

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIBA SPECIALTY CHEMICALS
CORPORATION,

Plaintiff,

v.

HERCULES, INC., and CYTEC
INDUSTRIES, INC.,

Defendants.

Civil Action No. 04-293-KAJ

MEMORANDUM OPINION

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Wilmington, Delaware


JORDAN, District Judge

I. INTRODUCTION

This is a patent infringement case. Ciba Specialty Chemicals Corp. (“Ciba”) has sued Hercules, Inc. (“Hercules”) and Cytec Industries, Inc. (“Cytec”) (collectively “Defendants”), alleging infringement of two patents: U.S. Patent Nos. 5,167,766 (issued Dec. 1, 1992) (the “766 patent”) and 5,171,808 (issued Dec. 15, 1992) (the “808 patent”). Before me now are the parties’ requests for construction of the disputed claim language in those two patents, as well as the following motions. Ciba has filed a Motion for Partial Summary Judgment of Infringement of the ‘766 and ‘808 patents. (D.I. 277.) Hercules has filed a Motion for Summary Judgment of Noninfringement (D.I. 289) and a Motion for Partial Summary Judgment Limiting Damages (D.I. 284).¹ Jurisdiction is proper under 28 U.S.C. §§ 1331 and 1338.

For the reasons that follow, including my decision on claim construction, I will grant Hercules’s Motion for Summary Judgment of Noninfringement (D.I. 289). Accordingly, I will deny Ciba’s Motion for Summary Judgment of Infringement (D.I. 277)

¹Other motions are pending in this case. First, Cytec has filed a Motion to Join in Hercules’s Answering Brief in Opposition to Ciba’s Motion for Summary Judgment. (D.I. 314.) Because Ciba’s motion is denied, Cytec’s motion will be denied as moot. Second, Hercules has filed a Motion for a Postponement of Trial. (D.I. 343.) I note that the trial date has since been reset for August 21, 2006 (D.I. 383), and Hercules’s motion will therefore be denied as moot. Finally, Ciba has filed a Motion for Claim Construction (D.I. 274), which asks that I construe the disputed claim terms found in the patents-in-suit. That motion will be granted-in-part to the extent that I will construe the claim terms necessary for deciding the pending summary judgment motions. As to the other claim terms, the motion will be denied-in-part without prejudice. If the case will proceed to trial on the counterclaims of Hercules and Cytec, see *infra* note 2, the parties will inform the court of which additional terms must be construed prior to trial.

and grant summary judgment of noninfringement for Cytec. I will deny as moot Hercules's Motion for Partial Summary Judgment Limiting Damages (D.I. 284).²

II. BACKGROUND

A. *Procedural Background*

Ciba filed a complaint for patent infringement against Hercules and Cytec on May 7, 2004. (D.I. 1.) In its complaint, Ciba alleges infringement of the '766 and '808 patents, which were originally assigned to American Cyanamid Company ('766 patent; '808 patent) and are now owned by Ciba (D.I. 1 at ¶ 8). Hercules and Cytec filed answers and counterclaims on November 17, 2004. (D.I. 9; D.I. 10.) Hercules has counterclaimed for declaratory judgments of noninfringement, invalidity, and unenforceability of the '766 and '808 patents. (D.I. 67.) Cytec has counterclaimed for declaratory judgments of noninfringement and that it is licensed under the '766 and '808 patents. (D.I. 10.) The parties are scheduled to try this case before a jury beginning on August 21, 2006. (D.I. 383.)

Ciba is asserting claims 1, 3, 5, 7, 9, 11, 13, 17, 19, 21, 23, and 25 of the '766 patent and claims 1, 6-8, 11, 13, 15, 17, and 20-21 of the '808 patent. (D.I. 286 at 1 n.2.) Claim 1 of each patent is an independent claim from which all other claims for each patent depend.

²Hercules's counterclaims as to invalidity and unenforceability and Cytec's counterclaims that it is licensed under the '766 and '808 patents remain to be considered, after this opinion. As noted in the accompanying order, the parties should confer and inform the court as to whether the case will proceed to trial on those counterclaims, as well as which, if any, additional terms of the two patents must be construed prior to trial.

B. *The Disclosed Technology*

The two patents in this case disclose methods and compositions relating to polymeric microparticles, also called microbeads. ('766 patent, 3:15-19; '808 patent, 2:3-12.) The patents disclose how such microparticles may be prepared using polymerization chemical reactions taking place in a water-in-oil inverse emulsion. ('766 patent, 3:40-68; '808 patent, 3:43-58.) Those polymeric microparticles may be used in solid-liquid separation processes, including papermaking. ('766 patent, 2:67-3:1; '808 patent, 1:13-19.)

Specifically, the '808 patent claims the microparticle compositions and the method for their production ('808 patent, 9:50-12:17), and the '766 patent claims methods for using microparticles in papermaking and the paper produced by those methods ('766 patent, 29:38-30:51).

III. **APPLICABLE LAW / STANDARD OF REVIEW**

A. *Patent Infringement*

A patent infringement analysis involves two steps: claim construction and then the application of the construed claim to the accused process or product. *Markman*, 52 F.3d at 976. The first step, claim construction, has been held to be purely a matter of law. *Cybor*, 138 F.3d at 1454-56. The second step, application of the claim to the accused product, is a fact-specific inquiry. See *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1332 (Fed. Cir. 2001) (Patent infringement, "whether literal or under the doctrine of equivalents, is a question of fact."). The patent owner has the burden of proving infringement by a preponderance of the evidence.

Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 758 (Fed. Cir. 1984) (citing *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1361 (Fed. Cir. 1983)). Summary judgment is appropriate in patent infringement suits when it is apparent that only one conclusion regarding infringement could be reached by a reasonable jury. See *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1323 (Fed. Cir. 2001).

B. Claim Construction

Patent claims are construed as a matter of law. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454-56 (Fed. Cir. 1998) (en banc). “[T]he words of a claim ‘are generally given their ordinary and customary meaning.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). That ordinary meaning “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313.

To determine the ordinary meaning of a term, the court should review “the same resources as would” the person of ordinary skill in the art. *Multiform Dessicants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998). Those resources include “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004).

“[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms.” *Phillips*, 415 F.3d at 1314. Both “the context in which a term is

used in the asserted claim” and the “[o]ther claims of the patent in question” are useful for understanding the ordinary meaning. *Id.*

“[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* at 1315 (quoting *Vitronics*, 90 F.3d at 1582). In short, the claims “must be read in view of the specification, of which they are a part.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). Thus, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

On occasion, “the specification may reveal a special definition given to a claim term . . . that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). The specification may also “reveal an intentional disclaimer, or disavowal, of claim scope by the inventor . . . [, which] is regarded as dispositive.” *Id.* (citing *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343-44 (Fed. Cir. 2001)).

The court “should also consider the patent’s prosecution history.” *Markman*, 52 F.3d at 980. “Like the specification, the prosecution history provides evidence of how the [Patent and Trademark Office] and the inventor understood the patent.” *Phillips*, 415 F.3d at 1317 (citing *Lemelson v. Gen. Mills, Inc.*, 968 F.2d 1202, 1206 (Fed. Cir. 1992)).

The court may rely on extrinsic evidence, which is “all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. In particular, “dictionaries, and especially technical dictionaries, . . . have been properly recognized as among the many tools that can assist the court in determining the meaning of particular terminology.” *Phillips*, 415 F.3d at 1318 (citing *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002)). However, extrinsic evidence is “less significant than the intrinsic record in determining “the legally operative meaning of claim language.” *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004) (quoting *Vanderlande Indus. Nederland BV v. Int’l Trade Comm’n*, 366 F.3d 1311, 1318 (Fed. Cir. 2004)).

During claim construction, “[t]he sequence of steps used by the judge in consulting various sources is not important; what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law.” *Phillips*, 415 F.3d at 1324.

C. *Summary Judgment*

Pursuant to Federal Rule of Civil Procedure 56(c), a party is entitled to summary judgment if a court determines from its examination of “the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any,” that there are no genuine issues of material fact and that the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). In determining whether there is a genuine issue of material fact, a court must review the evidence and construe all

inferences in the light most favorable to the non-moving party. *Goodman v. Mead Johnson & Co.*, 534 F.2d 566, 573 (3d Cir. 1976). However, a court should not make credibility determinations or weigh the evidence. *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000). To defeat a motion for summary judgment, the non-moving party must “do more than simply show that there is some metaphysical doubt as to the material facts.” *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 586-87 (1986) (internal citation omitted). The non-moving party “must set forth specific facts showing that there is a genuine issue for trial.” Fed. R. Civ. P. 56(c). “Where the record taken as a whole could not lead a rational trier of fact to find for the non-moving party, there is no genuine issue for trial.” *Matsushita*, 475 U.S. at 587 (internal citation omitted). Accordingly, a mere scintilla of evidence in support of the non-moving party is insufficient for a court to deny summary judgment. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 252 (1986).

IV. DISCUSSION

A. Claim Construction

The parties seek the construction of several claim terms, but here I will limit the discussion to the terms that are dispositive for the pending summary judgment motions as to infringement. For the ‘808 patent, the parties dispute the meaning of “cross-linking agent.” For the ‘766 patent, the parties dispute the meaning of “microbead.”

1. *The '808 Patent*

Ciba's case for infringement of the '808 patent turns on the meaning of "cross-linking agent," a term that is present in all of the claims of that patent. Claim 1 of the '808 patent, from which all the other claims depend, reads:

A composition comprising cross-linked anionic or amphoteric polymeric microparticles derived solely from the polymerization of an aqueous solution of at least of [sic] one monomer, said microparticles having an unswollen number average particle size diameter of less than about 0.75 micron, a solution viscosity of at least about 1.1 mPa.s, a **cross-linking agent** content of about 4 molar parts to about 4000 parts per million, based on the monomeric units present in the polymer, and an ionicity of at least about 5 mole percent.

('808 patent, 9:51-60 (emphasis added).)

a. *The Parties' Proposed Constructions*

Hercules contends that a "cross-linking agent" is: "A chemical agent that is polyfunctional in that it has at least two double bonds, a double bond and a reactive group, or two reactive groups to link polymer chains together." (D.I. 286 at 19.) That construction is based on statements made in the '808 patent specification and prosecution history that, according to Hercules, limit the types of chemicals that may be used as cross-linking agents according to the patent.

By contrast, Ciba contends that nothing in the written description or prosecution history should be read to limit the scope of "cross-linking agent." Ciba argues that the term should mean "an agent that links the polymer chains together in use to constrain the size of the microparticle. Cross-linking agent does not dictate the specific method

by which the link is established, e.g., covalently, hydrophobically, ionically etc.” (D.I. 275 at 36.)

b. *The Court’s Construction*

I conclude, based on unambiguous statements made in the ‘808 patent specification and prosecution history, that Hercules’s construction of “cross-linking agent” is correct. Furthermore, during the patent prosecution, the patentee argued that two specific chemicals, polyoxyethylene sorbitol hexaoleate and sorbitan sesquioleate, were not cross-linking agents because they did not contain the necessary double bonds or reactive groups. Therefore, the term “cross-linking agent” will be construed as: “A chemical agent that is polyfunctional in that it has at least two double bonds, a double bond and a reactive group, or two reactive groups to link polymer chains together. Ployoxyethylene sorbitol hexaoleate and sorbitan sesquioleate, as well as compounds containing only polyethylene oxide groups or impurities with double bonds or hydroxyl groups, are not cross-linking agents.”

i. *Specification*

In arguing for their proposed constructions, the parties both rely on the specification of the ‘808 patent to show the ordinary meaning of “cross-linking agent.” (D.I. 275 at 15; D.I. 286 at 19.) Indeed, because “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim . . . but in the context of the entire patent,” *Phillips*, 415 F.3d at 1313, the patent specification is “the single best guide to the meaning of a disputed term,” *id.* at 1315 (quoting *Vitronics*, 90 F.3d at 1582).

According to the '808 patent, the “[p]olymerization of the monomers [to produce a polymeric microparticle] is conducted in the presence of a polyfunctional crosslinking agent to form the crosslinked composition. The polyfunctional crosslinking agent comprises molecules having either at least two double bonds, a double bond and a reactive group, or two reactive groups.” (‘808 patent, 4:45-50.) Hercules’s proposed construction is based on that description. (D.I. 286 at 19.)

Ciba argues that the passage that Hercules relies on refers only to preferred embodiments of the invention, and that the claims should not be limited to those embodiments. (D.I. 325 at 27 (quoting *Phillips*, 415 F.3d at 1323).) To decide whether the patent’s language should be read as a description of the invention or of a particular embodiment, the language must be read in context: “The manner in which the patentee uses a term within the specification and claims usually will make the distinction apparent.” *Phillips*, 415 F.3d at 1323. Here, there is nothing in the specification that suggests that the above description of “cross-linking agent” refers only to specific embodiments. Rather, the language refers generally to the process of making the cross-linked compositions claimed by the patent, and is clearly separated from the “Description of the Preferred Embodiments” included elsewhere (‘808 patent, 6:46-9:39). Thus, contrary to Ciba’s argument, Hercules is not trying to import a limitation from a particular embodiment.³

³I note that each of the preferred embodiments uses methylenebisacrylamide (“MBA”) (see ‘808 patent, 6:46-9:39), which is a polyfunctional cross-linking agent according to the specification (*id.* at 4:50-52). Thus, the description of embodiments is consistent with the general description of cross-linking agent that Hercules relies on.

Ciba also points to another part of the specification that it contends is evidence of a broader definition for cross-linking agent. The “Background” section of the ‘808 patent refers to a description of cross-linking found in a published patent application from the European Patent Office, EP 0,202,780 (the “780 application”) as follows: “EP 0,202,780 describes the preparation of polymeric, crosslinked, cationic acrylamide polymer beads by conventional inverse emulsion polymerization techniques. Crosslinking is accomplished by the incorporation of a difunctional monomer, such as methylenebisacrylamide, into the polymer. This crosslinking technology is well known in the art.” (‘808 patent, 1:23-29.) The ‘780 application states that:

[C]ross linking . . . may be brought about by controlled spontaneous conditions such as heating or irradiation, provided the degree of chain branching or other cross linking is reproducible and controllable, but preferably is brought about by reaction of the monomer or monomer blend, or the final polymer, with a covalent or ionic cross linking agent.

(D.I. 316, Ex. 12 at 9:19-27.) According to Ciba, the statement that cross-linking was “well known in the art” refers to the entire collection of methods listed in the ‘780 application, and so the ‘808 patent specification does not limit itself to any particular form of cross-linking. (D.I. 275 at 15, 36-37; D.I. 325 at 27.)

I do not agree with Ciba that the reference to the ‘780 application imports a broad definition of “cross-linking agent” into the ‘808 patent. While the ‘780 application does indeed describe cross-linking broadly, the ‘808 patent specification refers to that application in language that narrows the cross-linking being referred to. According to the ‘808 patent, the ‘780 application discloses cross-linking that “is accomplished by the incorporation of a difunctional monomer, such as methylenebisacrylamide, into the

polymer,” and it is “[t]his crosslinking technology” that is “well known in the art.” (‘808 patent, 1:26-29 (emphasis added).) A difunctional monomer like methylenebisacrylamide (“MBA”) is a “polyfunctional crosslinking agent” according to the ‘808 patent. (*Id.* at 4:47-52 (listing MBA as one possible cross-linking agent).) A particular method of cross-linking is singled out from the ‘780 application and described as being well known in the art. Thus, the reference to the ‘780 application, taken in context, is more narrow than Ciba contends and is consistent with Hercules’s proposed construction.

ii. *Prosecution History*

Hercules also relies on the ‘808 patent prosecution history to support its proposed construction of “cross-linking agent.” “[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1317. “The public notice function of a patent and its prosecution history requires that a patentee be held to what he declares during the prosecution of his patent.” *Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 995 (Fed. Cir. 2003). Here, statements were made during the ‘808 patent prosecution that demonstrate a narrow understanding of “cross-linking agent.”

During the examination of the parent application of the ‘808 patent, U.S. Application 07/535,626, the patent examiner rejected several claims, including the claim that issued as claim 1, as anticipated by or obvious over U.S. Patent No. 4,681,912

(issued July 21, 1987) (the "Durand reference," D.I. 316, Ex. 7). (D.I. 316, Ex. 3 at CIBA 000515.) According to the examiner, the Durand reference discloses microparticles that are polymerized "in the presence of poly-oxyethylene sorbitol hexaoleate and sorbitan sequioleate. Since oleate contains a double bond, [the examiner argued,] it is reasonable to expect these oleates functioning to some degree as a cross-linking agent in addition to being a surfactant." (*Id.*) The applicants responded that the Durand reference

fail[ed] to indicate the incorporation of a cross-linking agent into the polymer produced therein. . . . [While the examiner] points out that the oleate surfactants of Durand et al [sic] contain an unsaturated group [i.e., a double bond]⁴ and thus would reasonably be expected to function as a cross-linker . . . [that] assumption is erroneous in that the oleates of Durand et al [sic] are monounstaurated and if any reaction thereof with the acrylamide and/or acrylate were to occur it would occur linearly because a cross-linking agent must contain two functional groups to act as such, see page 7, lines 11-26 of the instant specification.

(*Id.* at CIBA 000526 (emphasis in original).) The reference to page seven of the specification points to the following:

The polyfunctional crosslinking agent comprises molecules having either at least two double bonds, a double bond and a reactive group, or two reactive groups. Illustrative of those containing at least two double bonds are N,N-methylenebisacrylamide, N,N-methylenebismethacrylamide, polyethyleneglycol diacrylate, polyethyleneglycol dimethacrylate, N-vinyl acrylamide, divinylbenzene, triallylammonium salts, N-methylallylacrylamide and the like. Polyfunctional branching agents containing at least one double bond and at least one reactive group include, glycidyl acrylate, acrolein, methylolacrylamide and the like.

⁴A long-standing definition of "unsaturated" is "of or relating to an organic compound, especially a fatty acid, containing one or more double or triple bonds between the carbon atoms." *Am. Heritage Dictionary of the English Languauge* (4th ed. 2000). Here, the term refers to the double bond discussed by the examiner. (See D.I. 316, Ex. 3 at CIBA 000515.)

Polyfunctional branching agents containing at least two reactive groups include aldehydes such as glyoxal, diepoxy compounds, epichlorohydrin and the like.

(*Id.* at CIBA 000486.) That passage is in the specification of the issued '808 patent. (See '808 patent, 4:47-62.) The examiner withdrew the rejection, in apparent reliance on that argument. (D.I. 316, Ex. 3 at CIBA 000532.)

Ciba argues that the prosecution history does not reveal any “special definition” of “cross-linking agent” (D.I. 325 at 28) or include “words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope” (*id.* (quoting *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1308-09 (Fed. Cir. 2005))). According to Ciba, the Durand reference is not relevant prior art because the composition disclosed there is not cross-linked by any method. (D.I. 325 at 23, 28.) Thus, according to Ciba, the argument during prosecution should be understood as simply a response to the examiner’s hypothesis about the presence of cross-linking agents in the Durand composition, a response that goes no further than demonstrating that “under the examiner’s theory,” the Durand surfactants, poly-oxyethylene sorbitol hexaoleate and sorbitan sequioleate, could not be cross-linking agents. (*Id.* at 8.)

Ciba’s argument fails. Whether or not it would have been sufficient to overcome the Durand reference by arguing only that the composition was not cross-linked, the argument that the applicants actually made went further. The applicants argued that the chemicals disclosed in the Durand reference were not cross-linking agents “because a cross-linking agent must contain two functional groups to act as such.” (D.I. 316, Ex. 3 at CIBA 000526 (emphasis in original).) That statement was followed by a

reference to the portion of the specification that forms the basis for Hercules's proposed construction. Contrary to Ciba's assertion, there is nothing hypothetical about that response. In the face of a rejection, the applicants described what they view as a "cross-linking agent," and they stated that the Durand reference did not disclose one. That must be read as a disclaimer of claim scope.

The '808 patent prosecution history does two things. First, the statement that a cross-linking agent must contain two functional groups is consistent with the portion of the '808 patent specification already cited. (*Supra* Section IV.A.1.b.ii.) Indeed, the prosecution history explicitly refers to that portion of the specification. Second, the prosecution history states that the surfactants disclosed by the Durand reference do not have the necessary double bonds or reactive groups. Polyoxyethylene sorbitol hexaoleate contains polyethylene oxide ("PEO") groups (D.I. 291, Ex. D at 90:1-18), and both Durand surfactants contain impurities with double bonds and hydroxyl groups (*id.* at 97:13-100:1). Thus, those surfactants, as well as compounds that contain only PEO groups and/or impurities with double bonds or hydroxyl groups, are not cross-linking agents under the '808 patent. Therefore, the term "cross-linking agent" will be construed as: "A chemical agent that is polyfunctional in that it has at least two double bonds, a double bond and a reactive group, or two reactive groups to link polymer chains together. Polyoxyethylene sorbitol hexaoleate and sorbitan sesquioleate, as well as compounds containing only polyethylene oxide groups and/or impurities with double bonds or hydroxyl groups, are not cross-linking agents."

2. *The '766 Patent*

Ciba's case for infringement of the '766 patent turns on the meaning of "microbead," a limitation that is present in all of the claims of that patent. Claim 1 of the '766 patent, from which all the other claims depend, reads:

A method of making paper which comprises adding to an aqueous paper furnish from about 0.05 to about 20 lbs/ton, based on the dry weight of paper furnish solids, of an ionic, organic, cross-linked polymeric **microbead**, the microbead having an unswollen particle diameter of less than about 750 nanometers and an ionicity of at least 1%, but at least 5%, if anionic and used alone.

('766 patent, 29:39-46 (emphasis added).)

a. *The Parties' Proposed Constructions*

Ciba and Hercules agree that a microbead, as claimed by the '766 patent, is a product formed by the polymerization of monomers. (D.I. 275 at 28; D.I. 286 at 33.) The dispute centers on whether or not an additional limitation applies. Hercules contends that a "microbead" is limited by the following definition: "The microbead must be an integral unit which can be separated from any emulsifier⁵ present." (D.I. 286 at 33-35.) That construction is based on statements made during the '766 patent prosecution in response to an examiner's rejection.

By contrast, Ciba contends that the statements in the prosecution history were made in the context of a discussion about the requirement that the microbead be "ionic," and so the statements should not be read as a general description of the

⁵An "emulsifier" is "an agent used to make an emulsion of a fixed oil." *Am. Heritage Stedman's Medical Dictionary* (2002). In turn, an "emulsion" is "a suspension of small globules of one liquid in a second liquid with which the first will not mix." *Id.*

microbead. (D.I. 325 at 16-17.) Ciba further contends that the claims were not amended in response to that particular rejection, and that the statements merely describe the prior art. (*Id.* at 18.) Thus, according to Ciba, those statements do not limit the scope of the term “microbead” as claimed.

b. *The Court’s Construction*

I conclude that the statements made during the ‘766 patent prosecution are descriptions of the patentee’s invention, and that those statements do limit the scope of the claimed “microbead.” Therefore, “microbead” will be construed as: “A product formed by the polymerization of monomers. The microbead must be an integral unit which can be separated from any emulsifier present.”

During the examination of the application that issued as the ‘766 patent, U.S. Application 07/540,667, the patent examiner rejected several claims, including the claim that issued as claim 1, as obvious over U.S. Patent No. 4,659,431 (issued Apr. 21, 1987) (the “Probst reference,” D.I. 316, Ex. 11). (D.I. 316, Ex. 6 at HERC0076011.) The Probst reference discloses a “Cationic Sizing Agent for Paper, and a Process for its Preparation.” (D.I. 316, Ex. 11 at CIBA 000218.) In response, the applicants made the following argument:

Applicants’ claims require that the organic, polymeric microbeads be ionic! Probst employs ionic group containing emulsifiers in order to create dispersion stability in the solution. The ionic groups remain part of the emulsifier and are not chemically bonded to the hydrophobic copolymers. The Probst product, therefore, is a nonionic hydrophobic polymer mixture stabilized by cationic surfactants.

Applicants’ invention resides in the use of the polymer microbead having an ionic charge covalently bonded to the polymer, whereas, in Probst, the only ionic charge present is on a different molecule i.e. a surfactant which

can dissolve out of and/or migrate from the polymer microbeads. Applicants' microbead does not require the use of an emulsifier. It is an integral unit which can be separated from any emulsifier present if made in emulsion form.

(D.I. 316, Ex. 6 at HERC0076020 (emphasis in original).) The examiner maintained the rejection, arguing that the backbone of the microbead disclosed by the Probst reference was ionic. (*Id.* at HERC0076028.) The applicants responded that the chemical referred to by the examiner was part of the emulsifier, and that by contrast, "Applicants' microbead has an ionic charge covalently bonded thereto and is an integral unit which can be separated as such." (*Id.* at HERC0076038.) According to the applicants, "it is only the emulsifier which is ionic in the Probst composition." (*Id.*) One week later, the claims were allowed. (*Id.* at HERC0076046.)

Ciba contends that the prosecution history should not limit the scope of "microbead" in this case. First, Ciba argues that the statements are only relevant to the construction of "ionic," a term whose meaning is not disputed in this case. (D.I. 325 at 17.) I disagree. The examiner argued that the invention was obvious in light of the Probst reference, and the applicant responded that the only part of the Probst composition that was ionic was the emulsifier. To overcome the rejection, the applicants argued, in two separate responses, that its microbead was an integral unit that could be separated from any emulsifier in the composition. (D.I. 316, Ex. 6 at HERC0076020, HERC0076038.) The applicants further argued that their "microbead does not require the use of an emulsifier." (*Id.* at HERC0076020.) While those arguments were used to support a position about the ionicity of the Probst composition,

they are not limited to ionicity. The applicants described, in unambiguous terms, features of the claimed microbead.

Second, Ciba argues that the statements in the '766 prosecution history are simply a discussion of the prior art. (*Id.* at 18 (citing *Gemstar-TV Guide Int'l, Inc. v. ITC*, 383 F.3d 1352, 1375 (Fed. Cir. 2004)).) Again, the applicants' statements are not so limited. The applicants describe the "invention." (D.I. 316, Ex. 6 at HERC0076020.) According to the applicants, the invention requires that the microbead be "an integral unit which can be separated from any emulsifier present if made in emulsion form." (*Id.*) That unambiguous statement limits the claimed invention.

Therefore, Hercules's proposed construction is correct. A "microbead" is defined as: "A product formed by the polymerization of monomers. The microbead must be an integral unit which can be separated from any emulsifier present."

B. *Summary Judgment of Noninfringement*

Hercules has moved for summary judgment of noninfringement as to the '808 and '766 patents. (D.I. 289.) Because I conclude that, under the proper claim construction, no genuine issues of material fact remain as to infringement, I will grant Hercules's motion. Accordingly, I will deny Ciba's Motion for Summary Judgment of Infringement (D.I. 277), and will also grant summary judgment of noninfringement for Cytec.⁶

⁶Ciba's infringement case against Cytec is based on the same product as is its case against Hercules. Thus, because Hercules's arguments apply with equal force to the claims against Cytec, and because Ciba had sufficient notice and adequate opportunity to respond to those arguments, I will grant summary judgment for Cytec as

1. *Noninfringement as to the '808 Patent*

Hercules and Cytec do not infringe the '808 patent because the accused product does not contain a "cross-linking agent" as required by all of the claims of the '808 patent.

Ciba asserts that a composition jointly marketed by Hercules and Cytec (D.I. 317 at 5) infringes the '808 patent. That composition, marketed under the name PerForm®, is alleged by Ciba to contain a cross-linking agent in the form of a chemical marketed under the name Hypermer® B246SF ("Hypermer"). (D.I. 292, Ex. O at ¶ 22; D.I. 317 at 17.) According to Ciba's expert witness, Hypermer is a cross-linking agent, because Hypermer contains impurities with double bonds and hydroxyl groups that may react to form cross-links. (D.I. 291, Ex. D at 78:11-79:12; *see also id.* at 55:7-16, 56:14-59:15.) In addition, Ciba contends that PEO groups in Hypermer are involved in reactions that lead to cross-linking. (*Id.* at 143-45.) Thus, Ciba has proposed specific chemical groups present in Hypermer, the PEO groups as well as the double bonds and hydroxyl groups found in impurities, that qualify Hypermer as a cross-linking agent under the court's construction.

to infringement of the '808 and '766 patents. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 326 (1986) ("[D]istrict courts are widely acknowledged to possess the power to enter summary judgments sua sponte, so long as the losing party was on notice that she had to come forward with all of her evidence."); *Rouse v. City of Aurora*, 901 F. Supp. 1533, 1539 (D. Colo. 1995) (granting summary judgment for one defendant based on arguments made by other defendants where the plaintiffs "had sufficient notice and adequate opportunity" to respond); *see also* Wright, Miller & Marcus, *Federal Practice and Procedure: Civil 2d* § 2720 (noting that grant of summary judgment sua sponte is proper where losing party has "sufficient advance notice and an adequate opportunity to demonstrate why summary judgment should not be granted").

Ciba's infringement theory fails, however, because those chemical groups alleged to be involved in cross-linking in the Hypermer molecules are also present in the polyoxyethylene sorbitol hexaoleate and sorbitan sesquioleate molecules that were disclaimed during prosecution of the '808 patent. Ciba's expert witness agreed that polyoxyethylene sorbitol hexaoleate contains PEO groups. (*Id.* at 90:1-18.) That witness further agreed that polyoxyethylene sorbitol hexaoleate and sorbitan sesquioleate contain impurities with double bonds and hydroxyl groups. (*Id.* at 97:13-100:1.)

As discussed above, *supra* Section IV.A.1.b.ii, the applicants for the '808 patent argued during prosecution that polyoxyethylene sorbitol hexaoleate and sorbitan sesquioleate were not cross-linking agents, because those chemicals did not contain the necessary double bonds or reactive groups. By choosing to define "cross-linking agent" based on the reactive groups present, and by disclaiming the surfactants disclosed in the Durand reference, the applicant disclaimed chemicals that contain those types of reactive groups and no others. Hypermer is such a chemical. (D.I. 291, Ex. D at 78:11-79:12, 143-45; *see also id.* at 55:7-16, 56:14-59:15.) Here, as in *Spring Window*, 323 F.3d 989, "a reasonable competitor, reviewing the amendments and statements made by the applicant[s] to distinguish the claimed invention from [the Durand reference], would conclude that the claimed invention did not cover a device like [that found in the Durand reference]." 323 F.3d at 995. Thus, Hypermer is not a cross-linking agent under the '808 patent.

Ciba argues that genuine issues of fact remain that make summary judgment improper, even under the construction of “cross-linking agent” that I have adopted. (D.I. 317 at 34-35.) First, Ciba disputes that Hercules’s representations of the Hypermer molecule are correct. (*Id.* at 34.) However, Ciba’s contention is simply that impurities are present in Hypermer. (*Id.* at 19-21.) Those impurities do not qualify as cross-linking agents under the patent, because they are present in the disclaimed Durand surfactants. Second, Ciba argues that Hypermer reacts differently than the surfactants disclosed by the Durand reference. (*Id.* at 34-35.) While that may be true, it does not raise an issue as to infringement. The applicants for the ‘808 patent defined “cross-linking agent” in terms of the chemical groups present, i.e., double bonds and reactive groups. Thus, the accused product must contain the claimed groups. The parties do not dispute that the groups present in Hypermer are the same as those that were disclaimed during the applicants’ discussion of the Durand reference. According to the applicants’ statements, Hypermer is not a cross-linking agent.

In summary, I will grant Hercules’s motion for summary judgment as to noninfringement of the ‘808 patent.⁷ Accordingly, I will deny Ciba’s summary judgment

⁷Ciba argues that it may still show infringement of the ‘808 patent under the doctrine of equivalents. (D.I. 317 at 37-38.) However, it only provides evidence as to literal infringement and argues that “[t]here is no doubt” that that evidence shows infringement under the doctrine of equivalents. (*Id.*) That is insufficient to support a doctrine of equivalents claim. See *Schoell v. Regal Marine Indus., Inc.*, 247 F.3d 1202, 1210 (Fed. Cir. 2001) (“The doctrine of equivalents is not a talisman that entitles a patentee to a jury trial on the basis of suspicion; it is a limited remedy available in special circumstances, the evidence for which is the responsibility of the proponent.”). Furthermore, “[t]he evidence and argument on the doctrine of equivalents cannot merely be subsumed in plaintiff’s case of literal infringement.” *Lear Siegler, Inc. v. Sealy Mattress Co.*, 873 F.2d 1422, 1425 (Fed. Cir. 1989).

motion as to infringement of the '808 patent. I will also grant summary judgment for Cytec as to infringement of the '808 patent.

2. *Noninfringement as to the '766 Patent*

Hercules and Cytec do not infringe the '766 patent because the accused product does not contain a "microbead" as required by all of the claims of the '766 patent.

Ciba argues that Hypermer acts to form covalent cross-links in the polymeric microbeads produced by Hercules and Cytec. (D.I. 291, Ex. D at 116:8-122:7; *see also* D.I. 291, Ex. O at ¶ 22.) If those cross-links are formed, the Hypermer becomes covalently attached to the accused microbeads. Importantly, according to Ciba's expert witness, Hypermer is also an emulsifier. (D.I. 291, Ex. D at 71:16-17, 72:9-75:13.) Thus, under Ciba's theory of infringement, the accused microbeads are covalently attached to an emulsifier, namely Hypermer. However, that theory is contrary to statements made by the applicants during the prosecution of the '766 patent. The '766 patent requires that the microbead "must be an integral unit which can be separated from any emulsifier present." *See supra* Section IV.A.2.b. Therefore, the accused product does not contain this limitation, because, according to Ciba, the microbeads at issue are attached to, not separated from Hypermer, which is an emulsifier.

Again, Ciba argues that genuine issues of fact remain that make summary judgment improper, even under the construction of "microbead" that I have adopted. (D.I. 317 at 28-29.) However, none of the issues raised by Ciba change the conclusion as to infringement. First, Ciba's dispute as to the molecular structure of Hypermer (*id.* at 28) is again focused on the presence of impurities in the product, and that dispute is

irrelevant to whether the Hypermer is separable from the accused microbeads. Second, whether Hypermer acts as a cross-linking agent in addition to acting as an emulsifier (*id.* at 29) is also irrelevant. Ciba does not dispute that Hypermer is an emulsifier. The requirement that the microbead be separable from any emulsifier present arises from an unambiguous description of the microbeads in the prosecution history for the '766 patent. (D.I. 316, Ex. 6 at HERC0076020, HERC0076038.) According to that description, the accused microbeads do not infringe.

In summary, I will grant Hercules's motion for summary judgment as to noninfringement of the '766 patent.⁸ Accordingly, I will deny Ciba's summary judgment motion as to infringement of the '766 patent. I will also grant summary judgment for Cytec as to infringement of the '766 patent.

⁸Again, Ciba argues that it may show infringement of the '766 patent under the doctrine of equivalents. (D.I. 317 at 29-31.) As for the '808 patent, it only provides evidence as to literal infringement and argues that that evidence shows infringement under the doctrine of equivalents. (*Id.*) That is insufficient to support a doctrine of equivalents claim. *See supra* note 7.

V. CONCLUSION

For the reasons set forth herein, the disputed claim terms will be construed as follows:

Claim Term

“cross-linking agent”

The Court’s Construction

The court construes “cross-linking agent” to mean: “A chemical agent that is polyfunctional in that it has at least two double bonds, a double bond and a reactive group, or two reactive groups to link polymer chains together. Polyoxyethylene sorbitol hexaoleate and sorbitan sesquioleate, as well as compounds containing only polyethylene oxide groups and/or impurities with double bonds or hydroxyl groups, are not cross-linking agents.”

“microbead”

The court construes “microbead” to mean: “A product formed by the polymerization of monomers. The microbead must be an integral unit which can be separated from any emulsifier present.”

Ciba’s Motion for Claim Construction (D.I. 274) will be granted-in-part to the extent it relates to the above claim terms and denied-in-part without prejudice to the extent it relates to other claim terms.

In addition, I will grant Hercules’s Motion for Summary Judgment of Noninfringement (D.I. 289); I will deny Ciba’s Motion for Summary Judgment of Infringement (D.I. 277); and I will grant summary judgment of noninfringement for

Cytec. I will deny as moot Hercules's Motion for Partial Summary Judgment Limiting Damages (D.I. 284).

I will deny as moot Cytec's Motion to Join in Hercules's Answering Brief in Opposition to Ciba's Motion for Summary Judgment (D.I. 314) and Hercules's Motion for a Postponement of Trial (D.I. 343).

The parties should confer and inform the court within ten days as to whether the case will proceed to trial on Hercules's and Cytec's counterclaims, as well as which, if any, additional claim terms must be construed prior to trial. The parties must also, within five days, provide recommendations for redactions to this opinion and accompanying order so that a public version may be filed. Proposed redactions must be kept to an absolute minimum.

Claim Term

“cross-linking agent”

The Court’s Construction

The court construes “cross-linking agent” to mean: “A chemical agent that is polyfunctional in that it has at least two double bonds, a double bond and a reactive group, or two reactive groups to link polymer chains together. Polyoxyethylene sorbitol hexaoleate and sorbitan sesquioleate, as well as compounds containing only polyethylene oxide groups and/or impurities with double bonds or hydroxyl groups, are not cross-linking agents.”

“microbead”

The court construes “microbead” to mean: “A product formed by the polymerization of monomers. The microbead must be an integral unit which can be separated from any emulsifier present.”

IT IS FURTHER ORDERED that the Motion for Claim Construction (D.I. 274) will be GRANTED-IN-PART to the extent it relates to the above claim terms and DENIED-IN-PART without prejudice to the extent it relates to other claim terms.

IT IS FURTHER ORDERED that Hercules, Inc.’s Motion for Summary Judgment of Noninfringement (D.I. 289) is GRANTED.


IT IS FURTHER ORDERED that Ciba Speciality Chemicals Corporation’s Motion for Summary Judgment of Infringement (D.I. 277) is DENIED.

IT IS FURTHER ORDERED that summary judgment of noninfringement is GRANTED for Cytec Industries, Inc.

IT IS FURTHER ORDERED that the Motion for Partial Summary Judgment Limiting Damages (D.I. 284), the Motion to Join in Hercules's Answering Brief in Opposition to Ciba's Motion for Summary Judgment (D.I. 314), and the Motion for a Postponement of Trial (D.I. 343) are DENIED as moot.

IT IS FURTHER ORDERED that the parties will inform the court within ten days as to whether the case will proceed to trial on Hercules's and Cytec's counterclaims, as well as which, if any, additional claim terms must be construed prior to trial.

IT IS FURTHER ORDERED that, within five days, the parties will provide recommendations for redactions to this opinion and accompanying order so that a public version may be filed. Proposed redactions must be kept to an absolute minimum.


UNITED STATES DISTRICT JUDGE

June 20, 2006
Wilmington, Delaware