

In short, Adventus insisted on licensing and payment of royalties by RPI, whereas RPI insisted that its BOS 100® product does not infringe the ‘213 and ‘154 patents. Although the parties thereafter continued to correspond in an effort to reach an agreement, they were unable to resolve their differences. This lawsuit ensued.

RPI filed this action on April 6, 2007, and sought a declaratory judgment that the ‘213 and ‘154 patents are not infringed and are invalid. Adventus counterclaimed for infringement of the ‘213 and ‘154 patents and also asserted infringement of four additional patents: U.S. Patents Nos. 6,083,394; 5,480,579; 5,411,664; and 5,618,427 (collectively, the “Grace Patents”). RPI filed its reply asserting counterclaims of noninfringement and invalidity of the Grace patents. On August 12, 2009, the Court granted RPI’s Motion to Amend its Complaint to include a claim that the ‘213 patent is unenforceable because of inequitable conduct. (Doc. No. 92). The Court denied Adventus’s motion to dismiss portions of RPI’s first amended complaint on March 18, 2010.

Both RPI and Adventus moved for summary judgment as to the ‘213 patent and the ‘154 patent. RPI also moved for summary judgment as to the Grace Patents. The Court granted in part and denied in part the summary judgment motions of both parties as to the ‘213 patent.¹ The Court later granted RPI’s motion for summary judgment as to the ‘154 patent and denied Adventus’s motion regarding the same. It now addresses RPI’s motion for summary judgment as to the Grace Patents.

A. RPI’s allegedly infringing product

RPI produces and sells a product under the brand name BOS 100® that is used in cleaning groundwater contaminated with halogenated hydrocarbons. BOS 100® is comprised of 90 to 95%

¹ The Court deferred ruling on RPI’s inequitable conduct and fraud claims until after the Federal Circuit completes its en banc review of the standard for such claims.

carbon and 5 to 10% elemental iron. It is made by treating granular, activated carbon with an iron salt to impregnate the granular activated carbon with the iron salt. The material is then subjected to reducing conditions and heating to a very high temperature to convert the iron salt into elemental iron embedded within the granular activated carbon structure. One expert referred to particles of granular activated carbon as like “little grains of sand.” (Doc. No. 148-33 at 13). Another expert noted that it “could be described as a hard, angular material of irregular shape.” (Doc. No. 128-12 at 16).

B. The Grace Patents

Adventus has asserted infringement of the Grace Patents, which are the ‘664 patent, the ‘579 patent, and the ‘394 patent.² The ‘664 and ‘579 patents each have one independent claim, Claim 1. The ‘394 patent has two independent claims, Claim 1 and Claim 19. Each independent claim of the Grace Patents includes the limitation of “fibrous organic matter which is capable of supporting bacterial or fungal growth.”

The ‘664 patent’s Claim 1 states:

1. A method of dehalogenating and/or degrading halogenated organic chemical contaminants in water, sediment, or soil comprising adding to the water, sediment or soil a combination of fibrous organic matter which is capable of supporting bacterial or fungal growth and multi-valent metal particles in amounts which promote reductive dehalogenation of the halogenated organic compounds.

(Doc. No. 28-1 at 5:63-68) (emphasis added).

The ‘579 patent’s Claim 1 states:

1. A composition useful for dehalogenating and/or degrading halogenated organic compounds in water, sediment, or soil comprising a mixture of fibrous organic matter which is capable of supporting bacterial or fungal growth and multi-

² Adventus has withdrawn its claims regarding the ‘427 patent, and the Court thus does not include the ‘427 patent in its discussion of the Grace Patents. See (Doc. No. 196 at 2 n.2).

valent metal particles wherein the weight ratio of metal particles: organic matter ranges from 1:1 to 1:500,000 respectively.

(Doc. No. 32-1 at 6:10-16) (emphasis added).

The '394 patent's Claim 1 states:

1. A method for facilitating the decontamination, from organic contaminants, of water, sediment, or soil containing environments, whereby said organic contaminants are subject to degradation or decomposition under strong reducing conditions, comprising providing to at least one of said environments a combination of (a) fibrous organic matter which is capable of supporting bacterial or fungal growth and (b) multivalent metal particles, in a manner and under conditions sufficient to lower the redox potential of said environment relative to the absence of (a) and (b) therein, and subsequently allowing said organic contaminants to degrade or decompose, thereby facilitating the decontamination of said environment.

(Doc. No. 30-1 at 6:12-13) (emphasis added). Claim 19 of the '394 patent states:

19. A method comprising

(a) providing (i) fibrous organic matter which is capable of supporting bacterial or fungal growth and (ii) multivalent metal particles to a water, sediment or soil containing environment which comprises organic contaminants which are subject to degradation or decomposition under strong reducing conditions,

(b) further providing (i) and (ii) in a manner and under conditions sufficient to lower the redox potential of said environment relative to the absence of said (i) and (ii),

(c) and subsequently allowing said organic contaminants to degrade or decompose, thereby facilitating the decontamination of said environment.

(Id. at 7:6 - 8:8) (emphasis added).

II. LEGAL STANDARD

Summary judgment shall be granted “if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.” Fed. R. Civ. P. 56(c). The movant has the “initial responsibility of informing the district court of the basis for its motion, and identifying those portions of ‘the pleadings, depositions,

answers to interrogatories, and admissions on file, together with the affidavits, if any,' which it believes demonstrate the absence of a genuine issue of material fact.” Celotex Corp. v. Catrett, 477 U.S. 317, 323 (1986) (quoting Fed. R. Civ. P. 56(c)).

Once this initial burden is met, the burden shifts to the nonmoving party. The nonmoving party “must set forth specific facts showing that there is a genuine issue for trial.” Id. at 322 n.3. The nonmoving party may not rely upon mere allegations or denials of allegations in his pleadings to defeat a motion for summary judgment. Id. at 324. The nonmoving party must present sufficient evidence from which “a reasonable jury could return a verdict for the nonmoving party.” Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986).

When ruling on a summary judgment motion, a court must view the evidence and any inferences from the evidence in the light most favorable to the nonmoving party. Anderson, 477 U.S. at 255. “Where the Record taken as a whole could not lead a rational trier of fact to find for the nonmoving party, there is no genuine issue for trial.” Ricci v. DeStefano, 129 S. Ct. 2658, 2677, 557 U.S. ___ (2009) (quoting Matsushita v. Zenith Radio Corp., 475 U.S. 574, 587 (1986)).

III. DISCUSSION

Adjudication of patent infringement requires a two-step process: (1) the court must construe the disputed claim terms to determine the scope and meaning of the claims alleged to be infringed; and (2) the court must apply the construed claims to the accused product and process. Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc). The court has already construed and clarified the disputed claim terms and phrases in its orders dated October 10, 2008 (Doc. No. 107); January 7, 2009 (Doc. No. 121); and August 7, 2009 (Doc. No. 187). The Court now determines whether the claims, as construed by the Court, embody the accused product and process.

A. Infringement claims

1. Standard for patent infringement

In order to prove patent infringement, the patentee must “prove that the accused device embodies every limitation in the claim, either literally, or by a substantial equivalent.” Zelinski v. Brunswick Corp., 185 F.3d 1311, 1316 (Fed. Cir. 1999). Literal infringement occurs when every limitation recited in the claim is found in the accused device so that the claims read on the device exactly. Amhil Enterprises Ltd. v. Wawa, Inc., 81 F.3d 1554, 1562 (Fed. Cir. 1996).

Even where an accused product or process does not literally infringe, however, a patentee may still prove infringement under the doctrine of equivalents. Under the doctrine of equivalents, a product or process that does not literally infringe each element of a patent claim may still infringe if each and every limitation of the claim is literally or equivalently present in the accused product or process. Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 40 (1997). The doctrine of equivalents is applied to individual claim limitations, rather than to an invention as a whole. K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1367 (Fed. Cir. 1999). Consequently, “the doctrine of equivalents cannot be used to vitiate an element from the claim in its entirety.” Id.

Depending on the facts of a case, courts apply one of two tests to determine equivalence. Warner-Jenkinson, 520 U.S. at 39-40 (noting regardless of the test applied, the central inquiry is whether “the accused product or process contain[s] elements identical or equivalent to each claimed element of the patented invention”). First, under the insubstantial differences test, “[a]n element in the accused device is equivalent to a claim limitation if the only differences between the two are insubstantial.” Voda v. Cordis Corp., 536 F.3d 1311, 1326 (Fed. Cir. 2008) (quoting Honeywell Int’l Inc. v. Hamilton Sundstrand Corp., 370 F.3d 1131, 1139 (Fed. Cir. 2004)). Alternatively, the function-way-result test defines equivalence as where “an element in the accused device . . .

‘performs substantially the same function in substantially the same way to obtain substantially the same result’” as the claim limitation. Id. (quoting Schoell v. Regal Marine Industries, Inc., 247 F.3d 1202, 1209-10 (Fed. Cir. 2001)).

“Summary judgment on the issue of infringement is proper when no reasonable jury could find that every limitation recited in a properly construed claim either is or is not found in the accused device either literally or under the doctrine of equivalents.” PC Connector Solutions LLC v. SmartDisk Corp., 406 F.3d 1359, 1364 (Fed. Cir. 2005).

2. “fibrous organic matter”

Each independent claim of the Grace Patents contains the limitation “fibrous organic matter.” The Court has construed “fibrous organic matter” for each Grace Patent as “matter made of fiber and carbon-based compounds having nutrients so that the matter is capable of supporting bacterial or fungal growth.” (Doc. No. 107 at 15-20).

a. whether RPI literally infringes the “fibrous” limitation

The Court has construed the term “fibrous” as part of the term “fibrous organic matter” to mean “matter made of fiber.” (Id.). At Markman, Adventus proposed that “fibrous” should be construed as “matter that contains, consists of or resembles fibers.” (Id.). The Court found this construction to be overbroad. Adventus now argues that under the Court’s construction, the word “fiber” should be defined under the Merriam-Webster Dictionary’s third definition of the term, which states:

3 a: an element that gives texture or substance

b: basic toughness: STRENGTH, FORTITUDE

c: essential structure or character <the very *fiber* of a person’s being>.³

³ <http://www.merriam-webster.com/dictionary/fiber>.

RPI contends fiber under the Court’s construction means “a thread or structure or object resembling a thread such as found in plant matter.” (Doc. No. 136 at 24). This definition is closer to Merriam-Webster’s first definition of the word “fiber”:

1 : a thread or a structure or object resembling a thread: as

a (1) : a slender root (as of a grass) (2) : an elongated tapering thick-walled plant cell void at maturity that imparts elasticity, flexibility, and tensile strength

b (1) : a strand of nerve tissue : AXON, DENDRITE (2) : one of the filaments composing most of the intercellular matrix of connective tissue (3) : one of the elongated contractile cells of muscle tissue

c : a slender and greatly elongated natural or synthetic filament (as of wool, cotton, asbestos, gold, glass, or rayon) typically capable of being spun into yarn

d : mostly indigestible material in food that stimulates the intestine to peristalsis —called also bulk, roughage⁴

Merriam-Webster’s third definition, preferred by Adventus, pertains more to human characteristics, as evidenced in the usage example the definition gives after subpart **c** of that definition: “the very *fiber* of a person’s being.” Subpart **b** of that definition also clearly speaks to a human characteristic in identifying fiber with “fortitude.” It would be nonsensical to say that an inanimate object has fortitude, which is defined as “strength of mind that enables a person to encounter danger or bear pain or adversity with courage.”⁵ It follows that subpart **a** of Merriam-Webster’s third definition, while not explicitly saying so, also pertains to human characteristics. Even if it does not, defining “fiber” as “an element that gives texture or substance” would significantly broaden the Court’s intended construction of “fibrous organic matter.”

⁴ Id.

⁵ <http://www.merriam-webster.com/dictionary/fortitude>.

Merriam-Webster’s first definition of “fiber,” and especially subparts **a**, **b**, and **c**, comport with the Court’s intended construction of the claim term “fibrous.” Further, the Oxford English Dictionary contains a definition that describes well the meaning of the word “fiber” the Court intended in its construction:

fibres, n.

...

2. *Phys.* One of a number of thread-like bodies or filaments, that enter into the composition of animal (muscular, nervous, etc.) and vegetable tissue.
 - a. in animals. *fibres of Corti*: see CORTIAN a.⁶

The Court meant what it said when it found Adventus’s proposed construction of “fibrous organic matter” was overbroad. This newfound attempt to pluck from the dictionary a most broad and inapplicable definition of the word “fiber” is of no avail. The Court adopts Merriam-Webster’s first definition of fiber: “a thread or a structure or object resembling a thread.”⁷

RPI’s product is made of granular activated carbon. Being granular material, it is made of “granules.” A “granule” is “A small grain; a small compact particle; a pellet.”⁸ The definition of granule simply does not contain or imply even a hint that a granule is “a thread or a structure or object resembling a thread.” Nor does the definition suggest that a granule is thread-like, filament-like, strand-like, or slender and elongated. Thus something that is granular is not “matter made of fiber.” Because Adventus has provided no evidence that granular activated carbon is “matter made

⁶ “fibre, n.” The Oxford English Dictionary (2d ed. 1989). OED Online. Oxford University Press. 29 Sept. 2010 <<http://dictionary.oed.com/cgi/entry/50084229>>.

⁷ While the Court finds the Oxford English Dictionary applicable as well, it is hesitant to use a purely physiological definition that would exclude all materials made of synthetic fibers.

⁸ “granule, n.¹” The Oxford English Dictionary (2d ed. 1989). OED Online. Oxford University Press. 29 Sept. 2010 <<http://dictionary.oed.com/cgi/entry/50097897>>.

of fiber,” RPI does not literally infringe this limitation of the Grace Patents. There is no genuine issue for trial as to this issue.

b. whether BOS 100® is the equivalent of “fibrous” matter

While RPI’s product does not literally infringe the independent claims of the Grace Patents, the question remains whether the product infringes under the doctrine of equivalents. “Although equivalence is a factual matter normally reserved for a fact finder, the trial court should grant summary judgment in any case where no reasonable fact finder could find equivalence.” Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1423 (Fed. Cir. 1997).

Adventus argues that BOS 100® is the equivalent of “matter made of fiber” because granular activated carbon absorbs contaminants, and so does the fibrous organic matter of the Grace Patents. Adventus notes that the high surface area of granular activated carbon, which allows greater surface area for the absorption of contaminants, is the same as the Grace Patents’ explanation that

the fibrous organic matter is preferably cut or ground into small particles in order to increase the exposed surface area and thereby enhance its contact with the soil components and absorption of the halogenated organic chemical contaminants.

See (Doc. No. 28-1 at 3:43-47). RPI, on the other hand, contends that “something is either ‘fibrous’ – made of fibers – or it is not.” (Doc. No. 182 at 22). It points out that the Grace Patents’ specifications state that “[i]t is considered an important feature of this invention that the organic matter be fibrous.” (Doc. No. 28-1 at 3:7-13). RPI maintains that finding something that is not fibrous – granular activated carbon – to be equivalent to fibrous would read the “fibrous” limitation out of the claims and be improper.

The Court agrees with RPI’s position on this question. As the Court in Warner-Jenkinson made clear, “It is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety.”

520 U.S. at 29. “The doctrine of equivalents . . . exists solely for the equitable purpose of ‘prevent[ing] an infringer from stealing the benefit of an invention.’” Texas Instruments, Inc. v. U.S. Int’l Trade Comm’n, 805 F.2d 1558, 1572 (Fed. Cir. 1986) (citations omitted). Applied more broadly, it would “conflict[] with the definitional and public-notice functions of the statutory claiming requirement.” Warner-Jenkinson, 520 U.S. at 29. Here, as in Sage Products, “[n]o subtlety of language or complexity of the technology, nor any subsequent change in the state of the art, such as later-developed technology, obfuscated the significance of this limitation at the time of its incorporation into the claim.” 126 F.3d at 1425 (citing Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 938 (“[T]he facts here do not involve later-developed computer technology which should be deemed within the scope of the claims to avoid the pirating of an invention.”) (rev’d on other grounds)). If Adventus had meant to claim more than fibrous material in the Grace Patents, it could have done so. It did not, and it may not use the doctrine of equivalents to expand the reach of its claims beyond their intended scope.

The Grace Patents claim a specific matter, fibrous material, to absorb contaminants. RPI accomplishes a similar result, but it achieves it by using an altogether different material, granular activated carbon.⁹ Because the Grace Patents contain a clear compositional limitation, “the public has a right to rely on those limits in conducting its business activities.” Id. “This court will not effectively remove such a limitation under a doctrine designed to prevent ‘fraud on a patent.’” Id. at 1425-26. RPI’s product, which is in granular form, is more than an insubstantial difference from

⁹ Adventus argues that there is a form of activated carbon that is fibrous: fibrous activated carbon. It then argues that granular activated carbon is the equivalent of fibrous activated carbon, and that granular activated carbon is therefore equivalent to the “fibrous” limitation of the Grace Patents. The Court rejects this argument, as Adventus provides no evidence that fibrous activated carbon and granular activated carbon are equivalents. The connection is simply too attenuated. This is especially so because Adventus has not shown that fibrous activated carbon is literally the same as or the equivalent of the other elements of the Grace Patents’ independent claims.

the “fibrous” material claimed in the Grace Patents. No reasonable jury could find differently. There is no genuine issue for trial as to infringement under the doctrine of equivalents.

In light of this holding, the Court will grant RPI’s motion as to infringement of each of the claims of the Grace Patents. See PC Connector Solutions, 406 F.3d at 1364 (“Summary judgment on the issue of infringement is proper when no reasonable jury could find that every limitation recited in a properly construed claim . . . is . . . found in the accused device either literally or under the doctrine of equivalents.”); see Monsanto Co. v. Syngenta Seeds, Inc., 503 F.3d 1352, 1359 (Fed. Cir. 2007) (“One who does not infringe an independent claim cannot infringe a claim dependent on (and thus containing all the limitations of) that claim.”).¹⁰

B. Unfair and deceptive trade practices claim

RPI has also moved for summary judgment as to Adventus’s counterclaim for a violation of North Carolina’s Unfair and Deceptive Trade Practices Act, N.C. Gen. Stat. § 75-1.1 (“UDTPA). North Carolina’s UDTPA makes unfair or deceptive acts or practices in or affecting commerce unlawful. “To prevail on a claim of unfair and deceptive . . . practices, a plaintiff must show: (1) defendants committed an unfair or deceptive act or practice; (2) in or affecting commerce; and (3) that plaintiff was injured thereby.” Cullen v. Valley Forge Life Ins., Co., 589 S.E.2d 423, 430 (N.C. Ct. App. 2003) (quoting First Atl. Mgmt. Corp. v. Dunlea Realty Co., 507 S.E.2d 56, 63 (N.C. Ct. App. 1998)).

Dr. Seech, the CEO of the defendants, testified on the Rule 30(b)(6) topic: “The complete factual and legal basis for each of the allegations set forth in Adventus’ counterclaims regarding

¹⁰ The Court does not reach RPI’s alternative claims of invalidity in light of this ruling, as no “live controversy over validity remains” as to the Grace Patents. See Med. Instr. & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1222 n.1 (Fed. Cir. 2003).

Defendants' claim of unfair and deceptive trade practices." (Doc. No. 179-6, Rule 30(b)(6) deposition notice). At his deposition, Seech was asked, "Do you understand what Adventus' claim of unfair and deceptive trade practices against RPI is based on?" Seech asked for the question to be restated. He then indicated that he could not provide any facts supporting the defendants' allegation that RPI had committed "unfair and deceptive trade practices." (Doc. No. 148-9 at 43-44). "Producing an unprepared witness [for a Rule 30(b)(6) deposition] is tantamount to failure to appear." Black Horse Lane Assoc., L.P. v. Dow Chem. Corp., 228 F.3d 275, 304 (3d Cir. 2000); accord United States v. Taylor, 166 F.R.D. 356, 363 (M.D.N.C. 1996).

The Magistrate Judge determined while considering a motion in limine that RPI's questioning of Seech on this topic was "quite clear and unambiguous." (Doc. No. 202 at 7). Further, the additional evidence offered by Adventus at summary judgment in support of its UDTPA claim has been excluded from the Court's consideration, as the Magistrate Judge granted RPI's motion in limine as to that evidence.

With no evidence before the Court that RPI committed an unfair or deceptive trade practice, the Court concludes that no reasonable jury could find RPI violated the UDTPA.

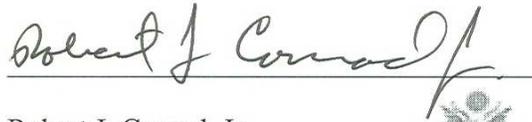
IV. CONCLUSION

IT IS, THEREFORE, ORDERED that:

1. RPI's motion for partial summary judgment regarding the Grace Patents and Unfair and Deceptive Trade Practices (Doc. No. 135) is **GRANTED**;
2. The Court **DECLARES** that BOS 100® and RPI's method of using it does not infringe any claim of the Grace Patents either literally or under the doctrine of equivalents; and
4. The defendants' Third, Fourth, Fifth, Sixth, and Seventh Claims for Relief are hereby **DISMISSED**.

SO ORDERED.

Signed: September 30, 2010

A handwritten signature in cursive script, reading "Robert J. Conrad, Jr.", written over a horizontal line.

Robert J. Conrad, Jr.
Chief United States District Judge

