



STARK, U.S. District Judge:

Plaintiff Gillette Company (“Gillette”) brought this suit against Defendants Dollar Shave Club, Dorco Company Ltd., and Pace Shave, Inc. (collectively, “DSC”), alleging infringement of U.S. Patent No. 6,684,513, which claims coatings on razor blades and methods for making razor blades having those coatings. Presently before the Court is the issue of claim construction. The parties submitted technology tutorials (*see* D.I. 284, 285) and briefs (*see* D.I. 286, 289, 307, 311). Both parties also submitted expert declarations (*see* D.I. 287, 290, 309, 312), which the Court has considered. The Court held a claim construction hearing on April 3, 2017. (*See* Tr.)

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 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 TERMS

A. “amorphous material”¹

Gillette “material lacking long-range crystalline order”
DSC “material having no detectable crystal structure”
Court “material lacking long-range crystalline order, wherein such material may include nanocrystalline inclusions”

The parties agree that, fundamentally, an amorphous material is one that is not crystalline. But on the spectrum of materials from entirely amorphous to single crystalline, they disagree on the degree of crystallinity that a material may have while still being considered amorphous, as that term is used in the '513 patent. DSC contends that a material must be completely amorphous, such that an otherwise amorphous material containing one crystalline inclusion cannot be considered amorphous; and DSC suggests that its proposed construction captures this requirement of complete exclusion of crystalline material. (*See* Tr. at 47-49; D.I. 289 at 17) Gillette disagrees, arguing that references in the intrinsic record to diamond-like carbon – a preferred amorphous material – allow an amorphous material to contain nanocrystalline inclusions. (*See* Tr. at 22-23)

Having considered the intrinsic record, as well as each party’s expert opinions and extrinsic sources cited therein, the Court determines that Gillette’s proposed construction – that an amorphous material is one that lacks long-range crystalline order – and Gillette’s understanding that some crystalline inclusions may be present in such material, is consistent with

¹This term appears in claims 1, 6, 20, and 24 of the '513 patent.

the meaning an ordinarily skilled artisan would assign to the term in the context of the '513 patent. (See D.I. 287 at ¶ 35; D.I. 286 at 5 n.4; D.I. 287 Ex. 1 at 639 (“The absence of long-range order is the defining characteristic of the atomic arrangement in amorphous solids.”); Ex. 2 at I.2 (defining “amorphous solid” as “[a] solid that lacks long-range order in the arrangement of its atoms”))

The claims, specification, and prosecution history demonstrate that the patentee considered diamond-like carbon to be an exemplary amorphous material. Claim 1 recites a “hard coating being made of amorphous material containing carbon.” '513 patent col. 4 ll. 6-8. Claim 2, which depends from claim 1, requires that the “hard carbon coating” – that is, the amorphous material – “comprises diamond-like carbon material.” Col. 4 ll. 13-14. Similarly, the specification describes diamond-like carbon as “an amorphous carbon material that exhibits many of the desirable properties of diamond but does not have the crystalline structure of diamond.” Col. 3 ll. 1-4. The prosecution history also confirms that diamond-like carbon is an amorphous material. After stating that “the hard coating is made of ‘amorphous material,’” which “exclude[s] crystalline material,” the patentee explained that “[s]uch amorphous material includes ‘diamond-like carbon.’” (D.I. 249 Ex. C at 771) Accordingly, the intrinsic record indicates that diamond-like carbon must be included within any proper construction of “amorphous material.”

Gillette’s expert opines that, when the patent application was filed, it was known in the art that diamond-like carbon is a “material that is amorphous, but contains nanocrystalline material within an amorphous matrix.” (D.I. 309 at ¶ 9; *see also* D.I. 309 Ex. 13 at 1668 (“All DSC films are substantially amorphous, but some micro or nano-crystalline inclusions of all carbon forms

can be found in the amorphous [] matrix.”)) Hence, Gillette suggests that the correct construction of amorphous should allow the amorphous material to include some nanocrystalline inclusions, to account for this known characteristic of some diamond-like carbon materials. DSC contends that even if some types of diamond-like carbon include some crystalline material, it does not follow that “amorphous” should be given a definition to include those types of diamond-like carbon. Rather, DSC argues that those diamond-like carbon materials containing crystalline material do not fall within the meaning of amorphous, and only diamond-like carbon that does not include crystallites or crystalline inclusions is properly considered amorphous. (*See* Tr. at 41-42)

The Court is not persuaded that the patentee made any distinction between different types of diamond-like carbon materials. The claims, specification, and prosecution history consistently categorize diamond-like carbon as an amorphous material, and do not qualify this characterization in any way or limit it to a subset of diamond-like carbon materials. Thus, the Court agrees with Gillette that the meaning of amorphous must encompass *all* types of diamond-like carbon, some of which contain crystalline inclusions.

Accordingly, the Court will construe “amorphous material” to mean “material lacking long-range crystalline order, wherein such material may include nanocrystalline inclusions.”

B. “overcoat layer of a chromium containing material”²

Gillette

No construction needed

Or, “a layer of chromium containing material on top of the layer of [hard coating] (for claims 1, 20, 24) / [hard carbon containing material] (for claims 28, 35)”

Alternatively, “a chromium containing layer between a [hard coating (for claims 1, 20, 24) / hard carbon containing material (for claims 28, 35)] and a PTFE layer” (*See* Tr. at 65-66)

DSC

“intermediate layer of chromium containing material that improves adhesion to the layer of [hard coating (for claims 1, 20, 24) / hard carbon containing material (for claims 28, 35)]”

Court

“a chromium containing layer between a [hard coating (for claims 1, 20, 24) / hard carbon containing material (for claims 28, 35)] and a PTFE layer”

The parties dispute the meaning of “overcoat.” Gillette contends that “overcoat” simply means that the overlayer layer is on top of the hard coating layer. DSC counters that the overcoat layer plays a specific role in the invention to improve adhesion of the outer PTFE layer to the hard coating layer.

Gillette asserts that “overcoat” has an ordinary meaning that should apply here, giving the example of an overcoat one might wear over a suit. But Gillette does not demonstrate that this is a well-established usage in the relevant art. More importantly, even if there were an ordinary meaning of “overcoat,” the patent is clear that the overcoat layer is *not* the top layer; instead, as is undisputed, the overcoat layer *must* have another layer over it: the PTFE layer. Because the Court finds that there is no ordinary meaning to be applied, the term will be construed consistently with the disclosure in the intrinsic record. *See Indacon, Inc. v. Facebook, Inc.*, 824

²This term appears in claims 1, 20, 24, 28, and 35 of the ’513 patent.

F.3d 1352, 1357 (Fed. Cir. 2016).

DSC argues that the specification discloses that improved adhesion is a required function of the overcoat layer, making it appropriate for the construction to include that limitation. In describing some advantages of particular embodiments, the specification indicates that “[t]he use of a chromium containing overcoat layer provides improved adhesion of the polytetrafluorethylene outer layer to the hard coating layer.” Col. 2 ll. 14-16. The patent also states that the “[o]vercoat layer [] is used to reduce the tip rounding of the hard coated edge and to facilitate bonding of the outer layer to the hard coating while still maintaining the benefits of both.” Col. 3 ll. 5-8. According to DSC, these statements support limiting the overcoat to one that improves adhesion. But DSC’s proposal runs counter to two principles of claim construction: (1) the impropriety of importing limitations from the specification, *see Hill-Rom*, 755 F.3d at 1371, and (2) the instruction not to read function or purpose limitations into structural terms, *see Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1368 (Fed. Cir. 2012).

By contrast, the intrinsic record is consistent with Gillette’s second alternative proposed construction: the overcoat layer is a chromium containing layer that is positioned between a hard coating layer and a PTFE layer. Figure 1 shows the structure of the claimed razor blade, with the overcoat layer 18 being between the hard coating layer 16 and the PTFE layer 20. During prosecution, the patentee explained that “[t]he inventors found that, by using a chromium containing layer *between* an amorphous hard coating material and a PTFE layer, they could maintain the good edge strength provided by hard coating and have reduced tip rounding with repeated shaves.” (D.I. 249 Ex. C at 810) (emphasis added)

It is true that other claim language already describes, to some extent, the spatial

relationship between the three claimed layers: the overcoat is “on said layer of hard coating,” and the outer layer of PTFE is “over said overcoat layer.” Col. 4 ll. 9-12. But there are two sides to the hard coating layer, such that a layer may be *on* top or *on* bottom of that layer. (See Tr. at 94-95) Gillette’s proposed construction makes explicit that the overcoat layer is positioned on the hard coating layer such that it is between the hard coating layer and the PTFE layer.

Accordingly, the Court will adopt Gillette’s alternative construction.

C. “carbon containing material, doped with another element”³

Gillette “carbon containing material, with another element added”
DSC “carbon containing material, whereby another element is introduced into the material in small amounts to modify certain properties of the material”
Court “carbon containing material, whereby another element is introduced into the material in small amounts to modify certain properties of the material”

“wherein said hard coating is doped with another element”⁴

Gillette “wherein the hard coating has another element added”
DSC “wherein another element is introduced into the hard coating in small amounts to modify certain properties of the coating”
Court “wherein another element is introduced into the hard coating in small amounts to modify certain properties of the coating”

Gillette contends that the term “doped” encompasses the addition of another element in

³This term appears in claims 28 and 35 of the ’513 patent.

⁴This term appears in claims 19 and 23 of the ’513 patent.

any amount and that nothing in the intrinsic record supports limiting the quantity that may be added. DSC counters that this “doped” is a term of art with an ordinary meaning.

The Court agrees with DSC that “doped” has an ordinary meaning in the field of coating materials. According to DSC’s expert, Dr. Watts, “doping a material (*i.e.*, a ‘host material’) is generally understood to mean introducing only a small amount of a dopant to the host material to modify certain properties of the host material.” (D.I. 290 at ¶ 35) Dr. Watts identifies dictionaries from the relevant period, which define “dope” as “[t]o add impurities (called dopants) to a substance, usually a solid, in a controlled manner to cause the substance to have certain desired properties” (D.I. 289 Ex. 9), and “dopant” as “an impurity added usu[ally] in minute amounts to a pure substance to alter its properties” (D.I. 289 Ex. 8). These sources support DSC’s proposal. Notably, Gillette does not supply an expert opinion to refute that the term has an ordinary meaning or to suggest that the ordinary meaning is something other than what DSC proposes.

Accordingly, the Court will adopt DSC’s proposed constructions, which are consistent with the meaning a person of ordinary skill in the art would assign to the terms.

III. CONCLUSION

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