

I. Background

The '613 patent, entitled "Food Casing," issued on March 13, 2001. The patent is directed to a food casing whose multi-layered structure allows it effectively to impart color and/or flavor to enclosed foods, while preventing losses in weight, flavor and taste. The patent contains ten claims, nine of which depend directly or indirectly from independent claim 1.

Claim 1 recites:

1. A food barrier casing for enclosing a foodstuff to be boiled cooked or otherwise heated in the casing and for imparting a color and/or flavor to the foodstuff, wherein the casing comprises

at least one steam and/or gas impermeable plastic foil (1), and an absorbent inner layer (2) joined to an inner side of the impermeable plastic foil (1), the inner layer (2) comprising fibers selected from the group consisting of woven fibers, fabric, knits, and fleece, and wherein the inner layer (2) is impregnated with coloring and/or flavoring agents in an amount sufficient to impart color and/or flavor to the foodstuff when the food barrier casing encloses the foodstuff.

A preferred embodiment of the invention, depicted in Fig. 1 of the patent, is a four-layered structure that includes, beginning with its outer-most layer, a polyethylene layer, then a polyamide or nylon layer, then another polyethylene layer, and finally an

absorbent inner layer adjacent to the enclosed food. The patent teaches that substances used to flavor or color foods may be impregnated into the absorbent inner layer, then "reliably transferred...during the cooking or boiling process." Col. 4 lns. 28-29. "Since the outer layers of the casing are impermeable, the substances cannot be rinsed out during the boiling process. No losses in weight, taste and flavor result during the production and boiling process or during transport and storage... ." Col. 4 lns. 30-34.

World Pac has commercialized patented products in the United States since 1999. These products practice the patent as taught in the preferred embodiment, i.e., their structure consists of an outer-most polyethylene later, a nylon layer, then another polyethylene layer that is extruded wet onto the previous two layers, thereby functioning as an adhesive for the absorbent inner layer.

Prior to World Pac's claimed invention, three varieties of casings were known in the art. The first were cellulose fiber casings used to impart colors or flavors to foods using techniques such as smoking in a smokehouse. The '613 patent states that because cellulose fiber casings are permeable to steam and gas, products cooked in these casings always lose weight, color, and flavor during processing and storage, and also have a short shelf life unless they are quickly repackaged in a barrier casing. Col. 1 lns. 27-35. The second type of casings known in the art were

pure plastic casings, which the '613 patent explains were developed "[t]o avoid the disadvantage of steam and gas permeability." Col. 1 ln 39. These casings effectively prevent losses in weight, flavor and taste during production and storage, but they are ineffective to absorb and transfer colors or flavors to the enclosed foods. Col. 1 lns. 44-54. Also known at the time of the invention, though not discussed in the patent, were plastic-coated fibrous casings. For example, Viskase's product line at that time included its "MP" (for moisture-proof) fibrous casings, which were fibrous casings coated with a type of plastic called polyvinylidene chloride or "PVDC."

As Viskase's own witnesses acknowledged, World Pac's patented products were perceived by customers as offering valuable improvements over the previously available casings. For example, Jeffrey Sherry stated in his deposition that there was a perception in the industry that fibrous casings, including Viskase's MP fibrous casings, were more susceptible to bacteria and pathogens than "plastic" casings, which were viewed as being "impervious, safer, better."² Sherry Dep. at 36:24-37:5.³ Myron Nicholson

²Although PVDC is a type of plastic, the witnesses generally distinguished between PVDC-coated fibrous casings and "plastic" casings such as World Pac's patented casings.

³The manner in which World Pac submitted the exhibits to its brief has made it difficult to find, and nearly impossible to cite, much of the evidence upon which it relies. The deposition excerpts I reference here, for example, apparently have not been attributed any exhibit number but are contained in a separately bound volume of exhibits called "Section 2 to Appendix to World Pac's Combined Memorandum of Law." World Pac's Appendix has four

stated similarly in his deposition that Viskase's customers did not perceive MP fibrous casings as having the food-safety qualities associated with "plastic" casings. Nicholson Dep. at 210:19-211:5. Mr. Sherry testified that the trend in the market was toward plastic casings, see Sherry Dep. 67:1-2, and Messrs. Sherry and Nicholson both referred to a "niche" occupied by World Pac in what Mr. Sherry called a "booming" market. Sherry Dep. at 56:11-16, Nicholson Dep. at 226:10-12.

Accordingly, Viskase began to research ways to fill the "hole" it perceived in its product line with a casing that would compete with World Pac's patented casings. Sherry Dep. at 72:20-22. As part of its efforts, Viskase obtained samples of World Pac casings (including, in at least one instance, a "stolen" sample taken from a garbage can) and reverse engineered them to determine the materials and method of construction. Viskase documents discussing its research and development activities refer to a "World Pac knock-off," a "World Pac replacement," and a "World Pac me-too." These efforts culminated in the launch of the accused Viscoat casings.

The Viscoat casings do not exactly replicate the design of

such sections, each of which begins anew with the letter A. In the future, World Pac should either number or letter all of its exhibits consecutively (for example as Viskase has done), and should give a unique and easily citable exhibit number to each document. In addition, both parties should provide an index to their exhibits.

World Pac's products. In particular, while World Pac uses an extruded layer of polyethylene as an adhesive to join the inner absorbent layer to the nylon and outer polyethylene layers, Viskase uses a polyurethane-based adhesive to join the various layers of the Viscoat casings together. Like World Pac's patented casings, however, the Viscoat casings have an outer polyethylene layer joined to a nylon layer, which is then joined to an absorbent, fibrous inner lining.

World Pac first became aware of the Viscoat casings at the American Meat Institute ("AMI") trade show in October of 2005, where Viskase launched the product. World Pac's attorney alerted Viskase to the '613 patent and stated that Viscoat brochures distributed at the trade show "appear to recite all of the elements of at least claim 1" of the patent. The parties communicated on the issue over the next several months, during which time World Pac requested a sample of the Viscoat product. Viskase denied infringement but refused to provide a sample. These conversations ended in March of 2006, after which the parties did not communicate on the topic again until July 2009.⁴ Then in August of 2009, World

⁴World Pac contends that it did not believe that Viscoat casings were commercially available during that four year period, and that in any event, it did not have sufficient information to bring an infringement suit against Viskase. Viskase insists that Viscoat casings were marketed throughout that period, including at AMI and IFFA trade shows in 2007 and the Carnes Expo Show in 2009. Although delays in seeking relief are generally relevant to whether a preliminary injunction is appropriate, because other grounds are dispositive, I need not address the parties' dispute

Pac sent letters to several of its customers informing them that Viskase infringed the '613 patent. It was these letters that prompted Viskase to file the instant declaratory action.

II. Legal Standard

World Pac is entitled to a preliminary injunction if it can establish four factors: "1) a reasonable likelihood of success on the merits; (2) irreparable harm if an injunction is not granted; (3) a balance of hardships tipping in its favor; and (4) the injunction's favorable impact on the public interest." *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1350 (Fed. Cir. 2001)(citing *Reebok Int'l Ltd. v. J. Baker, Inc.*, 32 F.3d 1552, 1555 (Fed. Cir. 1994)). A preliminary injunction cannot issue, however, unless World Pac establishes both of the first two factors. *Amazon.com*, 239 F.3d at 1350. Because I conclude, as explained in the remainder of this opinion, that World Pac has failed at this stage to establish a likelihood of success on the merits of its infringement claim, I need not embark upon the remainder of the inquiry. *Reebok Intern. Ltd. v. J. Baker, Inc.*, 32 F.2d 1554, 1556 (Fed. Cir. 1994) ("Because, irrespective of relative or public harms, a movant must establish both a likelihood of success on the merits and irreparable harm...the district court may deny a preliminary injunction based on the movant's failure to establish either of these two crucial factors without making

on this point.

additional findings respecting the other factors.”)

To prove a likelihood of success on the merits, World Pac must show that, in light of the presumptions and burdens that will inhere at trial, 1) World Pac will likely prove that Viskase infringes the '613 patent, and 2) World Pac's infringement claim will likely withstand Viskase's challenge to the '613 patent's validity and enforceability. *Id.* at 1350-51. *Helifix Ltd. V. Blok-Lok, Ltd.*, 208 F.3d 1339, 1351 (Fed. Cir. 2000). If Viskase raises a “substantial question” of either noninfringement or invalidity, then to carry its burden of showing a likelihood of success at trial, World Pac must establish that these defenses “lack[] substantial merit” before an injunction may issue. *Id.* at 1350-51.

III. Infringement

The infringement analysis begins with claim construction. *Carroll Touch, Inc. v. Electro Mechanical Sys., Inc.*, 15 F.3d 1573, 1576 (Fed. Cir. 1993) (“First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process.”) For World Pac to establish infringement, it must show that the Viscoat casings “embod[y] each claim element or its equivalent.” *Jeneric/Pentron, Inc. v. Dillon Company, Inc.*, 205 F.3d 1377, 1380 (Fed. Cir. 2000).

Viskase argues that it does not infringe the '613 patent

because 1) World Pac has failed to demonstrate that Viscoat casings are "impermeable" as that term is used in the patent, and 2) Viscoat casings do not transfer food and/or color according to the claims. Viskase also argues that World Pac is barred from asserting infringement based on the doctrine of equivalents.

On May 18, 2010, I issued a memorandum opinion and order construing certain terms used in the asserted claims. *Viskase Companies, Inc. v. World Pac Intern. AG*, ---F.Supp.2d---, 2010 WL 1979419 (N.D. Ill., May 18, 2010). I construed the term "impermeable" to mean a casing that prevents "a measurable loss of weight, flavor, and taste during customary production, cooking and storage." *Id.* at *5. This construction captured the essence of World Pac's proposed definition (though it did not wholly adopt World Pac's proposal),⁵ which linked the concept of impermeability to the functional object of preventing any losses in weight, taste, and flavor. *Id.* at *3. I also declined to hold that the phrase "in an amount sufficient to impart color and/or flavor to the foodstuff" is indefinite, and I observed that according to the claims, the transfer of color and/or flavor from the casing to the foodstuff occurs "when the food barrier casing encloses the foodstuff." *Id.* at *10.

⁵World Pac proposed that "steam and/or gas impermeable" should be construed as "having a low enough permeability or transmission rate to steam and/or gas, respectively, that prevents a measurable loss of weight, flavor, and/or taste during customary production, cooking, and storage." (Emphasis added)

A. Literal Infringement

"[A]n accused product literally infringes if every limitation recited in the claim appears in the accused product." *Jeneric/Pentron, Inc.*, 205 F.3d at 1382. Viskase asserts that World Pac has not established it is likely to succeed in showing that the Viscoat casings are "impermeable" because 1) it has offered no evidence that Viscoat casings prevent losses in taste and flavor, and 2) Viskase has demonstrated that Viscoat casings allow for measurable weight loss. Because the parties devoted substantial time at the hearing to the issue of weight loss, I begin with that issue.

The parties each conducted tests in which they prepared sample "logs" of processed meats, which they weighed and examined before and after processing and storage. Naturally, each side takes issue with the other's method of testing and the reliability of the other's results. World Pac relies upon tests conducted by Dan Hiebing, a sales manager for World Pac with over thirty years of experience in the meat packaging industry, to show that meats processed using Viscoat casings lose no weight during processing and storage. Viskase contends that World Pac's testing was "skewed" to show no weight loss by using smaller sample logs than those used in the industry, and by weighing the logs on a scale that is accurate only to .02 pounds, rather than .01 pounds, which World Pac itself contends is the level of precision used in the

industry.

To demonstrate that Viscoat casings do not prevent weight loss, Viskase relies on the report of its expert, Dr. Reitman, who designed and oversaw Viskase's testing. Dr. Reitman testified that she weighed Viskase's samples using "the standard scale that [Viskase] used," Tr. 737:22 and observed weight losses such as, in one sample, one hundredth of a pound on a log with an initial weight of 9.86 pounds, or 0.1 percent. Viskase also relies on an internal document dated April 17, 2007, which provides results of a "light fading test" conducted on Viscoat casings. PHX 92. Among the results reflected in this document is the "average weight loss," reported to be 0.13 and 0.14 percent on two Viscoat samples.

World Pac attacks Dr. Reitman's conclusions on several bases. First is that she weighed samples to tenths of a gram, on a scale much more precise than those Mr. Hiebing testified are commonly used in the industry.⁶ In addition, World Pac's expert, Dr. Gilbert, opined that the weight loss observed in Dr. Reitman's testing of the Viscoat samples was not a function of the permeability of the casing but was instead attributable to the evaporation of water from the surface of the log. Tr. at 378:24-

⁶World Pac also complains that Viskase provided no evidence regarding the precision or accuracy of the scale and declined to produce the scale for inspection by World Pac. This is important, World Pac argues, because the weight loss Dr. Reitman purports to have observed may fall within the "error tolerance" of the scale and so may not reflect any weight loss at all.

379:6. In any event, Dr. Gilbert stated, the weight loss Dr. Reitman purported to observe is "ridiculous" (i.e., insignificant) "from a commercial point of view." Tr. at 382:9. World Pac's other expert, Dr. Menna, agreed that the weight losses reported by Dr. Reitman are statistically insignificant. Tr. at 547:5-8.

On the stand, Dr. Reitman was questioned at length about whether and how her results accounted for environmental factors such as relative humidity and temperature, as well as factors such as water absorption by the "tails" at the ends of the logs.⁷ Dr. Reitman explained that she "did the calculations to see the relative magnitude of those possible weight contributions plus or minus and considered it relative to the magnitude of the weights measured," Tr. 861:17-20. She concluded that "any variation due to those factors would be small compared to what was actually being measured." Tr. 861:10-12. Dr. Reitman further explained that the "Chi-squared test" Dr. Menna used to form his opinion that her results were statistically insignificant is inappropriate for the type of data used in these tests. According to Dr. Reitman, the "paired T test" is the appropriate test for the data used, and it demonstrates the statistical significance of her results.⁸

⁷"Tails" are the bits of casing left at ends of the log after the casing is stuffed and clipped.

⁸World Pac objected that Dr. Reitman's report did not include any statistical analysis, to which Viskase responded that her analysis was offered to rebut Dr. Menna's statistical analysis, which was submitted approximately a week before the

World Pac also grilled Dr. Nicholson regarding the reliability and significance of the April 17, 2007 test report that records weight losses in Viscoat test samples. Dr. Nicholson could not recall the test conditions, and he acknowledged that the storage conditions were different than those that would likely be used by customers. Tr. 703:11-12, 20-23. Dr. Nicholson stated that Viskase's customers would say that the 0.14 percent weight loss observed in the test "would be significant." Tr. 706:15.

As is apparent from the foregoing, the parties have presented a classic battle of the experts on the question of whether Viscoat casings prevent "a measurable loss of weight...during customary production, cooking and storage." The jury will ultimately have to weigh the competing evidence and decide whose testimony to credit; what I must decide at this stage is whether Viskase's evidence is sufficient to raise "a substantial question" of noninfringement, which World Pac has not shown "lacks substantial merit." I conclude that notwithstanding World Pac's attacks on Dr. Reitman's analysis, Viskase has presented more than insubstantial evidence that food products processed in Viscoat casings lose a measurable amount of weight. Dr. Reitman's conclusions may not be unassailable in every respect, but her testing appears to be generally consistent with methods used in the industry by those

hearing began. In light of World Pac's own late disclosure of its expert's statistical analysis, I allowed Dr. Reitman to testify on this point.

skilled in the art. Moreover, the Viskase test report conducted outside of this litigation (and so, one may reasonably assume, under conditions that are typical for such tests in the industry), reveals that some weight was indeed lost in the Viscoat-encased products.⁹

Dr. Gilbert's insistence that the weight losses Viskase claims occur with Viscoat casings are so small as to be commercially insignificant is not only contrary to the testimony of Dr. Nicholson, it is also beside the point as far as literal infringement is concerned. As Viskase emphasized throughout the hearing, my construction of "impermeable," while allowing for something less than absolute impermeability (which would be purely theoretical, since the parties agree that no substance is capable of achieving absolute impermeability), literally excludes weight losses that are measurable in any units commonly used as a practical matter in the industry. Whether any losses so measured have commercial significance is an entirely separate question. World Pac did not argue in its *Markman* briefing that "impermeable" means preventing weight, taste and flavor losses that the industry would view as commercially significant; it argued, and I agreed,

⁹I expressed some concern at the hearing that the product reflected in the 2007 test report may not be the same as the accused product being sold today. Dr. Nicholson testified that the 2007 report referred to "the commercial Viscoat structure." Tr. 719:12. World Pac did not elicit testimony that would suggest that any changes were subsequently made to the structure, so I assume at this point that the structure is the same.

that "impermeable" means that no measurable losses in weight, taste, and flavor (a phrase used repeatedly in the patent) are observable under ordinary industry conditions.

Based on the evidence that some measurable weight loss occurs when foods are processed in Viscoat casings, I conclude that Viskase has raised a "substantial question" of noninfringement, which World Pac has not shown "lacks substantial merit."

In addition to the foregoing, I agree with Viskase that World Pac's evidence regarding flavor and taste is lacking. World Pac's excuse that it was "unaware" of the "conjunctive requirement" inherent in the claim construction it argued for is flimsy. It is true that World Pac's proposed construction used the phrase "weight, flavor, *and/or* taste" (emphasis added). Although the implications of this nuance for World Pac's infringement case did not factor into my claim construction analysis, my substitution of the word "and" for "and/or" was deliberate. In construing the claim, I focused on the language of the specification; reasoned that the '613 patent repeatedly links the quality of impermeability with the ability to prevent losses in weight, taste, and flavor; and concluded that the patentees intended to define the term "impermeable" with reference to that object. *Viskase*, 2010 WL 1979419, at *3. Notably, each of the four instances in which the

patent draws this link uses the conjunction "and."¹⁰ Moreover, references to losses in "weight, flavor and taste" occur twice in negative clauses, see col. 1 ln. 44-45 ("there is no loss in weight, flavor and taste"); col. 4 ln. 32 ("[n]o losses in weight, taste and flavor result"), even though "or" is the more usual conjunction to use in this syntactic structure (i.e., one would ordinarily say "there is no loss in weight, flavor, or taste.")

The fact that "and" was used instead suggests that the patentees considered "weight, flavor, and taste" collectively, as a kind of tripartite "X factor," measurable losses of which are prevented by the impermeable plastic foil of the claims. Indeed, this interpretation is supported by the manner in which the phrase appears in two affirmative clauses, both of which refer to "a loss" (not "losses") in weight, taste and flavor. See col. 1 lns. 28-29 ("the production of food in a cellulose fiber casing is always associated with a loss in weight, taste and flavor"); col. 1 lns. 60-61 ("In this subsequent process, there is again the possibility of a loss in weight, flavor and taste"). Had the patentees intended to claim casings that prevent losses in one or more of these qualities, but not necessarily all of them, they would have

¹⁰Although I am not sure it would have supported World Pac's construction as proposed, the patentees certainly knew how to use the conjunction "and/or" to signify an inclusive "or." They did so no fewer than eighteen times in the patent, but not in the phrase "weight, flavor and taste."

used very different language.¹¹ In light of the language they chose, it simply is not plausible to interpret "impermeable" to include casings that allow for measurable losses in weight, measurable losses in taste, or measurable losses in flavor.

Nevertheless, World Pac presented strikingly scant evidence that Viscoat casings prevent losses in taste and flavor. Despite previewing at the claim construction stage, and fleshing out through Dr. Gilbert's testimony at the preliminary injunction hearing, the kinds of objective tests that are used in the industry to ascertain these kinds of losses World Pac had not conducted any of the tests it identified. The most significant evidence World Pac presented was a semi-complete, draft product specification purportedly used by Subway, an end user of products that may be processed in either World Pac's patented casings or the Viscoat casings. World Pac argues that because the draft specification lists on its face certain taste and flavor parameters, and because it also states that Viscoat casings have been approved for use on the product, it is possible to infer that foods processed in Viscoat casings suffer no measurable loss in taste and flavor. This is simply too great a leap to take.

¹¹It is not immediately obvious how the patentees might have described their invention had this been their intent. But I need not linger on this hypothetical interpretation, since I am satisfied that the language actually used unambiguously conveys that the patentees intended to claim casings that prevented all three types of losses.

To begin with, none of the witnesses present at the hearing had personal knowledge of how Subway created or used the draft specification, which on its face was only partially complete. Specifically, in a chart relating to the "flavor profile" of the finished product, the fields for both the standard and the tolerance are populated with the notation "TBD." Next, when World Pac asked Dr. Gilbert whether, based on his general knowledge of the industry, he believed the draft specification offered any evidence that Viscoat casings prevented losses in taste and flavor, he gave this equivocating answer: "No, I would have to go by the fact that a taste panel is used, so I'm assuming the taste panel is a proper taste panel." Tr. 401: 16-17. And when Viskase's counsel asked Dr. Gilbert whether the Subway specification reflects any test results for the Viscoat product, he answered, "No, but it implies somewhere in here that any product that is offered for sale to Subway must meet the equivalent of a taste panel." These answers illustrate how speculative this evidence is as a basis for concluding that the Viscoat casings prevent losses in taste and flavor.

Because World Pac identified and discussed various objective tests, (including taste panels, see, e.g., Tr. 228:6; 393:24-25, and gas chromatography, see 431:22-432:21), and several instruments (including, for example, something called an Instron, a mass spectrometer, and a Raman spectra, see Tr. 432:21-22) used to test

taste and flavor, its failure to come forward with the results of any such tests is all the more conspicuous. The Subway draft specification is simply too uncertain, on too many levels, to compensate for this hole in World Pac's evidence.¹²

B. Doctrine of Equivalents

Under the doctrine of equivalents, an accused product may be found to infringe if "a component in the accused subject matter performs substantially the same function as the claimed limitation in substantially the same way to achieve substantially the same result." *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 149 F.3d 1309 (Fed. Cir. 1998). In its final brief in support of its

¹²I note in this connection, lest the parties make too much of this finding, that I do not mean to suggest that product specifications of this type are necessarily without relevance to the question of whether losses in flavor and taste occur. It appears that a dispute has sprung up, in light of comments I made in the course of my claim construction opinion, about the type of evidence World Pac must offer to establish that Viscoat casings prevent losses in taste and flavor. Specifically, in apparent response to my observation that ascertaining losses in taste and flavor, when comparing a product at two moments in time ("before and after processing"), is not impermissibly subjective under *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342 (Fed. Cir. 2005), Viskase has implied that unless World Pac presents the results of taste tests comparing the taste and flavor of a raw meat emulsion with the taste and flavor of the end product it cannot prove its case. Viskase reads too much into my remark. In *Datamize*, the court held that the limitation "aesthetically pleasing" was insolubly ambiguous because it depended on an "undefined standard." *Id.* at 1352. My observation was merely to distinguish the limitation at issue here, which calls for a comparative analysis of some sort, moored to standards commonly used in the industry, from the inherently standard-less limitation in *Datamize*. I did not intend to delineate or define the proof on which World Pac could rely in support of its claim.

motion,¹³ World Pac argues that the polyethylene and nylon layers of the Viscoat casings are equivalent to the "impermeable plastic foil" of the '613 patent because they are steam and/or gas resistant films that provide a barrier to oxygen and moisture over a period of intended use to achieve substantially the same result: no significant loss in weight, taste and flavor. In other words, even if the Viscoat casings do not literally infringe because they allow some measurable loss in weight, taste and flavor, these losses are so insignificant that they are equivalent to no losses.

Viskse argues that World Pac is foreclosed from asserting the doctrine of equivalents for two reasons: first, because World Pac did not timely develop this theory of liability, and second, because the theory as World Pac has now disclosed it would vitiate my construction of "impermeable" and is inconsistent with the prosecution history.

On the first point, it is fairly clear that although World Pac generally pleaded the doctrine of equivalents, and that its experts made passing reference to the doctrine in their initial reports, World Pac did not flesh out the theory with "particularized evidence and linking argument," *PC Connector Solutions LLC v. SmartDisk Corp.*, 406 F.3d 1359, 1364 (Fed. Cir. 2005), until Dr.

¹³For various reasons, each party filed several versions of its brief. The version I consider World Pac's "final" was filed on May 24, 2010.

Menna's rebuttal report of May 14, 2010.¹⁴ Nevertheless, because discovery was ongoing even through the start of the hearing, I allowed World Pac to present the evidence it deemed relevant to its equivalence theory on the understanding that Viskase would be allowed to conduct any additional discovery it felt was necessary to respond to World Pac's theory. Under these circumstances, any prejudice to Viskase resulting from World Pac's late disclosure was minimal and does not justify precluding World Pac from presenting its equivalence theory.

Viskase next raises two substantive arguments for barring the theory. The first is that World Pac's equivalence theory would violate the "all-elements rule," under which "a patentee may not assert 'a theory of equivalen[ce] [that] would entirely vitiate a particular claim element.'" *Trading Tech. Intern., Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1356 (Fed. Cir. 2010)(original modifications). According to Viskase, allowing World Pac to argue that insignificant losses in weight, taste and flavor are equivalent to no measurable losses would vitiate the meaning of "impermeable" as I have construed that term. I disagree.

"Claim vitiation applies when there is a 'clear, substantial

¹⁴I disagree with World Pac that opening reports of Dr. Menna and Dr. Gilbert articulate the theory World Pac now advances. It is true that both experts referred to the doctrine of equivalents and cited the function, way, result test as the relevant test, but there was no coherent analysis applying that test on an element-specific basis to the accused structure.

difference or a difference in kind' between the claim limitation and the accused product. [] It does not apply when there is a 'subtle difference in degree.'" *Trading Tech.*, 595 F.3d at 1355 (quoting *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1360 (Fed. Cir. 2005)). Viskase relies on three cases to support its argument that claim vitiation applies here: *Moore U.S.A., Inc. v. Standard Register Co.*, 229 F.3d 1091 (Fed. Cir. 2000); *Asyst Techs., Inc. v. Emtrak, Inc.*, 402 F.3d 1188 (Fed. Cir. 2005); and *Planet Bingo, LLC v. GameTech International, Inc.*, 472 F.3d 1338 (Fed. Cir. 2006). In each of these cases, the court considered a limitation that was "binary in nature," *Asyst Tech.*, 402 F.3d at 1195, and rejected an equivalence arguments that would have made the limitation equivalent to its opposite. Thus, in *Moore U.S.A.*, the court held that a minority (i.e., "the very antithesis of a majority") is not the equivalent of a majority, 229 F.3d at 1106; in *Asyst*, the court held that "mounted" is not equivalent to "unmounted" 402 F.3d at 1195 ("the term 'mounted' can fairly be said to specifically exclude objects that are 'unmounted'"); and in *Planet Bingo*, the court held that "before" is not the equivalent of "after." 472 F.3d at 1345 (citing *Moore* and *Asyst*, and distinguishing cases that "dealt only with questions of small variations in the degree of achieving a claimed limitation.").

By contrast to these cases, the evidence presented here reveals that "impermeable," as understood to those of skill in the

art, is a relative term, rather than a binary one. See, e.g., Gilbert Rep. of 04/02/2010 at 7-8 ("There is nothing that I know of that is a completely impermeable material, but there is always a degree of permeability with a time dimension in the scientific definition that can be anything from a week to a century.") My construction of the term is not to the contrary. Despite Viskase's frequent reference to the portion of my opinion in which I noted that the patent's "absolute language" has meaning, I concluded that the patent defined "impermeable" with reference to a particular functional object, rather than with reference to an absolute value. This is consistent with an understanding of the term as inherently relative.

Viskase tries to shape its argument to fit the reasoning of *Moore*, *Asyst*, and *Planet Bingo* by framing the question as whether "preventing" a measurable loss can be deemed the equivalent of "allowing" a measurable loss. But even as Viskase insists, on the one hand, that Viscoat casings do not meet the impermeable limitation because they "allow" measurable weight losses, Viskase promotes Viscoat casings in its product literature as "prevent[ing] weight loss" during storage. Tr. 706:1-6. This contrast belies the binary distinction Viskase seeks to create that a casing is either permeable or impermeable, but not both. Similarly, as I observed in the course of construing the term, the '613 patent's specification refers to the "impermeability" of the pure plastic

casings that were known in the art, although there is no dispute that those casings are not absolutely impermeable.

In short, the evidence in this case suggests that the difference between zero weight loss and negligible weight loss is merely a "subtle difference in degree," rather than a "clear, substantial difference or a difference in kind." *Cf. Trading Tech.*, 595 F.3d at 1355-56. Accordingly, the "all-elements rule" does not preclude World Pac from asserting its equivalence theory as a matter of law.

Nor does the doctrine of prosecution history estoppel bar World Pac from asserting the theory. "Prosecution history estoppel prevents a patentee from recapturing under the doctrine of equivalents subject matter surrendered during prosecution to obtain a patent." *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 480 F.3d 1335, 1341 (Fed. Cir. 2007). Viskase argues that in the course of prosecuting the '613 patent, World Pac replaced the term "tight" with the term "impermeable" and therefore should not be able to assert the doctrine of equivalents to expand the scope of "impermeable." This argument fails for the simple reason that the record does not support Viskase's characterization of this change as a "narrowing amendment." As World Pac points out, the phrase "impermeable foil" appeared in the claims before the amendment Viskase cites. Although the term "tight" was omitted from the claims as issued, and the term "impermeable" was instead

used to modify the "plastic foil" previously described as "tight," the record supports World Pac's argument that these changes were intended for consistency and clarity, rather than for the purpose of surrendering claim scope that would have been covered by "tight."¹⁵ Accordingly, prosecution history estoppel does not apply.

In short, although it does not alter the outcome of the present motion, I conclude that World Pac may, in due course, pursue its infringement claim based on the doctrine of equivalents.

IV.

For the reasons set forth above, I conclude that World Pac has not, at this stage, demonstrated that it is likely to prove at trial that Viscoat casings are "impermeable" as that term is used in the patent. Because this finding is sufficient to defeat World Pac's preliminary injunction motion, I need not examine Viskase's additional noninfringement argument, its invalidity defenses, or the remaining elements of the preliminary injunction inquiry.¹⁶

¹⁵I discussed this amendment in more detail in my claim construction opinion, 2010 WL 1979419 at *5-*6. The parties agree that the amendment was in response to the Examiner's concern that the application read on U.S. Patent No. 4,446,167 (the "Smith patent"), which disclosed barrier coated casings. Although the parties provide competing rationales to explain why the amendment successfully overcame the Smith patent, neither party asserts that it had anything to do with eliminating the word "tight" and using the word "impermeable" instead.

¹⁶In the hope of streamlining the parties' future filings, however, I note that Viskase's second noninfringement argument-- that the accused casings do not transfer flavor or color

World Pac's motion is denied.

ENTER ORDER:



Elaine E. Bucklo
United States District Judge

Dated: August 9, 2010

according to the claims--appears to rely on an erroneous interpretation of my claim construction. My conclusion that the patent requires the transfer of color or flavor "when the food barrier casing encloses the foodstuff" should not be read to mean that this transfer occurs instantaneously upon enclosure, but rather at some point during enclosure. Having reviewed the portion of the prosecution history Viskase cites in support of its argument, I disagree that it requires the transfer of color or flavor to occur immediately upon enclosure.