactants, but all the references, including Kawata. While the language is not crystal clear, given the multiple references in which Astra describes its invention as using solubilizers and not specifically surfactants, I construe the passage on which Mutual relies as referring only to the secondary references which specifically taught the use of surfactants. In either event, however, this lone passage does not constitute an unambiguous disavowal of non-surfactant solubilizers.

In summary, this Court agrees with plaintiff that the prosecution history indicates that Astra did not distinguish its patent from Kawata (1) on the ground of a particular solubilizer because not only does Kawata use an entirely different process, but the specification teaches against solubilizers; and (2) the claims do not require surfactant type solubilizers because Kawata discloses both surfactants and co-solvents as possibilities for the optional second component. It is further noted that Astra points out that nowhere in the prosecution history did Astra define nonionic solubilizer as excluding PEG 400. I therefore conclude that the prosecution history does not limit the claim term nonionic solubilizer beyond its ordinary meaning.

Accordingly, the claim term nonionic solubilizer is construed as meaning: a nonionic compound that increases the solubility of a substance in a particular solvent.

B. Extended Release

[27] As recited above, claim 1 of the '081 patent provides: "A solid preparation providing *extended release* of an active compound with very low solubility in water copmrising [sic] a solution or dispersion of an effective amount of the active compound in a semi-solid or liquid nonionic solubilizer...." (Emphasis added). The term "extended release" is also recited in dependent claims 8, 12, 14 and 15. In addition, claim

17 provides: "A process for making a solid preparation that provides *extended release* of an active compound with very low solubility in water...." (Emphasis added).

Mutual argues that extended release is a relative term and that an examination of the specification is therefore needed for additional guidance. Astra argues that the term should be construed based on its ordinary meaning. Astra contends that extended release is generally understood in the art to mean releasing the active ingredient from the dosage form over time in a manner that reduces the dosage frequency as compared to immediate release dosage forms. As defined in the dictionary, extended means "drawn out in length especially of time," while release means: "to set free from restraint." *Merriam Webster's Third New International Dictionary* (1993).

Astra also points to various places in the record where Mutual has defined its own drug as having an extended release component without defining the term. Mutual represented to the FDA in its original ANDA application that one function of the component Hydroxypropyl Methylcellulose is to be an "[e]xtended [r]elease [a]gent." (Pl.'s Ex. 15 at M024966.) In describing its drug in a Product Development Report, Mutual explained that, "the matrix-forming and controlled-release agent (Methocel K100LV) ... would provide for the *extended drug release* properties of the finished felodipine tablets." (Pl.'s Ex. 14 at M036592) (emphasis added). In a Mutual Report on its drug, Mutual concluded that, "... the Mutual and Astra Merck (Plendil) 10 mg felodpine *extended-release* tablets are bioequivalent under fasting conditions." (Pl.'s Ex. 38 at M040290).

Mutual, after quoting extensively from the specification, concludes that "the intrinsic record appears to suggest that an *extended release dosage form* is a composition including one or more components that provide for prolonged release of a *pre-solubilized drug*." (Def. Mem. at 23-24) (emphasis added). As observed by plaintiff, the claim language does not include the term "extended release dosage form," rather, it is limited to extended release. Moreover, it is unclear where in the patent Mutual incorporated the term "pre-solubilized drug." Mutual recites portions of the specification without offering any substantive argument as to why the cited written description should narrow the term extended release.

This Court concludes that those skilled in the art would understand extended release to mean releasing the active ingredient from the dosage form over time in a manner that reduces the dosage frequency as compared to immediate release dosage forms. Further concluding that Mutual has not directed this Court in any persuasive way to any portion of the intrinsic record which would indicate that a varied construction should apply.

C. A solution or dispersion of an effective amount of the active compound; and dissolving or dispersing an effective amount of the active compound

[28] As recited above, claim 1 of the '081 patent provides: "A solid preparation providing extended release of an active compound with very low solubility in water copmrising [sic] *a solution or dispersion of an effective amount of the active compound* in a semi-solid or liquid nonionic solubilizer...." (Emphasis added). The highlighted term is incorporated into dependent claims 8, 12, 14, and 15. In addition, claim 17 provides: " ....dissolving or dispersing an effective amount of the active compound in a semi-solid or liquid nonionic solubilizer...."

Mutual argues that the claim limitations require clarification because the claims are directed toward "solid preparations," yet the claims require a solution or dispersion of the active compound in a liquid or semi-

solid nonionic solubilizer. Mutual contends that the claims alone suggest that the proper construction is one which requires that the active compound be solubilized or dispersed within the nonionic solubilizer not simply during the manufacture of the solid preparation (e.g., tablet), but after the solid preparation is in its finished form. In support, Mutual points to the following portion of the specification: "in the solution the drug is included in the micell-structure (sic) formed by the solubilizer.... The mixture of the drug and solubilizer is incorporated into a pharmaceutical formulation, which gives prolonged release." (Col 3, lns. 11-16).

Astra begins with the premise that the ordinary meanings of the terms "solution" and "dispersion" are apparent to those of skill in the art. A "solution" or "dispersion" is the dispersed or dissolved substance(s) and the medium in which it is dispersed or dissolved. Dissolve is defined in the dictionary as "to cause to pass into a solution," while disperse is defined as "to distribute (as fine particles) more or less evenly throughout a medium." *Meriam-Webster's Collegiate Dictionary* available at http://www.m-w.com. Astra notes that these terms are commonly used and were not coined in the '081 patent.

As observed by Astra, Mutual's construction attempts to exchange the word "solubilized" for "dissolved." As explained above, solubilize is defined as "to make soluble or more soluble," *Meriam-Webster's Collegiate Dictionary* available at http://www.m-w.com, or "to make (a substance such as a fat or lipid) soluble or more soluble, especially in water, by the action of a detergent or other agent," *The American Heritage Dictionary of the English Language* (4th ed.2000) available at www.bartleby.com. Thus, it is clearly evident that the terms solubilized and dissolved are not interchangeable.

This Court agrees with Astra that the claim terms do not contain an inherent conflict which requires a narrowed construction that the active compound be solubilized or dispersed within the nonionic solubilizer after the solid preparation is in its finished form. Nor did Mutual clearly articulate how the portion of the specification to which it cites, supports its proposed construction.

This Court therefore concludes that the terms "A solution or dispersion of an effective amount of the active compound" and "dissolving or dispersing an effective amount of the active compound" will be given their ordinary meaning: a solution or dispersion is the dispersed or dissolved substance(s) and the medium in which it is dispersed or dissolved.

D. Hydrophilic Gel System

[29] Claim 12 provides: "A preparation according to claim 1 wherein the release is controlled by a *hydrophilic gel system*." (Emphasis added). The term hydrophilic gel system is also incorporated into dependent claims 14 and 15.

Mutual contends that the term is not well understood by the claim language alone and points to the specification in support of its argument that a hydrophilic gel system should be construed as one of a number of pharmaceutically-acceptable compositions which include one or more water-soluble polymers that form a gelatinous layer around a tablet into which they are incorporated after exposure of the tablet to an aqueous environment, e.g., hydroxypropyl methylcellulose (HPMC). Mutual cites to the following portion of the specification:

According to the invention the solubilized drug is *preferably* combined with a hydrophilic gel system, namely a hydrophilic swelling matrix e.g. HPMC. This form of controlled release mechanism is a suitable

way to control the release of the micelles of drug and solubilizer.... Among the different hydrophilic materials tested, HPMC, hydroxypropyl methylcellulose, is the *best* gel-forming material.

(Col.3, lns.53-58, 60-62) (emphasis added).

Astra argues that this term is commonly used in the industry to mean a delivery system of a water soluble gel- and matrix-forming material. Astra points to the manufacturer's brochure for methocel, the commercially available brand of HPMC, in which the manufacturer explains that: "This handbook describes how to select and use METHOCEL products for controlled release of the drugs in *hydrophilic matrix systems*." (Pl.'s Ex. 26 at 3) (emphasis added). Astra also points out that Mutual's proposed invention uses HPMC, which is described in Mutual's Product Development Report as "the matrix forming agent." (Pl.'s Ex. 14 at M036589). Astra notes that the '081 patent specification, as quoted above, identifies HPMC as the preferred embodiment of hydrophilic gel systems. (Col.3, lns.53-58, 60-62) (*see also* Col. 2, lns. 44-53) (explaining how the hydrophilic gel systems work).

This Court concludes that those skilled in the art would recognize the term hydrophilic gel systems as recited in the '081 claims to mean a delivery system of a water soluble gel- and matrix-forming material and that Mutual has not directed this Court to any portion of the intrinsic record which indicates that this ordinary meaning should be varied.

E. Pharmaceutical Dosage Unit

[30] Claim 17 provides: "A process for making a solid preparation ... incorporating the resulting solution or dispersion into a suitable release controlling system to form a *pharmaceutical dosage unit*." (Emphasis added). Astra argues that the term pharmaceutical dosage unit should be given its ordinary meaning and construed as a dosage form such as a tablet or capsule containing a dose of a drug. Mutual contends that the '081 patent refers to tablets, capsules containing granular material, and gelatin-filled capsules (gel caps) as suitable oral dosage forms (citing the specification, Col. 4, lns. 11-26); accordingly, the limitation should be construed to include orally-administered pharmaceutical dosage forms, examples of which include tablets, capsules and gel caps. Astra acknowledges that claim 17 is directed to "solid preparations," but argues that Mutual's example of "gelatin-filled capsules (gel caps)" is not anywhere in the '081 patent; rather, the use of the phrase "gel tablets" in the specification refers to the preferred embodiment of a gelling matrix tablet, (citing Ex. 1, Col. 4, lns. 11-15).

This Court concludes that persons skilled in the art would recognize the term pharmaceutical dosage unit to mean a dosage form such as a tablet or capsule containing a dose of a drug, and that Mutual has not directed this Court to any portion of the intrinsic record which would indicate that this ordinary meaning should be varied.

III. CONCLUSION

The foregoing constitutes the Court's construction of the terms presented by the parties from the claims designated in connection with the *Markman* hearing. To the extent that the parties presented arguments concerning the validity of the '081 patent, this Court did not address those arguments, as this issue is premature.

An appropriate Order follows.

ORDER

AND NOW, this 19th day of August, 2002, upon consideration of the briefs, exhibits, and deposition testimony, as well as oral argument presented by the parties in connection with the *Markman* hearing, in which counsel for all parties participated, and upon consideration of the intrinsic and extrinsic records of the patent-at-issue as indicated in the foregoing Memorandum, it is hereby **ORDERED** that the meaning and scope of the patent claims asserted to be infringed and presented by the parties for construction are hereby determined as set forth in the foregoing Memorandum.

E.D.Pa.,2002.
Astrazeneca AB v. Mutual Pharmaceutical Co., Inc.