



STARK, U.S. District Judge:

On January 14, 2014, Plaintiff Kraft Foods Group Brands (“Kraft” or “Plaintiff”) filed suit against Defendants TC Heartland and Heartland Packaging Corporation (“Heartland” or “Defendants”) alleging infringement of U.S. Patent Nos. 8,293,299 (the “299 patent”), 8,603,557 (the “557 patent”), and 8,511,472 (the “472 patent”). These patents generally relate to shelf-stable, flavored liquid beverage concentrates and packaging for them.

The parties submitted technology tutorials (D.I. 126, 128) and claim construction briefs (D.I. 108, 109, 129, 131). The Court held a hearing on January 5, 2016 to address the pending claim construction disputes. (*See* D.I. 192 (“Tr.”))

On January 13, without seeking leave and without additional submissions being requested by the Court, Heartland filed a “Letter Regarding Questions Asked of Heartland at *Markman* Hearing.” (D.I. 160) Understandably, Kraft felt it necessary to respond with its own post-hearing letter, and did so on January 19. (D.I. 162) In its letter, Kraft advised the Court that Heartland had not asked Kraft “whether it would oppose Heartland’s filing of the letter.” (D.I. 162) Although the far preferable practice in such circumstances is to confer with opposing counsel and present a joint request for leave to file an uninvited post-hearing submission,¹ the Court has reviewed and considered the parties’ letters and will not strike them.²

¹At least some of the questions Heartland attempts to answer in its letter are ones the Court prefaced at the hearing with statements like, “if you need more time to think of your position, that’s fine.” (Tr. at 63) Thus, had Heartland asked Kraft whether it opposed filing a post-hearing letter, it seems likely Kraft (and ultimately the Court) would have agreed that such a filing might be appropriate.

²Additional procedural aspects of this case warrant mention. On September 24, 2015, the Court overruled Heartland’s objections to Magistrate Judge Burke’s recommendation to deny Heartland’s motion to transfer this case to the Southern District of Indiana. (*See* D.I. 7, 59, 70,

I. LEGAL STANDARDS

The ultimate question of the proper construction of a patent is a question of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837 (2015) (citing *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388-91 (1996)). “It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (internal quotation marks omitted). “[T]here is no magic formula or catechism for conducting claim construction.” *Id.* at 1324. Instead, the court is free to attach the appropriate weight to appropriate sources “in light of the statutes and policies that inform patent law.” *Id.*

“[T]he words of a claim are generally given their ordinary and customary meaning . . . [which 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, i.e., as of the effective filing date of the patent application.” *Id.* at 1312-13 (internal citations and quotation marks omitted). “[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted). The patent specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of

78, 80) On October 23, 2015, Heartland filed a petition for writ of mandamus relating to this order in the Court of Appeals for the Federal Circuit. (*See* D.I. 101; *see also In re: TC Heartland LLC*, No. 16-105 (Fed. Cir.)) Thereafter, this Court denied *Kraft*'s motion to stay the case pending final decisions in *inter partes* reviews that have been instituted at Heartland's request. (*See* D.I. 114, 119, 122, 149, 157) At the claim construction hearing on January 5, 2016, the Court reminded the parties that it was committed to issuing its claim construction order within 60 days. (D.I. 192 at 112; *see also* D.I. 38 ¶ 14 (scheduling order)) On January 15, the Federal Circuit listed the mandamus action for oral argument, to be heard on March 11. (*See* No. 16-105 D.I. 46) No party has asked the Court to refrain from issuing its claim construction order due to the pendency or status of the mandamus action.

a disputed term.” *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

While “the claims themselves provide substantial guidance as to the meaning of particular claim terms,” the context of the surrounding words of the claim also must be considered.

Phillips, 415 F.3d at 1314. Furthermore, “[o]ther claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment . . . [b]ecause claim terms are normally used consistently throughout the patent” *Id.* (internal citation omitted).

It is likewise true that “[d]ifferences among claims can also be a useful guide For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Id.* at 1314-15 (internal citation omitted). This “presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim.” *SunRace Roots Enter. Co., Ltd. v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003).

It is also possible that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316. It bears emphasis that “[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)) (internal quotation marks omitted).

In addition to the specification, a court “should also consider the patent’s prosecution

history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996). The prosecution history, which is “intrinsic evidence,” “consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent.” *Phillips*, 415 F.3d at 1317. “[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.” *Id.*

In some cases, “the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 135 S. Ct. at 841. Extrinsic evidence “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. For instance, technical dictionaries can assist the court in determining the meaning of a term to those of skill in the relevant art because such dictionaries “endeavor to collect the accepted meanings of terms used in various fields of science and technology.” *Phillips*, 415 F.3d at 1318. In addition, expert testimony can be useful “to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.” *Id.* Nonetheless, courts must not lose sight of the fact that “expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence.” *Id.* Overall, while extrinsic evidence “may be

useful” to the court, it is “less reliable” than intrinsic evidence, and its consideration “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing *Vitronics*, 90 F.3d at 1583).

Finally, “[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). It follows that “a claim interpretation that would exclude the inventor’s device is rarely the correct interpretation.” *Osram GmbH v. Int’l Trade Comm’n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (quoting *Modine Mfg. Co. v. U.S. Int’l Trade Comm’n*, 75 F.3d 1545, 1550 (Fed. Cir. 1996)).

II. CONSTRUCTION OF DISPUTED TERMS³

A. “to provide the concentrate with at least about 5 times more acid than an otherwise identical non-buffered concentrate having the same pH”⁴

Kraft

Ordinary and customary meaning as understood by the one of ordinary skill in the art

TC Heartland

This language fails to inform, with reasonable certainty, those skilled in the art about the scope of the alleged invention.

Court

The Court requires further assistance, likely including presentation of extrinsic evidence, in order to resolve this dispute. The Court may ultimately agree with Plaintiff’s alternative construction – by which water “replaces” the acid and buffer that is “missing” from the “otherwise identical non-buffered concentrate” – or may ultimately find that nothing necessarily “replaces” the acid and buffer that is “missing” from the “otherwise identical non-buffered concentrate.” Alternatively, the Court may eventually be persuaded by Defendant that a person of ordinary skill in the art would not know which of these two possibilities (or even some other possibility) is correct and, therefore, that the disputed claims must be found indefinite.

This term relates to the patented flavored beverage concentrate. The patent recites a general recipe for the concentrate. The amount of each ingredient is listed as the percentage of the weight of the concentrate attributable to that ingredient. A range of possible weight percentages is listed for each ingredient, such that many different compositions are possible. For example, claim 1 of the ’299 patent recites a concentrate comprising “up to” 10% buffer by weight, 15-30% acid by weight, 1-30% flavoring by weight, and 30-65% water by weight.⁵

³The terms “shrinkage rate” and “shrinkage ratio” are no longer in dispute. (Tr. at 98) Accordingly, the Court will not construe these terms.

⁴This term appears in claims 1-17 and 21 of the ’299 patent and claim 10 of the ’557 patent.

⁵In general, the inventors were aiming to formulate a concentrate that included enough acid for tartness and antimicrobial resistance while maintaining a stable flavor even after being

To understand the parties' dispute, it is helpful to display claim 1's "recipe" in the form of a table:

Table 1. "Recipe" for buffered concentrate

Ingredient	Weight Percentage
Buffer	up to 10%
Acid	15-30%
Flavor	1-30%
Water	30-65%

A 100 gram sample of a buffered concentrate prepared according to this recipe might contain the following weights of each ingredient:

Table 2. Ingredient breakdown of a 100 g sample of an exemplary claimed concentrate

Ingredient	Weight
Buffer	10 g
Acid	25 g
Flavor	2 g
Water	63 g
Total	100 g

The disputed term adds the limitation that the amount of buffer in the claimed buffered concentrate must "provide the concentrate with at least about 5 times more acid than an

stored for up to several months at room temperature. *See* '299 pat. col. 22:37-23:6. The claims require that the amount of each component be selected so as to deliver desired amounts of flavoring to the final beverage at specific dilution ratios. *See, e.g.,* '299 pat. col. 37:36-41 ("The level of dilution can also be expressed as the amount of concentrate – which can also be referred to as a single serving of concentrate – needed to provide a RTD ["ready to drink"] beverage having a desired amount of certain ingredients, such as acid, alcohol, and/or preservatives, as well as a desired taste profile, including, [for] example, sweetness.").

otherwise identical non-buffered concentrate having the same pH.” In order to know whether a particular buffered concentrate (such as the exemplary concentrate set forth above) satisfies this claim limitation, it is necessary to compare that buffered concentrate to the appropriate “otherwise identical non-buffered concentrate having the same pH.”

The parties’ dispute centers on what it means for a buffered concentrate to be “otherwise identical” to a concentrate containing no buffer and having the same pH. The disagreement arises because the non-buffered version of the concentrate contains far less acid than the buffered version. This raises the question of what it means for a claimed concentrate to be “otherwise identical” to another concentrate that completely lacks one of its four components (buffer) and contains substantially less of another component (acid).

There is some agreement between the parties as to what is contained in the comparison “otherwise identical” non-buffered concentrate. First, the parties agree that the non-buffered concentrate does not contain any buffer; that is what makes it “non-buffered.” Second, the parties agree that the non-buffered concentrate has far less acid than the buffered concentrate. Specifically, since the buffered concentrate must have “at least 5 times more acid” than the non-buffered concentrate, it follows that the non-buffered concentrate must have no more than one-fifth as much acid as the buffered concentrate. However, the parties disagree as to what, if anything, “replaces” the buffer and acid that are in the buffered concentrate but are not in the non-buffered concentrate.

Kraft argues that, for a person of ordinary skill in the art (“POSA”), the answer would be clear: an “identical” concentrate is one that contains an identical *weight percentage* of flavoring, so to prepare such a concentrate one must increase the ratio of water to flavoring in order to

compensate for the weight of the absent buffer and acid. In other words, a POSA reviewing the patent and the prosecution history would know that all of the “missing” buffer and acid are “replaced” with water. Thus, in Kraft’s view, the composition of a non-buffered concentrate that is “otherwise identical” to the buffered concentrate of Table 2 is as follows:

Table 3. Kraft’s view of non-buffered comparison concentrate (“weight percentage”)

Ingredient	Weight
Buffer	0 g
Acid	5 g
Flavor	2 g
Water	93 g
Total	100 g

By contrast, Heartland contends that a POSA reviewing the patent and the prosecution history would not know with reasonable certainty what, if anything, “replaces” the “missing” buffer and acid in the comparison non-buffered concentrate.⁶ Such a POSA might think, as Kraft proposes, that all of the buffer and acid is, indeed, “replaced” with water. Alternatively, a POSA might think that some or all of the buffer and acid could be “replaced” with some other ingredient. Or, perhaps more likely, a POSA might think that the “missing” buffer and acid would not be “replaced” with anything, so that the *ratio* of flavoring to water does not change. This latter possibility is shown in Table 4 below:

⁶The parties do not provide the Court with much guidance as to the education and experience or other characteristics of the relevant POSA. It is unclear whether they have a material disagreement on these points. As there will be further proceedings with respect to the instant claim construction dispute, the parties will have an opportunity to further enlighten the Court about the POSA.

Table 4. A Heartland alternative for non-buffered comparison concentrate (“flavoring ratio”)

Ingredient	Weight
Buffer	0 g
Acid	5 g
Flavor	2 g
Water	63 g
Total	70 g

Most important, in Heartland’s view, is that all three of these possibilities (and possibly others) could occur to a POSA reading the patent and prosecution history. Thus, the patent fails to “inform those skilled in the art about the scope of the invention with reasonable certainty,” *Nautilus*, 134 S. Ct. at 2129, and the claims must be held invalid due to indefiniteness.

At bottom, then, Kraft contends that there is one and only one way that a POSA would understand the term “otherwise identical” in this context. Kraft is so certain of this position that it urges the Court not even to construe the disputed claim term, but instead to adopt an unspecified “ordinary and customary meaning as understood by one of ordinary skill in the art.” In light of the parties’ dispute, this non-particularized formulation would be entirely unhelpful to the jury.⁷ As a less preferred alternative, Kraft has proposed a construction. (*See* Tr. at 31-33) After modifying Kraft’s alternative proposed construction, one way to capture Kraft’s position as a matter of claim construction might be to construe “otherwise identical non-buffered concentrate having the same pH” to mean: “one that includes no buffer, no more than one-fifth the weight of

⁷The Court finds that the parties have presented a fundamental dispute regarding the scope of a claim term and it is one the Court will need to resolve by construing the claim. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362-63 (Fed. Cir. 2008).

acid of the buffered concentrate, more water (to replace the removed buffer and acid), and identical weight percentages of each ingredient other than acid, buffer, and water.”

Heartland, on the other hand, contends that Kraft’s proposed construction only captures one of several ways a POSA might understand an “otherwise identical non-buffered concentrate having the same pH.” Among the other alternatives is the one depicted above in Table 4. That alternative, reduced to words, might be: an “otherwise identical non-buffered concentrate having the same pH” means “one that includes no buffer and no more than one-fifth the weight of acid of a buffered concentrate having identical weights of each ingredient other than acid, buffer, and water.”

The record before the Court does not conclusively support either construction. Some intrinsic evidence supports Kraft’s proposed “weight percentage” construction, including the fact that the claims describe the “recipe” for the concentrate in terms of weight percentage.⁸ There is also extrinsic evidence – most particularly an expert submission by *Heartland*’s expert in the parallel IPR proceeding – that appears to support Kraft’s view that a POSA does, indeed, know how to compare buffered and non-buffered concentrates in the context of the patent.⁹ However,

⁸Kraft also points to Table 12 in the specification, which identifies “variants” of a particular concentrate that differ only with respect to buffer concentration and, as a consequence, pH. See ’299 patent col. 23:45-60. The recipes for variants with lower buffer concentrations include more water than variants with higher buffer concentrations, such that water and buffer directly offset each other and the weight percentages of all other ingredients remain the same.

⁹Kraft refers to the declaration of Kimberly Feruzzi, who provided testimony on obviousness for Heartland in an *inter partes* review proceeding related to the patents-in-suit. Feruzzi’s declaration describes the methods she used to conduct experiments comparing the pH of concentrates prepared according to the patent claims to the pH of non-buffered reference concentrates with lower acid contents. (D.I. 109-6 at 27-35) Feruzzi explained that she conducted these experiments to determine whether certain buffered concentrates “fell within the scope of the claims of the ’299 patent.” (*Id.* at 27) Specifically, by comparing the buffered and

the record also contains intrinsic and extrinsic evidence that favors the alternative, “flavoring ratio” construction highlighted by Heartland. For instance, because the “otherwise identical” reference concentrates cited in the claims contain dramatically different amounts of acid and buffer than the claimed concentrates, they unquestionably lack certain benefits of the claimed acidic concentrates (e.g., shelf-stability and antimicrobial activity). Kraft’s weight percentage construction implies that these “otherwise identical” concentrates would also have dramatically different dilution ratios, because they also contain much more water relative to flavoring.¹⁰ Kraft’s construction, therefore, may be at odds with the claims, which address the *addition* of acid and buffer to a reference compound to achieve desirable properties, without mentioning commensurate changes to the dilution ratio of the beverage, or to the amount of flavoring (to hold the dilution ratio constant).¹¹

non-buffered concentrates, she hoped to determine whether – as required by the patent – the buffered versions contained an amount of buffer that “provid[ed] the concentrate with at least about 5 times more acid than the otherwise identical non-buffered concentrate having the same pH.” Because Feruzzi prepared her “comparison” samples in a manner consistent with Kraft’s construction, and did not express “any uncertainty or hesitation about the meaning of that limitation,” Kraft argues that her testimony provides strong support as to how a person of ordinary skill in the art would understand the claims. (D.I. 131 at 6) Recognizing that claim terms are afforded a broader construction in IPR proceedings than in district court litigation, *see In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1276 (Fed. Cir. 2015) *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, 2016 WL 205946 (U.S. Jan. 15, 2016), and that Feruzzi’s opinion (which was prepared in the course of litigation) is not dispositive, it may nonetheless merit some weight in the Court’s ultimate conclusion as to the proper construction of the disputed term.

¹⁰The Court’s understanding is that an increase in the ratio of water to acid on the scale demanded by Heartland’s construction would not itself dramatically affect pH because, as the parties explained at the claim construction hearing, pH is measured on a logarithmic scale. (Tr. 77-78)

¹¹Both parties have provided expert reports, which consist largely of conclusory statements in support of the respective parties’ positions. (*See* D.I. 110-3 at 66-71; D.I. 131-2 at

After careful consideration of this record, the Court finds that it is presently unable to resolve the parties' dispute with respect to this claim term. It is not clear at this time whether Kraft's "weight percentage" construction, Heartland's "flavoring ratio" construction, or some other alternative is correct. Moreover, Heartland has failed to meet the heavy burden it has taken on in seeking to invalidate the claims. To demonstrate indefiniteness, a party must demonstrate that a POSA at the time of the invention would not have known, with reasonable certainty, the scope of the claims. *See Nautilus*, 134 S. Ct. at 2129. Though the Court is not able to ascertain the meaning of this term based on the record before it, the Court is also not convinced that a person of ordinary skill in the art would have been unable to do so.

Under these circumstances, the Court requires additional input from the parties to assist it in evaluating how a POSA would have understood the this term in the context of the patent. It may be helpful for the Court to hear directly from experts as to how a POSA would modify a buffered concentrate that is within the scope of the claims (e.g., the one described in Table 2 above) to arrive at the "otherwise identical" non-buffered concentrate. *See generally Teva Pharm. USA, Inc.*, 135 S. Ct. at 841 ("In some cases . . . the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period."). It might also be useful to examine laboratory notebooks and similar materials created by the inventors or those working with them to see how they, in fact, moved between

buffered concentrates and “otherwise identical” non-buffered concentrates.¹²

Upon review of such materials, the Court may ultimately agree with Kraft that a POSA would always and necessarily understand the “otherwise identical” non-buffered concentrate to look like what is depicted above in Table 3. Alternatively, the Court may eventually be persuaded that one of Heartland’s proposals for how a POSA would understand the “otherwise identical” non-buffered concentrate (such as the one exemplified in Table 4 above) is correct. Yet another possibility is that the Court will in the end agree with Heartland that the claims fail to inform a POSA with reasonable certainty of how to understand the “otherwise identical” non-buffered concentrate and, therefore, that the claims are indefinite and invalid. By separate Order, the Court will direct the parties to provide the Court with their proposal(s) for additional proceedings that will allow the Court to resolve this claim construction dispute.

B. “selected” (in “selected to provide”)¹³

Kraft Ordinary and customary meaning as understood by one of ordinary skill in the art
TC Heartland “calculated at the time of formulation”
“chosen or picked”

The parties agree that the plain and ordinary meaning of “selected” is “chosen” or “picked.” (D.I. 108 at 10; D.I. 131 at 12) Heartland argues, nonetheless, that an alternative construction is required because the patentee disclaimed this plain and ordinary meaning during

¹²It does not appear that such materials have been made part of the record for claim construction to this point.

¹³This term appears in claims 1, 5, 6, and 21 of the ’299 patent and claims 15 and 23 of the ’557 patent.

prosecution.

Heartland's position rests on the significance of a claim amendment made during the prosecution of the '299 patent. After the Examiner rejected a claim which had required that "the ratio of acid and buffer" in the claimed concentrate be "*effective* to provide the concentrate with at least about 5 times more acid than an otherwise identical non-buffered concentrate having the same pH," the patentee amended the claim to recite "the ratio of acid and buffer *selected* to provide" these results. (D.I. 109-2 at 146) The Examiner had rejected the pre-amendment claims due to indefiniteness, stating that "it is unknown what amounts of acid and buffer would be required to constitute an 'effective ratio' to maintain the acidity level at the claimed values." (*Id.* at 127) The patentee's answer expressed disagreement, explaining that "one of ordinary skill in the art can readily calculate the ratio of acid and buffer . . . to provide the concentrate with" the claimed amount of acid. (*Id.* at 146) "Nonetheless," the patentee continued, the patentee had "amended [the claims] to recite 'the ratio of acid and buffer *selected* to provide.'" (*Id.*) The Examiner then allowed the claims.

In Heartland's view, this record shows that Kraft "discarded" the term "effective" during prosecution, thus precluding Kraft from arguing here that "selected" essentially means "effective." (D.I. 108 at 10) The Court disagrees.

A claim amendment amounts to a disclaimer if the patentee narrowed the claim in order to make it patentable. See *Research Plastics, Inc. v. Fed. Packaging Corp.*, 421 F.3d 1290, 1297 (Fed. Cir. 2005). But not every amendment gives rise to a disclaimer; an amendment limits claim scope only if a patentee "took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the relevant subject matter." *Schwing*

GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324 (Fed. Cir. 2002). Here, the prosecution history shows that the patentee clarified, rather than narrowed, the scope of the claims. That is, the patentee changed the word “effective” to “selected” in order to harmonize the language of the claims with the patentee’s stated position that a person of ordinary skill in the art would know how much acid and buffer to use to meet the claim limitations.

Because the patentee amended the claims to clarify, rather than narrow, their scope, the patentee’s amendment did not disclaim the plain and ordinary meaning of the claims.¹⁴ Thus, the term “selected” shall have its plain and ordinary meaning of “chosen” or “picked.”

C. “A pH of about 1.9 to about 2.4”¹⁵

Kraft Ordinary and customary meaning as understood by one of ordinary skill in the art
TC Heartland “a pH of 1.9 to 2.4 when rounded to two significant figures”
Court “a pH of approximately 1.9 to 2.4, and less than 2.5”

While the parties agree that “about” means “approximately,” they disagree as to whether this construction imparts numerical limitations on the pH values listed in the claim. Heartland contends that specific limitations are necessary to ensure that Kraft cannot recapture claim scope disclaimed during prosecution. Kraft counters that the patentee did not disclaim patent scope

¹⁴There are other problems with Heartland’s proposed construction, including that it would import temporal and subjective intent limitations into the claim, both of which are unwarranted and would be unworkable. (*See, e.g.*, Tr. at 61-63; D.I. 160 at 2-3; D.I. 162 at 1-2) These problems remain even with Heartland’s proposed alternative construction, which is “chosen to provide, and not merely effective to provide.” (D.I. 160 at 2)

¹⁵This term appears in claims 1 and 18 of the ’299 patent and claim 1 of the ’557 patent.

during prosecution and further that Heartland's proposed construction is improperly specific. The Court agrees with Heartland that the patentee disclaimed claim scope during prosecution, but also with Kraft that Heartland's proposed construction imparts improperly rigid numerical limitations on the claims.

Heartland's prosecution history disclaimer argument is based on a narrowing amendment. In its initial application, the patentee claimed concentrates having a pH in the range of "about 1.4 to about 3.0." (D.I. 109-2 at 116-19) The Examiner rejected the claims as obvious, citing a prior art beverage concentrate having a pH of 2.5 and appearing to meet each of the other claim limitations. (*Id.* at 128-29) In response, the patentee narrowed the claimed pH range to "about 1.9 to about 2.4." (*Id.* at 137)

"Under the doctrine of prosecution disclaimer, a patentee may limit the meaning of a claim term by making a clear and unmistakable disavowal of claim scope during prosecution." *Purdue Pharma L.P. v. Endo Pharm., Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006). A disavowal is unmistakable when a patentee "characterizes an aspect of his invention in a specific manner to overcome prior art." *Id.* In determining whether this occurred, it is proper to consider the entire intrinsic record, including the patentee's comments during prosecution. *See Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1325 (Fed. Cir. 2002)

Here, it is clear from the intrinsic record that the patentee narrowed the claims to overcome the prior art cited by the Examiner in rejecting the pre-amendment claims as obvious. After receiving the Examiner's initial rejection, the patentee met with the Examiner to discuss the application. The Examiner explained that the patentee could likely overcome the prior art by narrowing the claimed pH range. (D.I. 109-2 at 145) The Examiner also told the patentee that it

would be advisable to bolster the case for non-obviousness by submitting declarations discussing “the challenges in developing the claimed concentrates and skepticism of others during development.” (*Id.*) Citing the Examiner’s advice, the patentee responded to the initial rejection by narrowing the claimed pH range and submitting two expert declarations. (*Id.*) Each of the expert declarations opines why the patentee’s narrowed pH range was not obvious at the time of the invention. (*Id.* at 148-57) Taken together, this evidence demonstrates that the amendments were designed to overcome the Examiner’s obviousness rejection. Thus, the patentee’s amendment disclaimed concentrates with a pH of 2.5 or more. *See Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (“The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.”).

Having found that the patentee disclaimed some claim scope, the Court next turns to the construction of the term “about.” In general, “the word ‘about’ does not have a universal meaning in patent claims,” but instead “depends upon the technological facts of the particular case.” *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326 (Fed. Cir. 2007) (internal quotation marks omitted). “Although it is rarely feasible to attach a precise limit to ‘about,’ the usage can usually be understood in light of the technology embodied in the invention.” *Modine Mfg. Co. v. U.S. Int’l Trade Comm’n*, 75 F.3d 1545, 1554 (Fed. Cir. 1996), *reinstated by* 535 U.S. 722 (*and abrogated by Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000)). To determine any numerical limitations resulting from an “about” term, a court must “consider how the term was used in the patent specification, the prosecution history, and the other claims.” *Id.* Where this intrinsic evidence does not provide a

sufficient basis for determining the appropriate construction, a court may also consider relevant extrinsic evidence of “technologic and stylistic context.” *Pall Corp. v. Micron Separations*, 66 F.3d 1211, 1217 (Fed. Cir. 1995). After construing the claim with whatever “specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact.” *PPG Indus. v. Guardian Indus, Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998).

None of this requires the Court to adopt Heartland’s position that, in order to prevent Kraft from recapturing the disclaimed pH value of 2.5, the Court must construe “about” only to include pH values of up to precisely 2.45 – halfway between the upper end of the claimed range (“to about 2.4”) and the disclaimed value of 2.5. Defendants have not pointed to intrinsic evidence, nor to “technological facts” or “technological and stylistic context,” to support this specific numerical limit. *See Pall Corp.*, 66 F.3d at 1217; *UCB, Inc. v. KV Pharm. Co.*, 2009 WL 2524519, at *5-6 (D. Del. 2009). The Court will not, then, as a matter of law, construe the claim limitation as being bound precisely at a pH of 2.45. *See Merck & Co., Inc. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1369-70 (Fed. Cir. 2005) (holding that “about” should be given its ordinary and accepted meaning of “approximately” unless patentee clearly redefines “about” in specification); *see also PPG Indus.*, 156 F.3d at 1355 (“Claims are often drafted using terminology that is not as precise or specific as it might be. . . . That does not mean, however, that a court, under the rubric of claim construction, may give a claim whatever additional precision or specificity is necessary to facilitate a comparison between the claim and the accused product.”); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 842 F.2d 1275, 1280 (Fed. Cir. 1988)

(abrogated on other grounds) (“Whether an imprecise claim limitation . . . is literally met, is a question of fact for the trial court.”).

Rather, the Court will ensure that the disclaimed value of 2.5 does not provide a basis for a finding of literal infringement by construing the claim limitation as “a pH of approximately 1.9 to 2.4, and less than 2.5.”

D. “a pH of less than about 2.4”¹⁶

Kraft Ordinary and customary meaning as understood by one of ordinary skill in the art
TC Heartland “a pH of 2.4 when rounded to two significant figures”
Court “a pH of up to approximately 2.4, and less than 2.5”

For the reasons set forth above, the Court will construe this term as “a pH of up to approximately 2.4, and less than 2.5.”

E. “about 65 percent water by weight”¹⁷

Kraft Ordinary and customary meaning as understood by one of ordinary skill in the art
TC Heartland “65 percent water by weight when rounded to two significant figures”
Court “approximately 65 percent water by weight”

Again the parties dispute whether the word “about” imparts strict numerical limitations in

¹⁶This term appears in claims 15 and 23 of the '557 patent.

¹⁷This term appears in claims 1 and 18 of the '299 patent and claims 1, 15, and 23 of the '557 patent.

the context of these claims. Again the source of the debate is a narrowing amendment. In the same office action described above in connection with the pH terms, the patentee amended the water and acid contents of the claimed concentrates. The patentee amended the range of acid contents from “about 5.0 to about 30.0 percent acid” to “about 15.0 to about 30.0 percent acid.” (D.I. 109-2 at 137) At the same time, the patentee amended the range of possible water contents from “about 30 to about 80 percent water” to “about 30 to about 65 percent water.” (*Id.*)

Even assuming these changes to the acid and water ranges constitute disclaimers, as Heartland insists, this is still not a persuasive basis to adopt Heartland’s precise numerical construction. Just as discussed above with respect to the disputed pH terms, it is proper to assign “about” its plain and ordinary meaning of “approximately” here because there is no evidence to support rigid numerical limitations.

F. “up to about [10.0/3.0/10] percent buffer by weight”¹⁸

Kraft Ordinary and customary meaning as understood by one of ordinary skill in the art
TC Heartland “a quantity of buffer that is greater than zero and less than or equal to [10.0/3.0/10] percent when rounded to two significant figures”
Court “a quantity of buffer that is greater than zero and less than or equal to approximately [10.0/3.0/10] percent buffer by weight”

The parties appear to have no genuine dispute about the meaning of this term. They agree that this limitation requires a non-zero quantity of buffer. (D.I. 129 at 17; D.I. 131 at 17) The Court’s construction clarifies this agreement and also avoids imposing rigid numerical

¹⁸This term appears in claims 1 and 18 of the ’299 patent and claims 1, 5, and 23 of the ’557 patent.

limitations to the term “about” (for the reasons already given above).

G. “A container containing a liquid concentrate and configured for squeezing to dispense a jet of the liquid concentrate”¹⁹

Kraft Limiting
TC Heartland The preamble is not a limitation
Court Limiting

The parties disagree about whether the preamble (“[a] container containing a liquid concentrate and configured for squeezing to dispense a jet of the liquid concentrate”) of the patent’s sole independent claim is limiting. “In general, a preamble limits the invention if it [either] recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim.” *Catalina Mktg. Int’l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (internal quotation marks omitted). A preamble meets these requirements when the prosecution history reveals that its limitations were “patentably significant.” *Marrin v. Griffin*, 599 F.3d 1290, 1294 (Fed. Cir. 2010) For example, “clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates the use of the preamble to define, in part, the claimed invention.” *Catalina Mktg.*, 289 F.3d at 808. Here, the prosecution history demonstrates that the patentee relied upon the features recited in the preamble in order to overcome an obviousness rejection. (D.I. 109-5 at 90-91) Thus, the Court finds that the preamble of the claim recites essential structure and construes the preamble of the claim as limiting.

¹⁹This term appears in all claims of the ’472 patent.

H. The Packaging Limitations of the '472 and '557 Patents

Heartland contends that the packaging claims of the '472 and '557 patents should be construed as encompassing only “approximate copies” of the embodiments disclosed in the specification. In support of its argument, Heartland cites the Supreme Court decision in *Eibel Process Co. v. Minn. & Ont. Paper Co.*, 261 U.S. 45, 63 (1923), and in particular the following except:

In administering the patent law, the court first looks into the art, to find what the real merit of the alleged discovery or invention is, and whether it has advanced the art substantially. If it has done so, then the court is liberal in its construction of the patent, to secure to the inventor the reward he deserves. If what he has done works only a slight step forward, and that which he says is a discovery is on the border line between mere mechanical change and real invention, then his patent, if sustained, will be given a narrow scope, and infringement will be found only in approximate copies of the new device.

Heartland argues that the packaging inventions disclosed in the '472 and '557 patents were “at best minor improvements over prior tapered-top packaging art” and, therefore, *Eibel* commands that the claims of these patents “be given narrow scope and construed as encompassing only approximate copies of the container described in the specifications of the patents.” (D.I. 108 at 19-21) (internal quotation marks omitted)

Kraft counters that the *Eibel* analysis Heartland advocates is out of step with the “modern” approach to claim construction. (Tr. at 110) As Kraft points out, Heartland in its briefing did not cite even once to the Federal Circuit’s en banc decision in *Phillips*. (Tr. at 12; *see also id.* at 17)²⁰ Nor has Kraft identified any post-*Phillips* case in which a court followed

²⁰Heartland emphasizes that the Supreme Court has never overruled *Eibel*, so it remains binding on all lower courts, including the Federal Circuit. (See Tr. at 18, 107) As for whether

what might be called the “*Eibel* approach” to claim construction. (Tr. at 108)

There are many problems with Heartland’s position. First among them is that *Phillips* is binding precedent on this Court, which the Court must follow in construing disputed claim terms. Of course the Court must also follow precedent of the U.S. Supreme Court, but Heartland has failed to show that there is any inconsistency between *Phillips* and any decision of the Supreme Court, including *Eibel*.²¹ The fact that Heartland can cite no case applying *Eibel* to resolve a claim construction dispute in the manner proposed by Heartland is telling.

Second, even were this Court to choose to be the first to apply *Eibel* in the manner Heartland requests, it is entirely unclear how the Court would do so. Heartland does not point to specific claim language and propose a construction for the Court to evaluate. Instead, Heartland broadly requests “an instruction to the jury that the packaging limitations of the ’472 and ’557 patents should encompass only approximate copies of the embodiments disclosed.” (Tr. 104-05) Even if the Court agreed with Heartland, what precisely would the Court tell the jury “approximate copies” means?

Nor does Heartland tell the Court how to assess whether the patents-in-suit constitute a substantial advancement of the art or merely a slight step forward. Must the Court undertake a thorough examination of the scope and content of the prior art? Should the Court consider

Phillips is inconsistent with the *Eibel* approach to claim construction advocated by Heartland, Heartland has not been entirely clear. For example, it stated at the hearing that “our approaches are not necessarily inconsistent with *Phillips* except when they are.” (Tr. at 18; *see also* Tr. at 101-08)

²¹By contrast, there is a clear inconsistency between Heartland’s contention that the Court should now limit the scope of the patent claims to “approximate copies” and *Phillips*’ directive that “although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.” 415 F.3d at 1323.

extrinsic evidence in undertaking such an evaluation? If so, how would such regular reliance on extrinsic evidence be consistent with the Supreme Court's recent discussion of the use of extrinsic evidence in claim construction, *see Teva*, 135 S. Ct. at 841 ("In *some cases*, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence . . .") (emphasis added), and with Federal Circuit cases directing courts to consider extrinsic evidence "*if needed* to assist in determining the meaning or scope of technical terms in the claims," *Pall*, 66 F.3d at 1216 (emphasis added)? Notably, *Eibel* involved an appeal from a decision following a trial. *See* 261 U.S. at 63; *see also* D.I. 160 at 3. Here – as in essentially all cases that have only just reached the claim construction stage – the Court lacks a similar record from which to resolve the parties' disputes as to the breadth and importance of the patentees' inventions.

Third, there appears to be a substantial difference between the form of the claims at issue in *Eibel* and those at issue here. Each of the claims in *Eibel* is directed to "[a] Fourdrinier machine [having certain characteristics], *substantially as described*." 261 U.S. at 70 (emphasis added). The use of words like "substantially as described" to incorporate a patent's specification into its claims was evidently a common practice in the 19th and early 20th centuries. *See Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 957-58 (Fed. Cir. 1987) (describing historical patent claim forms). But this practice appears to have fallen out of favor. In recent decades the PTO has rejected such "omnibus claims" for failing to meet the requirements of Section 112 of the Patent Act. *See* Manual of Patent Examining and Procedure (MPEP) § 2173.05(r). Indeed, the PTO today rejects omnibus claims *because of* the "great deal of difficulty and confusion" associated with *Eibel*-like analysis. *See Ex Parte Fressola*, 27

U.S.P.Q.2d 1608, at *1-5 (P.T.O. Mar. 11, 1993); MPEP § 2173.05(r).

For at least these reasons, the Court rejects Heartland's request to limit the claims of the '472 and '557 patents to just approximate copies of the expressly disclosed embodiments.

III. CONCLUSION

The Court construes the disputed terms as explained above. An appropriate Order follows.