

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF NORTH CAROLINA  
CHARLOTTE DIVISION  
DOCKET NO. 3:13-cv-00569-MOC-DSC

**VIVA HEALTHCARE PACKAGING (USA)** )  
**INC., VIVA HEALTHCARE PACKAGING (HK)** )  
**LTD., and VIVA HEALTHCARE PACKAGING,** )  
**LTD.,** )

Plaintiffs, )

Vs. )

**CTL PACKAGING USA, INC., and** )  
**TUBOPLAST HISPANIA,** )

Defendants. )

CLAIM CONSTRUCTION  
ORDER

**THIS MATTER** is before the court on the parties’ respective motions and briefs (#s 88, 91, 93, 95) for the construction of certain claim language in U.S. Patent Nos. 8,518,318 (“the ’318 Patent”) and 6,547,094 (“the ’094 Patent”). Plaintiffs Viva Healthcare Packaging, Ltd., Viva Healthcare Packaging (HK) Ltd., and Viva Healthcare Packaging (USA) Inc., (collectively, “Viva”) have alleged that Defendants CTL Packaging USA, Inc., and Tuboplast Hispania (collectively, “CTL”) infringed these two patents. The court held a claim construction hearing on November 12, 2014. At the court’s request, the parties provided supplemental briefs (#s 104, 107) on the issue of indefiniteness of the patents. Having considered the briefing and arguments of counsel and reviewed the claims, specifications, and other relevant evidence, the court now construes the disputed claim terms at issue.

## **I. BACKGROUND**

### **A. The Patented Technology**

Both the '318 Patent and the '094 Patent (collectively, the “patents-in-suit”) pertain to methods of manufacturing flexible plastic tubes and other thin-walled tubular containers used in the cosmetics industry. The manufacture of these tubes is done through a process called “injection molding,” which involves heating up plastic and injecting it into a mold to cool and harden. Injection molding is a common method used in plastics manufacturing for three-dimensional objects. Injection-molded tubes are typically more durable and flexible in shape, nozzle, cap, and label than predecessor technologies.

Viva contends that injection molding was not a viable option for the manufacture of thin-walled tubes before the technology covered by the patents-in-suit was developed because it was difficult to find polymers<sup>1</sup> with the appropriate properties. Before such tubes could be made through injection molding, the manufacturing process required making the individual components of the plastic tube (head and shoulders, body, sealed bottom) separately and then welding them together. The patents-in-suit purportedly identify physical blends of polymers that can be used in injection molding to make flexible, thin-walled plastic objects with the requisite properties to protect the cosmetics that they encase, such as crack-resistance and an ability to withstand handling. The '094 Patent teaches that blends of polymers with certain environmental stress cracking resistance (“ESCR”) values, particularly those with at least one polymer with certain melt flow properties, can be effectively and feasibly used in injection molding-based manufacturing processes to make these flexible, thin-walled plastic objects. The '318 Patent claims to improve on these findings by adding that the polymer

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<sup>1</sup> Plastic material is largely composed of polymers, which are chains of linked molecules.

blends benefit from containing “compatible” polymers, with at least one of such polymers having a high melt flow index (“MFI”).<sup>2</sup> According to Viva, the patented methodology made it easier and cheaper to develop flexible, thin-walled plastic tubes through injection molding, which has allowed for more variety in tube shape, texture, and embossment.

### ***1. The '094 Patent***

On April 15, 2003, the United States Patent and Trademark Office (the “PTO”) issued the '094 Patent, titled “Injection Moulding,” which names Mr. Ian Orde Michael Jacobs as inventor. The patent: 1) describes a procedure for injection molding flexible, thin-walled articles using a blend of polymers with a particular ESCR value; 2) sets forth an ESCR test adapted to identifying polymer blends suitable for use in making these flexible, thin-walled plastic items by injection molding; 3) provides guidance and examples on choosing polymers suitable for such polymer blends; and 4) identifies other chemicals that may be added to the polymer blend to adapt the final composition to the manufacturer’s needs.

### ***2. The '318 Patent***

On August 27, 2003, the PTO issued the '318 Patent, which also names Mr. Jacobs as inventor. This patent “teaches” combinations of polymers with certain melt flow properties that lead to improvements in the performance of thin-walled plastic entities, such as improved flow properties, ESCR, and tear strength. This patent: 1) claims a manufacturing process for flexible, thin-walled articles (such as a tube) that involves injection molding a blend of (a) at least one polymer with (b) at least one high melt flow compatible polymer having a MFI of greater than 100; and 2) adds a limitation that the second, high MFI polymer be “compatible” with the first.

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<sup>2</sup> A “melt flow index” is a measure of how easily something flows.

## **B. The Alleged Infringing Product**

Viva alleges that CTL has infringed these two patents by manufacturing, using, selling, and importing to the U.S. injection-molded tubes that are made using a process that infringes on several claims in the patents-in-suit. CTL admits that it has made injection-molded tubes, but deny patent infringement. CTL states that since 2003, Tuboplast (a Spanish company) has been conducting research and development relating to the “EasySupply Tube” (“EST”) with the goal of creating a process for manufacturing commercially viable injection-molded tubes with enhanced stress crack resistance, among other improved features. In July 2011, Tuboplast’s parent company, CTL, undertook efforts to launch this product in the U.S., beginning its operations at its new headquarters in North Carolina.

CTL argues that the patents-in-suit are overly broad and intentionally ambiguous, and thus invalid. They argue that the patents-in-suit simply set out a desired result for an injection-molded tube, not a patentable process, and that the claims are vague and do not put the public on notice as to the scope of the claims. More specifically, CTL alleges: 1) the inventor did nothing more than identify tens of thousands of possible polymers and polymer blends that could be used to make injection-molded thin-walled tubes, and “teach” that the selected polymers should resist cracking; 2) the process claimed by the patents-in-suit fails to state the identity, quantity, or appropriate combination of polymers that should be used; and 3) the process fails to describe with the requisite specificity the test which the polymers must satisfy. CTL argues that even if the court adopted Viva’s proposed constructions, the public would still not be on notice as to what technology is covered by the patents’ claims.

## II. LEGAL STANDARDS

### A. Claim Construction

Patent infringement is the unauthorized production, use, sale, offer of sale, or importation of any patented invention during the term of the patent. 35 U.S.C. § 271(a). An infringement analysis entails two steps. In the first step, the court determines the meaning and scope of the patent claims asserted to be infringed. In the second step, the trier of fact compares the properly construed claims to the device accused of infringing. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) aff'd, 517 U.S. 370 (1996). The purpose of claim construction is to determine the meaning and scope of the patent claims alleged to be infringed. O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd., 521 F.3d 1351, 1360 (Fed. Cir. 2008). “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.” Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1115 (Fed. Cir. 2004).

Claim construction is a matter of law. Markman, 517 U.S. at 372. “It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.” Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (citation omitted). The court should generally give the disputed claim terms 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.” Phillips v. AWH Corp., 415 F.3d 1303, 1312, 1313 (Fed. Cir. 2005). A person of ordinary skill in

the art is deemed to read the claim terms not only in the context of the particular claims in which the disputed terms appear, but also in the context of the entire patent. Id. at 1313.

The claims of the patent “themselves provide substantial guidance as to the meaning of particular claim terms.” Id. at 1314. Specifically, the context in which a term is used within the claim, as well as the usage of that term in other claims of the patent, can be valuable in ascertaining the meaning of a particular claim term. Id. Of course, the claims of the patent cannot be viewed in a vacuum. The court also “must look at the ordinary meaning in the context of the written description and the prosecution history.” Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (quoting DeMarini Sports, Inc. v. Worth, 239 F.3d 1314, 1324 (Fed. Cir. 2001)).

The specification of the patent “is always highly relevant to the claim construction analysis.” Vitronics, 90 F.3d at 1582. As such, the Federal Circuit has stated that it is “entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims.” Phillips, 415 F.3d at 1317. In some cases, the inventor may provide within the specification a special definition of a claim term which differs from the term's usual meaning. “In such cases, the inventor's lexicography governs.” Id. at 1316. The inventor also may disclaim or disavow claim scope within the specification. Where “the inventor has dictated the correct claim scope . . . the inventor's invention, as expressed in the specification, is regarded as dispositive.” Id.

In addition to consulting the specification, the court also may examine the patent's prosecution history in construing the terms of the claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995), aff'd, 517 U.S. 370 (1996). “Like the specification, the prosecution history provides evidence of how the [Patent and Trademark Office]

and the inventor understood the patent.” Phillips, 415 F.3d at 1317. The prosecution history also may be helpful in determining whether the inventor disclaimed any particular interpretation during the prosecution of the patent. See Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005). While it can be helpful in some respects, the prosecution history “often lacks the clarity of the specification and thus is less useful for claim construction purposes.” Phillips, 415 F.3d at 1317.

In addition to examining the intrinsic evidence, the court may also consider certain extrinsic evidence, “including expert and inventory testimony, dictionaries, and learned treatises.” Markman, 52 F.3d at 980. While extrinsic evidence can shed light on claim meaning, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language” and “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” Phillips, 415 F.3d at 1317, 1319.

The Federal Circuit has noted that expert testimony “can be useful to a court for a variety of purposes, such as to provide background on the technology at issue, to explain how an invention works, 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.” Phillips, 415 F.3d at 1318. The Federal Circuit has cautioned, however, that “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.” Id. The court must disregard any expert testimony “that is clearly at odds with . . . the written record of the patent.” Key Pharms. v. Hercon Labs. Corp., 161 F.3d 709, 716 (Fed. Cir. 1998).

## **B. Indefiniteness**

The Patent Act of 1952 requires that a patent specification “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112(b). A lack of definiteness renders the patent or any claim in suit invalid. Id. § 282 (b)(3).

The Supreme Court recently set forth a new standard for indefiniteness under § 112 in Nautilus, Inc. v. Boisig Instruments, Inc., —U.S.—, 134 S. Ct. 2120 (2014), providing that a patent is invalid for indefiniteness if its language, read in light of the specification and prosecution history, “fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” Id. at 2124. The Court set forth this standard in order to address the “delicate balance” of the definiteness analysis. Id. at 2128 (quoting Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 535 U.S. 722, 731 (2002)). The definiteness standard must acknowledge “the inherent limitations of language” and “must allow for a modicum of uncertainty” to provide incentives for innovation, but must also require “clear notice of what is claimed, thereby appris[ing] the public of what is still open to them.” Id. at 2128-29 (internal citations omitted). The Court noted that “absent a meaningful definiteness check...patent applicants face powerful incentives to inject ambiguity into their claims.” Id. at 2129.

Under this standard, a patent does not satisfy the definiteness requirement of § 112 merely because “a court can ascribe some meaning to a patent's claims.” Interval Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1369 (Fed. Cir. 2014) (quoting Nautilus, 134 S.Ct. at 2130). Rather, “the claims, when read in light of the specification and the prosecution history, must provide objective boundaries for those of skill in the art.” Id. See also Nautilus, 134 S.Ct. at 2130 & n. 8 (indicating



that there is an indefiniteness problem if the claim language “might mean several different things and ‘no informed and confident choice is available among the contending definitions’”) (quoting Every Penny Counts, Inc. v. Wells Fargo Bank, N.A., 4 F. Supp. 3d 1286, 1291, 2014 WL 869092, at \*4 (M.D.Fla. Mar. 5, 2014)).

Every issued patent enjoys a statutory presumption of validity. 35 U.S.C. § 282. The burden of establishing invalidity of a patent or any of its claims rests on the party asserting invalidity. Id. Governing law “requires patent challengers to prove invalidity by clear and convincing evidence.” Tate Access Floors, Inc. v. Interface Architectural Res., Inc., 279 F.3d 1357, 1367 (Fed. Cir. 2002). See also Nautilus, 134 S. Ct. at 2130 n.10 (citing Microsoft Corp. v. i4i Ltd. Partnership, 131 S. Ct. 2238, 2242 (2011)); Teva Pharms. USA, Inc. v. Sandoz, Inc., 723 F.3d 1363, 1368 (Fed. Cir. 2013)).

### **C. Enablement**

Under 35 U.S.C. § 112, the patent specification must “contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains...to make and use the same.” Id. To be enabling, “the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” Genentech, Inc. v. Novo Nordisk, A/S, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (internal quotation marks and citations omitted). Undue experimentation is required “when there is no disclosure of any specific starting material or of any of the conditions under which a process can be carried out.” Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1366 (Fed. Cir. 1997). “Because patents are presumed valid, lack of enablement must be proven by clear and convincing evidence.” ALZA Corp. v. Andrx Pharm., LLC, 603 F.3d 935, 940 (Fed. Cir. 2010).

### III. ASSESSING INVALIDITY AT THE CLAM CONSTRUCTION PHASE

As the parties dispute whether it is appropriate for the court to engage in an analysis of invalidity at this stage, and as CTL contends that both of the patents-in-suit fail due to indefiniteness and lack of enablement, the court will address the matter before engaging in any analysis of the disputed claim terms.

Viva argues that the court must postpone any inquiry on indefiniteness, enablement, and other issues relating to invalidity until all fact and expert discovery proceedings have been completed. Viva argues that because disputes of fact remain in this case and because it has not yet had the opportunity to submit expert reports, a decision on indefiniteness is not appropriate. The court notes that although Viva was invited to present evidence and expert testimony at the Markman hearing, see Markman Hearing Scheduling Order (#101), Viva chose not to do so despite having identified experts in the Joint Claim Construction and Prehearing Statement. See (#84) at 4. While the court does not fault Viva for not presenting experts, relevant case law indicates that the court can, in fact, address the matter of indefiniteness at the claim construction phase and find a patent invalid if the party asserting invalidity meets its clear and convincing burden.

The Federal Circuit has provided the following guidance on validity analysis:

While we have acknowledged that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction. Instead, we have limited the maxim to cases in which the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.

Phillips v. AWH Corp., 415 F.3d 1303, 1327 (Fed. Cir. 2005) (internal citations and quotations omitted). The court also notes, however, that the Federal Circuit has stated numerous times that a district court's inquiry on indefiniteness is appropriate at the claim construction stage. See, e.g.,

Praxair, Inc. v. ATMI, Inc., 543 F.3d 1306, 1319 (Fed. Cir. 2008) (“Indefiniteness is a matter of claim construction, and the same principles that generally govern claim construction are applicable to determining whether allegedly indefinite claim language is subject to construction.”); Cordis Corp. v. Boston Scientific Corp., 561 F.3d 1319, 1331 (Fed. Cir. 2009) (“Indefiniteness under 35 U.S.C. § 112 ¶ 2 is an issue of claim construction and a question of law.”); Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1379 (Fed. Cir. 1999) (“analysis under § 112, ¶ 2 is inextricably intertwined with claim construction.”). The court notes that several other post-Nautilus district courts have decided the issue of indefiniteness at claim construction. See, e.g., California Inst. of Tech. v. Hughes Commc'ns Inc., 2014 WL 3866129 (C.D. Cal. Aug. 6, 2014); Prolifiq Software Inc. v. Veeva Sys. Inc., 2014 WL 3870016 (N.D. Cal. Aug. 6, 2014); Thomas Swan & Co. v. Finisar Corp., 2014 WL 2885296 (E.D. Tex. June 25, 2014); Largan Precision Co, Ltd v. Genius Elec. Optical Co., 2014 WL 5358426 (N.D. Cal. Oct. 20, 2014) (all post-Nautilus district court decisions examining and determining indefiniteness at the claim construction phase). Moreover, the Federal Circuit recently affirmed a district court’s finding at claim construction (post-Nautilus) that a patent’s claims were indefinite. Interval Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1368-69 (Fed. Cir. 2014).

With those parameters in mind, the court has considered all of CTL’s invalidity arguments and thoroughly assessed the evidence of record relevant to the invalidity contentions. After careful contemplation, the court declines to rule on the issues of indefiniteness and enablement at this time. The court finds that the record, as it currently stands, does not show clear and convincing evidence of invalidity. Further developments in the record as this case proceeds will assist the court in reaching a conclusion on those issues. Moreover, the court is mindful of the fact that the record on

the issue of invalidity should be as complete as possible so that if and when this case reaches the Federal Circuit, all of the appropriate facts and evidence will be before the appellate court for review.

However, in light of the fact that these patents do indeed claim broadly, and that CTL's expert witnesses testified that they were unable to ascertain the scope of the patents with reasonable certainty, the court is troubled by the question of how members of the public are able to determine whether they are infringing upon these patents. While the court requires more evidence before making a final decision on invalidity, it is cognizant of the "powerful incentives" for patent applicants to "inject ambiguity into their claims," Nautilus, Inc. v. Boisig Instruments, Inc., — U.S.—, 134 S. Ct. 2120, 2129 (2014), and will continue to consider what, if anything, these patents have left open to the public. Accordingly, the court will proceed with an analysis of the parties' claim construction arguments only, and will revisit the issue of indefiniteness once the record has been more fully developed.

#### **IV. DISPUTED CLAIM TERMS**

##### **A. The '094 Patent**

Viva has asserted Claims 1-9, 11-19, and 21 of the '094 Patent. Claims 1 and 11 are independent, and the rest dependent. See 35 U.S.C.A. § 112 ("a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed"). Claims 8 and 19 are product claims, and the rest are method claims directed to a process for manufacturing flexible thin-walled articles, such as tubes. The independent claims are as follows, with claim terms at issue in bold italics:

What is claimed is:

1. A process for the manufacture of *flexible*, thin-walled articles comprising the steps of:
  - (a) using *a polymer blend* having *an ESCR as herein defined* greater than 10 hours;
  - (b) melting said polymer blend;
  - (c) ramming molten said polymer blend into a mold having a cavity that produces a thin-walled article having a thin section of 1 mm or less in thickness, the thin section being substantially continuous for greater than 50 mm in a direction of flow of the molten polymer blend in the mold; and
  - (d) removing from the mold the thin-walled article formed from *the polymer blend*.

...

11. A process for injection molding a *flexible*, thin-walled article comprising the steps of:
  - (a) melting *a polymer blend having an ESCR as herein defined* of greater than 10 hours, said polymer blend comprising at least one polymer and at least one of a compatible agent and a nucleating agent;
  - (b) ramming molten said polymer blend into a mould having a cavity that produces a thin-walled article having a thin section not exceeding 1 mm thickness the thin section being substantially continuous for greater than 50 mm in a direction of flow of the molten polymer blend in the mould; and
  - (c) removing from the mould the thin-walled article formed from *the polymer blend*.

('094 Patent, 23:19-32, 54-67). Claims 2-4 and 6-7 depend from Claim 1; Claims 12-15 depend from Claim 11. All contain the disputed claim term "the polymer blend." The remaining asserted claims do not contain disputed claim terms.

## **B. The '318 Patent**

Viva has asserted Claims 1-12 of the '318 Patent, all of which are method claims directed to a process for the manufacture of thin-walled articles. The sole independent asserted claim is set forth below, with the claim terms at issue in bold italics.

The claims defining the invention are as follows:

1. A process for the manufacture of *flexible* thin-walled articles including: injection molding a blend of (a) *at least one polymer* and (b) *at least one high melt flow compatible polymer* having an MFI of greater than 100.

('318 Patent, 31:35-32:2). Claims 2-3 contain the disputed term “high melt flow compatible polymer.” Claim 9 contains the disputed term “at least one polymer.” Claim 12 contains the disputed term “flexible.”

## V. CLAIM CONSTRUCTION OF DISPUTED TERMS IN THE '094 PATENT

### A. “FLEXIBLE”

#### 1. Construction of a Preamble Term

Viva asks the court to construe “flexible” as “capable of being easily bent without breaking or cracking.” CTL argues that construction is not appropriate or necessary because the term appears only in the preamble. Alternatively, CTL asks the court to construe the term as “capable of bending or being bent,” arguing that Viva’s proposed construction attempts to import limitations that are contrary to the plain and ordinary meaning of the term.

The court first addresses the issue of whether this term, which appears only in the preamble, necessitates construction. Generally, the preamble does not limit the claims and accordingly, does not require construction. Am. Med. Sys., Inc. v. Biolitec, Inc., 618 F.3d 1354, 1358 (Fed. Cir. 2010). However, where “the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is ‘necessary to give life, meaning, and vitality’ to the claim, then the claim preamble should be construed as if in the balance of the claim.” Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999) (quoting Kropa v. Robie, 187 F.2d 150, 152 (C.C.P.A. 1951)). “A claim’s preamble may limit the claim when the claim drafter uses the

preamble to define the subject matter of the claim.” August Tech. Corp. v. Camtek, Ltd., 655 F.3d 1278, 1284 (Fed. Cir. 2011). However, “when a patentee ‘defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation.’” Novatek, Inc. v. Sollami Co., 559 F. App’x 1011, 1015 (Fed. Cir. 2014) (quoting Rowe v. Dror, 112 F.3d 473, 478 (Fed.Cir.1997)). “Whether a preamble is treated as a limitation is determined by the facts of each case and upon an understanding of what the inventors actually invented and intended to encompass by the claims.” Id. (citing Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002)).

While no precise test exists to determine when a preamble limits claim scope, the Federal Circuit has held that “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 use of the preamble to define, in part, the claimed invention.” Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002). On the other hand, a preamble term is not limiting “when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention” or if the preamble is “reasonably susceptible to being construed to be merely duplicative of the limitations in the body of the claim (and was not clearly added to overcome a [prior art] rejection).” Am. Med. Sys., Inc. v. Biolitec, Inc., 618 F.3d 1354, 1358-59 (Fed. Cir. 2010) (internal quotations and citations omitted).

CTL argues that “flexible” does not breathe life into the claim and should not be construed because it merely describes an intended characteristic of the resulting injection-molded tubes, not another required step in the process. It also argues that any limitation contained in “flexible” is

duplicative of the ESCR characteristics of such tubes, noting that any product created by the process set forth in the asserted claims with an ESCR at the specified levels would, necessarily, be flexible. Despite CTL's contentions that "flexible" is duplicative of the limitations of ESCR values described in the claim body, the court understands that the two characteristics are indeed related, but not necessarily duplicative.

The court finds that construction is appropriate for several reasons. First, the importance of "flexibility" in the prosecution history distinguishes the claimed invention from prior art. See Saffran v. Johnson & Johnson, 712 F.3d 549, 559 (Fed. Cir. 2013) cert. denied, 134 S. Ct. 1023, 188 L. Ed. 2d 138 (2014) (construing preamble term upon finding that it limited the claim, in part because the patentee used the term during prosecution to distinguish prior art). In the prosecution history, the patentee and patent examiner found that the claimed subject matter—a flexible plastic tube—was novel and non-obvious over the prior art, which covered rigid plastic containers.<sup>3</sup> The court also finds that construction is appropriate because "flexible" limits the claim in that it "define[s] the subject matter of the claim" (August Tech., 655 F.3d at 1284), as opposed to merely "stat[ing] a purpose or intended use for the invention." Novatek, 559 F. App'x at 1015. Here, the claim drafter used the preamble to define the subject matter of the claim—a flexible plastic tube. Thus, claim construction is appropriate.

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<sup>3</sup> See Amendment in response to the "Office Action" mailed 9/28/2001, dated 4/18/2002, authored by the attorney for the patent applicant, which details why the prior art is overcome due to the prior art's suitability only for rigid plastics, (# 88-7 at 61-63) ("In stark contrast, the present invention specifically relates to 'flexible' 'thin-walled' articles including containers."); ("But Yui's silence as to polymer ESCR, and his emphasis as to rigidity of moldings is in stark contrast to the presently claimed invention, which is directed to a 'flexible' 'thin-walled' article that involves a polymer blend whose ESCR exceeds ten hours."); ("Treybig's rigidity is in stark contrast to the 'flexible' and 'thin-walled' nature of articles manufactured according to the present invention.").



## 2. *Claim Construction*

Both parties argue that their construction of “flexible” comports with the plain and ordinary meaning of the term, but Viva argues that its proposed definition specifically comports with the term’s meaning within the plastics field. CTL argues that Viva’s proposed language, which adds “easily” and “without breaking or cracking” puts unnecessary limitations on the term. In support of its contentions, CTL points to one instance in the specification which uses “flexible” to mean simply a “lack of rigidity” (’094 Patent, 17:58-65) (“By their nature, tubes have thin, soft and flexible walls. This lack of rigidity in the moulded tube...”). Additionally, CTL refers the court to a revised version of the same section of the prosecution history that Viva relied on for its arguments regarding distinguishing prior art. Tellingly, in discussing the ways in which the patented product differs from prior art, the patentee repeatedly refers to the rigidity of prior art products and the flexibility required of the patented products, yet none of the many references to “flexibility” refer to any sort of cracking resistance or incorporate any need for the materials to bend “easily.” See (#88-7) at 78-81.

Viva argues that the intrinsic record confirms its construction, citing several places in the specification that refer to articles that are able to bend and withstand cracking. See, e.g. ’094 Patent at Abstract, 1:30-55, 2:57-3:14. Viva correctly states that the claims and specification emphasize the importance of choosing materials for satisfactorily making the flexible articles through the ESCR test, which teaches that the tested materials fail if they crack. However, Viva neither cites examples of the patent using “flexible” as necessarily incorporating elements of cracking resistance, nor identifies any instance in the intrinsic record suggesting that a flexible product must bend “easily.” Instead, Viva relies on several extrinsic sources in support of its proposed construction of “flexible”:

- 1) *Tech. Dictionary of Plastics Materials* at 68 (#88-18 at 58) (1998) (defining flexible as “the

ability of a material readily to undergo, and to withstand, repeated bending and flexing without breaking or suffering visible damage”); *Rosato’s Plastics Encyclopedia and Dictionary* at 303 (#88-18 at 51) (1993) (defining flexible as “easily hand-folded, flexed, twisted, and bent”); and 3) *Merriam Webster’s Collegiate Dictionary* (10th ed. 1998) at 445, 894 (#88-18 at 26, 29) (defining flexible as “capable of being flexed: pliant” and defining pliable as “supple enough to bend freely or repeatedly without breaking”).

Viva argues that its construction supports the plain and ordinary meaning of “flexible” within the relevant art—the plastics field. Indeed, the Federal Circuit has instructed:

In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. In such circumstances, general purpose dictionaries may be helpful. In many cases that give rise to litigation, however, determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art. Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean. Those sources include ... extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.

Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (internal citations and quotations omitted). The Federal Circuit has also provided that although “technical dictionaries ‘can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention’ ... [courts are] cautioned against relying on dictionary definitions at the expense of a fair reading of the claims, which must be understood in light of the specification.” Interval Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1377 (Fed. Cir. 2014) (quoting Phillips, 415 F.3d at 1318).

Here, the court finds that the plain and ordinary meaning of “flexible” cannot be read to incorporate the meaning that Viva fuses together from three separate sources. While Viva has pointed to an extrinsic dictionary definition that incorporates cracking resistance into flexibility, the court cannot ignore the fact that the specification does not support such a construction. Furthermore, there is nothing to indicate that the patentee is using the term “flexible” idiosyncratically or that anyone skilled in the art would understand flexible to incorporate the additional components that Viva suggests. While the court acknowledges that stress crack resistance is a critical element in the final product of the patented flexible plastic tube, and that the two characteristics are obviously related in the context of this patent, it cannot find any support in the intrinsic record for Viva’s claim that “flexibility” necessarily encompasses an ability to withstand cracking.<sup>4</sup> Similarly, the specification is devoid of any reference to bending “easily.” Here, the court finds that the plain meaning of “flexible,” read in light of the specification, does not incorporate the limitations that Viva suggests. As such, it will construe the term to mean “capable of bending or being bent,” which the court finds to be the term’s plain and ordinary meaning.

#### **B. “A/THE POLYMER BLEND”**

Viva urges the court to construe “polymer blend” as “a physical mixture comprising at least one polymer and optionally incorporating additional components, wherein the physical mixture comprises two or more grades of a single polymer or two or more polymers.” Viva argues that this definition is supported by the term’s plain and ordinary meaning and that the intrinsic record shows

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<sup>4</sup> The court also notes that in urging the court to construe the preamble term “flexible” and in rebutting CTL’s claim that “flexibility” and ESCR are duplicative, Viva goes to great lengths to emphasize that there is a difference between flexibility and ESCR. *See, e.g.*, Viva’s Markman Presentation at 33 (pointing to CTL’s own patent and emphasizing that “flexibility” and “resistance to stress cracking” are different). It would strain logic for this court to find on one hand, that flexibility and stress crack resistance are not duplicative, yet on the other, to find that flexibility necessarily requires a resistance to cracking.

that “a polymer blend” includes two or more polymers. CTL argues that the term is vague and indefinite because thousands of single polymers fall into the category of “polymer blend.” CTL further argues that the term is overbroad and lacks enablement. CTL proposes, in the alternative, that the court construe “polymer blend” to mean “compositions comprising at least one polymer and optionally incorporating additional components,” which is the definition set forth in the patent (’094 Patent, 3:44-47). CTL argues that the patent defines “polymer blend” to encompass not only actual “blends” (i.e., two or more polymers), but also single polymers.

The ’094 Patent expressly states, “[i]t will be understood that throughout the specification and claims which follow, the term ‘polymer blend’ refers to compositions comprising at least one polymer and optionally incorporating additional components such as are described herein.” ’094 Patent, 3:44-47. The crux of the parties’ argument on this claim construction issue is whether the polymer blend must be made of two or more polymers, or whether it can be made of only one. As Viva points out, the term “polymer blend” is used elsewhere in the patent, including within the claims themselves and all of the examples provided, to reference a “blend” that is comprised of multiple polymers or a mix of two grades of a single polymer. For example, Dependent Claims 2-4 refer to “the polymer blend” described in independent Claim 1, and require that “at least one polymer of the polymer blend” have a certain minimum MFI. Similarly, Dependent Claims 12-14 specify MFI values for “at least one polymer of the polymer blend.” Viva argues that the only logical interpretation of these numerous dependent claims is that the “polymer blend” recited in the two independent claims is necessarily made up of more than one polymer, i.e., two or more polymers, or a mix of two grades of a single polymer.

CTL argues that though the patent does include references to a blend that consists of two or more polymers, nothing in the patent expressly states that the polymer blend must include two or more components. As such, CTL proposes that its broader definition—which is the one expressly used in the patent and which allows for the blend to include only one polymer— should govern.

As noted above, “the claims themselves provide substantial guidance as to the meaning of particular claim terms” and “the context in which a term is used in the asserted claim can be highly instructive.” Phillips F.3d at 1314. However, a “fundamental rule of claim construction is that terms in a patent document are construed with the meaning with which they are presented in the patent document. Thus claims must be construed so as to be consistent with the specification, of which they are a part.” Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005) (quoting Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed. Cir. 2003)). “Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.” Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The inventor's lexicography governs when “the specification [ ] reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess.” Allergan, Inc. v. Barr Labs., Inc., 501 F. App'x 965, 969-70 (Fed. Cir. 2013) (quoting Phillips, 415 F.3d at 1316). The patentee must “clearly express an intent” to redefine the term. Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1381 (Fed. Cir. 2008). The Federal Circuit has described the standard for determining whether an inventor has provided such clear intent as “exacting.” Thorner v. Sony Computer Entertainment America, LLC, 669 F.3d 1362, 1366 (Fed. Cir. 2012). “Passing references that do not amount to a redefinition

or disclaimer” are not sufficient to overcome a term’s plain and ordinary meaning. Ancora Technologies, Inc. v. Apple, Inc., 744 F.3d 732 (Fed. Cir. 2014).

The issue here is whether the patent inventor “chose to be his own lexicographer” in ascribing an unordinary or uncustomary meaning to “polymer blend.” It is undisputed that “polymer blend” has a firmly established meaning in the field as a physical mixture of two or more polymers. See Polymer Tech. Dictionary at 328 (#88-18) (“In the simplest case, a physical mixture of two or more polymeric materials.”); Polymer Chemistry: An Introduction at 87 ((#88-18) (“By definition, any physical mixture of two or more different polymers or copolymers that are not linked by covalent bonds is a polymer blend”); McGraw Hill Dictionary of Scientific and Tech. Terms (2003) (#88-18) (“A homogeneous mixture of two or more different polymers.”); Injection Molding Handbook at 49 (#88-18) (“Polymer blends ... are made by mixing or blending two or more polymers.”)). See also Markman Hearing Transcript (“Markman Tr.”) at 136:3-4 (Dr. Osswald testifying that “[p]olymer blend’ is a term used in the industry as a blend of two or more polymers.”). Viva, citing Ancora, urges the court to consider the language expressly provided in the patent as a “passing reference” that is not sufficiently exacting to redefine the term in a manner that strays from its ordinary meaning. The court finds that the language at 3:42-47 is anything but a passing reference. The patentee clearly expressed an intent to define the term “polymer blend” by ascribing it a specific definition immediately after describing the invention: “[i]t will be understood that throughout the specification and claims which follow, the term ‘polymer blend’ refers to compositions comprising *at least one polymer...*” (’094 Patent, 3:43-44) (emphasis added). The directive to understand the term to mean “at least one” is clear. Moreover, it obviates a meaning of “polymer blend” that is possibly comprised of only one polymer. This is an uncustomary meaning.

Though Viva does indeed cite several examples as to how its proffered definition comports with the intrinsic record as a whole, it cannot escape the fact that the patent sets forth an exacting, yet broader, definition, which also comports with the intrinsic record as a whole. Moreover, CTL also cites several examples in the patent where “polymer blend” is used to mean “at least one polymer” or a single polymer. See ’094 Patent, 15:26-30; 22:65-23-2 (Example 14); Markman Tr. at 143 (Dr. Osswald testifying that in “Example 14 ... they are mixing a Dowlex Affinity Plastometer, which is one polymer, and they’re mixing it with ... a certain percentage of titanium oxide, which is not a polymer. It’s a nucleating agent.”). Viva’s narrower construction falls within the broader definition proffered by CTL, which is the one expressly provided by the patent. The court, finding that the patentee chose to act as his own lexicographer and redefine the meaning of “polymer blend,” will construe the claim as expressly defined by the patent. Hence, the court construes the term as “compositions comprising at least one polymer and optionally incorporating additional components.”

### **C. “ESCR AS HEREIN DEFINED”**

Viva argues that the court should construe this term as “the ESCR test as defined in Column 2, line 62 through Column 3, line 13 of [the ’094 Patent].” This portion of the patent describes the process for testing polymers that can successfully be used in the invention. It reads:

We have now found that it is possible to injection mould flexible thin-walled articles having relatively long thin-walled sections by selection of the polymers used in the injection moulding process having a time to failure of greater than 10 hours when tested according to the following procedure:

- (i) a plurality (preferably 6 or more) of strips of the polymer blend incorporating any post moulding treatment intended for the final article having cross-sectional dimensions of 0.65 mm in thickness and 10 mm in width are injection moulded under high

- shear, long flow length conditions, similar to those intended for use in the manufacture of the flexible thin-walled article;
- (ii) the strips are bent back upon themselves and stapled 3 mm from the bend;
  - (iii) the bent strips are immersed in a solution of a stress crack agent such as an ethoxylated nonylphenol, eg. a 10% solution of Teric N9 (nonylphenol ethoxylated with 9 moles of ethylene oxide-Orica Australia Pty Ltd) and held at a temperature of 50° C.;
  - (iv) the strips are observed for signs of cracking; and
  - (v) the time to failure is when 50% of the strips show signs of cracking.

*Any reference to “an ESCR” throughout the specification and claims which follow, unless specifically stated otherwise, refers to an ESCR determined using the above test procedure.*

'094 Patent, 2:56-3:18 (emphasis added). As with “polymer blend,” the court finds the patent’s explicit statement regarding how to define “ESCR” exacting and instructive.

CTL does not propose its own construction, instead arguing that the term is indefinite. CTL argues, however, that Viva’s proposed construction is improper because the patent offers at least two other ESCR tests and consequently, the one that Viva cites is just one of several possible ESCRs. The court disagrees. One “characterization” that CTL cites simply explains the variety of stress crack agents that can be used in the ESCR test, and in fact, refers to both the “ESCR test as hereinabove defined” and “ESCR test as described above.” See '094 Patent, 4:1-12. The other “characterization” is an example that includes a description of the ESCR test utilized in making a particular polymer blend and does nothing to overcome the specific definition set forth in lines 2:62-3:13. See '094 Patent, 21:53-67.

The intrinsic record supports a construction of the term as explicitly provided for in the patent. As such, the court will construe the claim term as “the ESCR test as defined in Column 2, line 62 through Column 3, line 13 of [the '094 Patent].”



## **VI. CLAIM CONSTRUCTION OF DISPUTED TERMS IN THE '318 PATENT**

### **A. "FLEXIBLE"**

The parties offer the same arguments for construction of “flexible” in the '318 Patent as for the '094 Patent. The court, after reviewing the claim, the '318 Patent specification, and the use of the term therein, again finds that the intrinsic record cannot support a definition of “flexible” that incorporates the limitations that Viva suggests. While environmental stress crack resistance is indeed a fundamental element of the patented invention, as demonstrated by its title—*Compositions and Blends for Forming Articles Having Improved Environmental Stress Crack Resistance*—it is not referenced in the patent as being fundamentally incorporated into “flexibility.” While the patent teaches that the thin-walled articles made from the claimed polymer blend should have a certain ESCR, see '318 Patent, 9:17-32; 9:47-54), Viva, in rebutting CTL’s duplicity arguments, went to great lengths to explain that flexibility and resistance to cracking comprise different measurements and, as such, are not interchangeable. See, e.g. Markman Tr. at 14:9-17. Similarly, nothing in the patent or the prosecution history suggests that flexibility requires ease of bending. The court finds it appropriate to construe the terms in both patents-in-suit identically, as the patents, which are authored by the same inventor, both describe methods for manufacturing flexible, thin-walled tubes. For the reasons articulated in the above analysis of the '094 Patent’s use of “flexible,” the court will construe the term to mean “capable of bending or being bent.”

### **B. "AT LEAST ONE POLYMER"**

Viva proposes that the court construe this term in accordance with its plan and ordinary meaning: “one or more polymers.” CTL does not propose its own construction, arguing instead that the term is indefinite and lacks enablement. The court finds that Viva’s proposed construction comports with

the term's plain and ordinary meaning and is consistent with the intrinsic evidence. As such, it will construe "at least one polymer" to mean "one or more polymers."

**C. "[THE AT LEAST ONE] HIGH MELT FLOW COMPATIBLE POLYMER"**

CTL does not propose a construction of this term, but relies solely on indefiniteness arguments. Viva proposes that the court construe this term as "the high melt flow polymer of the polymer blend that is compatible with the 'at least one polymer.'"<sup>5</sup> Viva argues that this construction reflects the plain and ordinary meaning of "at least one" as well as "high melt flow" and "compatible," which are terms of art in the polymer field. The court finds that Viva's proposed construction is appropriate for the following reasons.

Frist, Viva's proposed construction comports with the plain and ordinary meaning of "at least one," as well as the use of the term throughout the specification. Second, extrinsic evidence shows that "melt flow" is a term of art referring to a well-known physical property of polymers and that the patent uses the term in accordance with its plain and ordinary meaning. *See Tech. Dictionary of Plastics Materials* at 100 (#88-18 at 58); *Larousse* at 688 (#88-18 at 13); *Osswald Dep.* at 141:3-17. The intrinsic record makes clear that a distinguishing feature of the invention is the use of "high melt flow" compatible polymers as opposed to non-high melt flow compatible polymers. *See, e.g.,* '318 Patent, Example 2 ("[t]he only difference between" its inventive formulation and a comparative formulation of Example 1 was the "substitution of the high melt flow compatible polymer approximately chemical equivalent of the compatible polymer for the compatible polymer"); 03/14/2011 Amendment at 4-7 (VIVA 422-25) (#88-16 at 47) ("The compatible polymer having an

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<sup>5</sup> Viva initially proposed that the court construe this term as "the high melt flow polymer of the polymer blend that is compatible with the 'at least one polymer' and that improves the stress crack resistance of the polymer blend," but later revised its proposed construction and removed the component relating to stress crack resistance.

MFI of greater than 100 is a critical feature of the invention, and certainly not disclosed by Jacobs...it has been found that a blend having a compatible polymer having an MFI of greater than 100 confers significant advantages when compared with corresponding blends which use a compatible polymer having an MFI of less than 100.”). Nothing in the intrinsic record indicates that “high melt flow” is used in a manner contrary to its plain and ordinary meaning within the field.

Third, extrinsic evidence also indicates that “compatible polymer” is a term of art in the field meaning the “tendency of different polymers or different grades of a given polymer to mix uniformly or homogeneously and not separate into discrete phases.” See *Osswald Dep.* at 142:15-18; see also *Larousse* at 224 (1995) (#88-18 at 14) (“If two chemically distinct substances mix completely in the liquid state, then they are compatible and miscible . . . .”); *Rosato’s* (#88-18 at 49) (defining “compatibility” as the “ability of two or more substances combined with each other to form a homogenous composition”). Nothing in the intrinsic record indicates that “compatible” is used in a manner contrary to this plain and ordinary meaning. The court also notes that the patent requires that the “at least one polymer” and the “at least one high melt flow compatible polymer” be compatible with one another. There is no dispute that “compatible” is a relative term used in the field to denote that a specific polymer can be mixed uniformly with some polymers, but not with others. *Osswald Dep.* at 140-143. Most polymers are not compatible with one another and testing is typically required to determine compatibility. *Polymer Chemistry: An Introduction* at 89 (#88-18 at 77); *Osswald Dep.* at 143. As such, common sense dictates that the court construe the term to mean that the polymers taught in the blend be compatible with one another. The court will therefore construe the term to mean “the high melt flow polymer of the polymer blend that is compatible with the ‘at least one polymer.’”

**VII. CONCLUSION**

Based on the foregoing, the court provides the following claim constructions:

**'094 Patent**

<b>Disputed Term</b>	<b>Court's Construction</b>
"flexible"	"capable of bending or being bent"
"a/the polymer blend"	"compositions comprising at least one polymer and optionally incorporating additional components"
"an ESCR as herein defined"	"The ESCR test as defined in column 2, line 62 through column 3, line 13 of U.S. Patent No. 6,547,094"

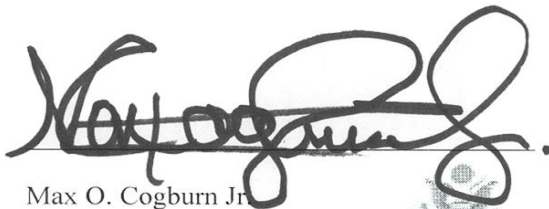
**'318 Patent**

<b>Disputed Term</b>	<b>Court's Construction</b>
"flexible"	"capable of bending or being bent"
"at least one polymer"	"one or more polymers"
"[at least one] high melt flow compatible polymer"	"the high melt flow polymer of the polymer blend that is compatible with the 'at least one polymer'"

**IT IS SO ORDERED.**

**IT IS FURTHER ORDERED** that this case be referred to Magistrate Judge Cayer for the entry of an appropriate Utility Patent Pretrial Order and Case Management Plan.

Signed: March 23, 2015



Max O. Cogburn Jr.  
United States District Judge