

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

AGROFRESH INC.,)
)
 Plaintiff,)
)
 v.)
)
 ESSENTIV LLC, DECCO U.S. POST-HARVEST,)
 INC., and CEREXAGRI, INC. d/b/a DECCO)
 POST-HARVEST,)
)
 Defendants.)
 _____)

Civil Action No. 16-662-MN-SRF

~~UNDER SEAL~~

*Unsealed
12/29/18*

REPORT AND RECOMMENDATION

I. INTRODUCTION

In this patent infringement action filed by plaintiff AgroFresh Inc. (“AgroFresh”) against defendants Essentiv LLC, Decco U.S. Post-Harvest, Inc., and Cerexagri, Inc.¹ (“Decco”), AgroFresh alleges infringement of United States Patent Nos. 9,394,216 (“the ‘216 patent”), 6,017,849 (“the ‘849 patent”), and 6,313,068 (“the ‘068 patent”), among a variety of other claims. (D.I. 106) Presently before the court is the matter of claim construction. This decision sets forth the court’s recommendations of constructions for the disputed claim terms discussed in the briefing and at the *Markman* hearing held on September 11, 2018.

II. BACKGROUND

The ‘849 patent and ‘068 patent (together, “the Daly patents”) share a common specification, which identifies ethylene as an important plant hormone affecting many aspects of plant growth, development, and senescence, particularly fruit ripening, flower fading, and leaf

¹ The original complaint filed on August 3, 2016 also named MirTech, Inc. and Nazir Mir as defendants. (D.I. 2) On September 15, 2017, AgroFresh executed a Private Settlement Agreement with Nazir Mir and MirTech, Inc. (D.I. 115; D.I. 180, Ex. C)

abscission. ('849 patent, col. 2:6-12; '068 patent, col. 2:10-16) The Daly patents are directed to identifying “ways to prevent or reduce the deleterious effects of ethylene on plants.” ('849 patent, col. 2:40-41; '068 patent, col. 2:21-24) Specifically, the Daly patents are directed to encapsulating the 1-methylcyclopropene (“1-MCP”) molecule to neutralize its volatility and allow its use to inhibit the ethylene response in plants.

The application resulting in the '216 patent was filed on May 29, 2015, and issued on July 19, 2016. The '216 patent represents an improvement over the Daly patents by providing metal coordination polymeric networks (“MCPNs”) that may be used to adsorb volatile cyclopropene compounds such as 1-MCP. ('216 patent, Abstract) The MCPNs disclosed in the '216 patent represent “a less costly option for sequestering 1-MCP for safe handling and use” in comparison to the α -cyclodextrin molecules used in the Daly patents. ('216 patent, col. 5:12-16) On March 7, 2018, the Patent Trial and Appeal Board (“PTAB”) issued a decision instituting *inter partes* review (“IPR”) against all claims of the '216 patent. (D.I. 198, Ex. DX-8)

III. LEGAL STANDARD

Construing the claims of a patent presents a question of law, although subsidiary fact finding is sometimes necessary. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837-38 (2015) (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-78 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370, 388-90 (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 may attach the appropriate weight to appropriate sources “in light of the statutes and policies that inform patent law.” *Id.*

The words of the claims “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.” *Phillips*, 415 F.3d 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); *see also Eon Corp. IP Holdings v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1320 (Fed. Cir. 2016). Claim terms are typically used consistently throughout the patent, and “usage of a term in one claim can often illuminate the meaning of the same term in other claims.” *Phillips*, 415 F.3d at 1314 (observing that “[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 . . .”).

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) (citing *Ecolab Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1375 (Fed. Cir. 2002)).

Other intrinsic evidence, including 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). “[T]he 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 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). 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." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (internal quotation marks omitted), *aff'd*, 481 F.3d 1371 (Fed. Cir. 2007). The specification "is not a substitute for, nor can it be used to rewrite, the chosen claim language." *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004).

In addition to the specification, a court "should also consider the patent's prosecution history, if it is in evidence." *Markman*, 52 F.3d at 980. The prosecution history, which is also "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.*

A court also may rely on "extrinsic evidence," which "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.* (“[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.”). 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.

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).

IV. CONSTRUCTION OF DISPUTED TERMS

A. “Molecular encapsulation agent” (all claims of the ‘849 patent and the ‘068 patent)

AgroFresh	Decco	Court
“a compound that has a lock and key structure similar to an enzyme whereby a substrate selectively fits into the encapsulation site”	“a compound that has a lock and key structure similar to an enzyme whereby a substrate selectively fits into the encapsulation site”	“a compound that has a lock and key structure similar to an enzyme whereby a substrate selectively fits into the encapsulation site”

The parties agree that the specification defines the term as “a compound that has a lock and key structure similar to an enzyme whereby a substrate selectively fits into the encapsulation site.” (D.I. 198, Ex. A at 1; ‘849 patent, col. 10:59-61) No further analysis of this term is required.

B. “complex” (all claims of the ‘216 patent)

AgroFresh	Decco	Court
“a compound in which at least some of the 1-MCP molecules have formed chemical bonds with a metal coordination polymer network, including both through the processes of chemisorption and physisorption”	No separate claim construction required, but if construction is required, the plain meaning should control	No separate claim construction required.

I recommend that the court adopt Decco’s proposal and decline to construe the term “complex” apart from the ensuing construction of “adsorption complex” at § IV.C, *infra*. The parties’ dispute centers on whether the term “complex,” as used in the ‘216 patent, requires the formation of chemical bonds between 1-MCP molecules and the MCPN. The intrinsic and extrinsic evidence support Decco’s position that the ‘216 patent does not require the formation of a chemical bond between the 1-MCP and the MCPN.

The word “complex” does not appear in isolation in the claims of the ‘216 patent.² Instead, the term appears in independent claims 1, 6, and 13 as “adsorption complex,” a term that

² AgroFresh emphasizes that, although the term “complex” does not appear in isolation in the claims of the ‘216 patent, it appears in isolation four times in the specification of the ‘216 patent. (9/11/18 Tr. at 18:5-25) However, AgroFresh concedes that these references allude to the α -cyclodextrin/1-MCP complex disclosed in the Daly patents. (‘216 patent, col. 4:63-5:12) (referring to the strategy for “storing, handling, and applying 1-MCP” disclosed in the ‘849 patent). The ‘216 patent specification distinguishes the prior art α -cyclodextrin/1-MCP complex

is expressly defined in the specification and is construed at § IV.C, *infra*. (‘216 patent, col. 3:25-26; 20:27-39; 20:48-67; 21:16-22:7) AgroFresh relies on the Daly patents in support of its proposed construction because the Daly patents use the term “complex” in isolation within the claim language. (‘849 patent, col. 20:22-32; ‘068 patent, col. 20:23-33) (claiming “[a] complex formed from a molecular encapsulation agent and a compound. . . .) However, AgroFresh did not seek a construction of “complex” in connection with the Daly patents, and instead accepts the plain meaning of the term as used in the context of the Daly patents. (D.I. 198, Ex. A); *see Inventio AG v. ThyssenKrupp Elevator Corp.*, C.A. No. 08-874-RGA, 2014 WL 468897, at *4 (D. Del. Feb. 3, 2014) (where the parties do not identify a term for construction during the *Markman* process, the meaning of the term is a question of fact for the jury); *see also Whirlpool Corp. v. TST Water, LLC*, 2018 WL 1536875, at *3 (E.D. Tex. Mar. 29, 2018) (concluding that terms not construed during the *Markman* process should go to the jury to be given their plain and ordinary meaning as understood by a person of ordinary skill in the art). AgroFresh’s allegation that the term “complex” is ambiguous only in the context of the ‘216 patent is therefore not compelling.

AgroFresh’s proposed construction, which includes a requirement that some of the 1-MCP molecules must form chemical bonds with MCPN, would exclude embodiments identified in the ‘216 patent claims and specification that require only physisorption. The ‘216 patent claims recite twelve MCPN-1-MCP complexes. (‘216 patent, col. 20:27-39; 20:48-67; 21:16-22:7; 22:26-29; D.I. 206, Ex. 1 at ¶ 33) The record demonstrates that eight of the twelve MCPN-1-MCP complexes rely exclusively on Van der Waals forces, which are physical bonds described

from the claimed 1-MCP-MCPN adsorption complex. (‘216 patent, col. 5:12-28) Other purported references to “complex” in isolation in the ‘216 patent specification are contrived. (‘216 patent, col. 3:25) (beginning the definition of “[a]dsorption complex” with “[a] complex.”)

as “weak atomic forces” in the Daly patents.³ (D.I. 206, Ex. 1 at ¶ 34; ‘849 patent, col. 3:64-4:1; ‘068 patent, col. 4:3-7) In these complexes, there is no open coordination site or physical space for 1-MCP molecules to form a chemical bond with the metal ions of the MCPN, because all open spaces are occupied by the MCPN’s organic ligands.⁴ (D.I. 206, Ex. 1 at ¶ 34; D.I. 219, Ex. 5 at 704; Ex. 7 at 81:24-82:13; D.I. 198, DX-16 at 146:15-148:5; ‘216 patent, col. 3:62-65) AgroFresh’s proposed construction would exclude these embodiments, which are expressly included in the claim language of the ‘216 patent.

In support of its position that chemisorption is a necessary component of the construction of “complex,” AgroFresh points to a pre-litigation PowerPoint presentation by Decco that suggests magnesium formate works by 1-MCP adsorption via π -cloud within the structure.⁵ (D.I. 216, Ex. PX-13 at MIR_0138046) AgroFresh cites evidence establishing that π -complexation requires the formation of a chemical bond. (D.I. 204, Ex. PX-4 at ¶¶ 15, 40) However, AgroFresh fails to establish the equivalence of π -cloud, as referenced in the PowerPoint presentation, and π -complexation. The record reflects that π -cloud describes a cloud of electrons involving electrostatic dipole-dipole interaction, with no mention of chemical bonding. (*Markman* Ex. 1 at 145;⁶ 9/11/18 Tr. at 56:10-14; 57:22-58:3) A 2008 Department of Energy

³ The parties do not dispute that Van der Waals forces are a type of physical interaction. (D.I. 204, Ex. PX-3 at ¶ 44)

⁴ In this context, the parties specifically discuss magnesium formate, which is the MCPN used in Decco’s accused commercial product, TruPick. (D.I. 216, Ex. 13 at MIR_0138060)

⁵ Decco challenges the appropriateness of AgroFresh’s reliance on this exhibit, which discusses the accused TruPick product. (9/11/18 Tr. at 55:3-11) Specifically, Decco cites *Wilson Sporting Goods v. Hillerich* in support of the proposition that an evaluation of accused products is not appropriate to influence claim construction. 442 F.3d 1322, 1330-31 (Fed. Cir. 2006) (“[C]laims may not be construed with reference to the accused device.” (quoting *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002)).

⁶ During the *Markman* hearing, Decco’s counsel presented an article from the publication *Nature Materials* entitled “A flexible interpenetrating coordination framework with a bimodal porous

Report presented by Decco during the *Markman* hearing identifies a π -cloud leading to Van der Waals forces, as opposed to chemical bonds. (*Markman* Ex. 2 at 643) In contrast, π -complexation involves specific chemical interactions, such as a sharing of electrons and resultant formation of chemical bonds. (D.I. 204, PX-4 at ¶ 40) AgroFresh has not presented evidence establishing that π -cloud is equivalent to π -complexation to refute Decco's evidence.

AgroFresh also alleges that water is necessary to release 1-MCP from the MCPN molecule in a chemical reaction, citing to Example 8 from the '216 patent specification. (D.I. 203 at 8) However, the specification of the '216 patent expressly states that "[v]arious methods may be used for releasing the 1-MCP from the MCPN-1-MCP complex," including contact with water in some embodiments, and heat or pressure in other embodiments. ('216 patent, col. 7:18-28) This is consistent with claim 12, which recites a kit "wherein the 1-MCP is released from the adsorption complex when the MCPN is contacted with at least one aqueous fluid, by heat, or by positive or negative pressure." ('216 patent, col. 21:11-14) Although Example 8 describes the release of 1-MCP from MCPN when water is introduced to cause a chemical reaction, Example 9 recites the use of heat to release 1-MCP. ('216 patent, col. 13:59-14:55) AgroFresh's expert, Dr. Watson, confirms that "[i]f the molecule were merely physisorbed into the material, then the addition of water would not be necessary to release the 1-MCP because a simple pressure change . . . at the adsorption temperature would easily release physisorbed molecules." (D.I. 217 at ¶ 6) Where, as here, both the claims and the specification of the '216 patent contemplate the use of heat or pressure to release 1-MCP in lieu of introducing water, limiting the scope of the term based on a single embodiment disclosed in Example 8 is not

functionality," written by Tapas Kumar Maji, Ryotaro Matsuda, and Susumu Kitagawa, and appearing in Volume 6 in the February 2007 publication.

supported by the case law. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (“Even 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.” (internal citations and quotation marks omitted)).

Finally, AgroFresh’s assertion that the hydrogen binding identified in the Daly patents involves the formation of a chemical bond is refuted by the Daly patents themselves, which identify both Van der Waals forces and hydrogen binding as “weak atomic forces.” (‘849 patent, col. 3:64-4:1) Extrinsic evidence further supports Decco’s position that hydrogen bonds are not chemical bonds. (D.I. 219, Ex. 3 at 438) (“Hydrogen bonds should not be confused with chemical bonds. Chemical bonds occur between individual atoms within a molecule, whereas hydrogen bonds . . . are intermolecular forces that occur between molecules.”) Although there is a lack of consensus in the extrinsic evidence regarding whether hydrogen bonds are chemical bonds,⁷ the intrinsic record in this instance provides sufficient support for Decco’s proposal. Moreover, even if the court were to conclude that a hydrogen bond is a chemical bond, there is doubt as to whether 1-MCP can form a hydrogen bond with MCPN. (D.I. 219, Ex. 7 at 12:13-13:24)

The PTAB’s institution decision on the ‘216 patent further supports Decco’s proposal. (D.I. 198, Ex. DX-8 at 15-16) In its institution decision, the PTAB rejected AgroFresh’s assertion “that other portions of the specification are intended to supplement [the ‘216 patent’s] express definition” of adsorption complex, and dismissed AgroFresh’s attempt to “impose[] the

⁷ AgroFresh relies on extrinsic evidence suggesting that hydrogen bonds are chemical bonds. (D.I. 215, Ex. PX-10 at 36; Ex. PX-11 at 1027)

additional requirement that ‘the 1-MCP molecules have formed coordinate bonds with a metal coordination polymer network, including by both the processes of chemisorption and physisorption’ . . . [because] the specification does not describe an adsorption complex in those terms.” (D.I. 198, Ex. DX-8 at 16) In sum, the PTAB concluded that there was no reason to isolate the term “complex” from the phrase “adsorption complex,” and a further definition of the word “complex” was not supported by the intrinsic record. (*Id.*)

The claims of the ‘216 patent do not require the formation of chemical bonds between the 1-MCP and MCPN. Therefore, AgroFresh’s proposed construction would improperly narrow the scope of the claims. *See Epos Techs. Ltd. v. Pegasus Techs. Ltd.*, 766 F.3d 1338, 1343 (Fed. Cir. 2014) (excluding the word “conventional” from the proper construction of the term “drawing implement” because “[t]he claims themselves only state that a drawing implement must have at least a ‘body’ and an ‘operative tip.’”); *see also Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013) (rejecting a claim construction that included a limitation not explicitly required by the claim language). For these reasons, I recommend that the court adopt Decco’s proposal.

C. “adsorption complex” (‘216 patent, claims 1, 6, and 13)

AgroFresh	Decco	Court
“a complex of a cyclopropene compound and a metal coordination polymer network (MCPN)”	“a complex of a cyclopropene compound and a metal coordination polymer network (MCPN),” where no separate construction of “complex” is required	“a complex of a cyclopropene compound and a metal coordination polymer network (MCPN)”

Pursuant to the parties’ Joint Claim Construction Chart, the parties agree that the ‘216 patent expressly defines “adsorption complex” as “a complex of a cyclopropene compound and a metal coordination polymer network (MCPN).” (D.I. 198, Ex. A at 3; D.I. 203 at 10; D.I. 205 at

7) The parties' dispute regarding the proper construction of "complex" is discussed at § IV.B, *supra*.

D. "Metal coordination polymer network" or "MCPN" (claims 1-20 of the '216 patent)

AgroFresh	Decco	Court
"a porous metal containing composition that is capable of adsorbing 1-MCP"	"a porous metal containing composition that is capable of adsorbing 1-MCP"	"a porous metal containing composition that is capable of adsorbing 1-MCP"

Pursuant to the Joint Claim Construction Chart, the parties agree to the '216 patent's definition of "MCPN" as "a porous metal containing composition that is capable of adsorbing 1-MCP." (D.I. 198, Ex. A at 4) This definition is supported by the '216 patent specification. ('216 patent, col. 3:60-65) No further analysis of this term is required.

E. "the 1-MCP is adsorbed into the MCPN" ('216 patent, claims 1, 6)

AgroFresh	Decco	Court
"the 1-MCP molecule has been introduced into the MCPN, for example through an adsorption vessel or with the aid of continuous agitation, so as to form a multitude of complexes"	"the 1-MCP molecules are adhered to a surface of the MCPN"	"the 1-MCP molecules are adhered to a surface of the MCPN"

I recommend that the court adopt Decco's proposed construction, which is consistent with the intrinsic record. The focus of the parties' dispute involves whether the 1-MCP molecules are adsorbed into the MCPN, or whether it is possible for the 1-MCP molecules to adhere to the outer surface of the MCPN. (D.I. 214 at 8; D.I. 213 at 13) Decco's proposed construction is consistent with the express definition of "adsorption" set forth in the '216 patent specification. Specifically, the patentee defined "adsorption" as "[a]dhesion of atoms, ions, or molecules from a gas, liquid, or dissolved solid to a surface. Adsorption is a different process

from absorption whereby in adsorption the molecules are taken up in the bulk of other matter, not by the surface of other matter (as with adsorption).” (‘216 patent, col. 3:13-17) Thus, the specification unequivocally establishes that adsorption involves the adhesion of a molecule to a surface, consistent with Decco’s proposed construction. (*Id.*)

The record from the PTAB proceedings further supports Decco’s proposed construction. In its institution decision regarding the validity of the ‘216 patent, the PTAB considered and rejected the same proposed construction proffered by AgroFresh in the instant litigation. (D.I. 198, Ex. DX-8 at 17) Specifically, the PTAB concluded that, “[i]n view of the constructions of ‘adsorption complex’ and ‘MCPN’ we adopt above, we determine that it is not necessary to construe expressly the broader phrase ‘1-MCP is adsorbed into the MCPN’” (*Id.*)

AgroFresh contends that Decco’s proposed construction improperly omits the word “into,” which is critical to clarify that the 1-MCP adheres to an inner surface. (9/11/18 Tr. at 73:6-16) In support of its position, AgroFresh cites the claim language, which states that “the 1-MCP is adsorbed into the MCPN.” (‘216 patent, col. 20:39, 20:64-65) AgroFresh also relies on the declaration of Decco’s expert, Dr. Dincă, which explains that “[t]he surface area of the ‘216 patent’s claimed MOFs is overwhelmingly internal, and so most of the adhesion takes place at the inner surfaces of the MOF.” (D.I. 219, Ex. 1 at ¶ 28)

The evidence propounded by Decco supports AgroFresh’s position that most of the 1-MCP adheres to an inner surface of the MCPN. (D.I. 219, Ex. 1 at ¶¶ 27-29) However, the specification’s definition of “adsorption” generically explains that the molecules adhere “to a surface,” without excluding the possibility that the 1-MCP molecules may adhere to an external surface. (‘216 patent, col. 3:13-14) Consequently, Decco’s proposed construction finds more support in the intrinsic record.

F. “1-MCP impermeable” and “a 1-MCP impermeable package” (‘216 patent, claims 6-20)

	AgroFresh	Decco	Court
“1-MCP impermeable”	“1-MCP will not pass for at least three days within a detection limit of 10 ppb.”	“having low or no gas permeability to 1-MCP”	“having low or no gas permeability to 1-MCP”
“a 1-MCP impermeable package”	“a package (including fillers) through which 1-MCP will not pass for at least three days within a detection limit of 10 ppb.”	“a package having low or no gas permeability to 1-MCP”	“a package having low or no gas permeability to 1-MCP”

I recommend that the court adopt Decco’s proposed construction, which is consistent with the intrinsic record. The parties’ dispute centers on whether the terms require zero gas permeability, or whether low gas permeability is acceptable. (D.I. 205 at 15) The ‘216 patent specification does not define “impermeable,” but defines “[p]ermeance or permeation” in the context of “transmission”: “The degree to which a material admits a flow of matter or transmits another substance.” (‘216 patent, col. 3:66-67) The specification acknowledges that “[p]ermeable materials exhibit different permeances—e.g., permeation rates—for different chemical species.” (*Id.*, col. 4:2-4)

The ‘216 patent specification discloses embodiments in which the MCPN-1-MCP complexes are contained within capsules that “may include any material that has low gas permeability properties. . . .” (‘216 patent, col. 6:29-35) The specification further explains that the capsules may include fillers that “minimize[] the loss of 1-MCP, and achieve at least 90% active ingredient retention in the formulation. . . .” (*Id.*, col. 6:49-55) The specification describes “some embodiments” using coatings or fillings for capsules, reciting “specific, non-limiting examples.” (*Id.*, col. 6:39-46) Consequently, the written description expressly

contemplates the permeation of a low percentage of 1-MCP through the impermeable packaging, particularly in embodiments such as capsules with no coatings or fillers.

AgroFresh contends that the claims need not encompass every embodiment set forth in the specification. (9/11/18 Tr. at 89:3-90:5) However, dependent claim 7 establishes that the 1-MCP-impermeable package may be “a capsule, a flexible pouch, or a rigid container.” (*Id.*, col. 21:1-2) The claims of the ‘216 patent, which contemplate the use of a capsule as packaging, do not support the limitations AgroFresh seeks to impose on these particular claim terms. The law is well-established that “a construction ‘that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.’” *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1372 (Fed. Cir. 2018) (quoting *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007)).

The court’s recommendation is consistent with the PTAB’s construction of the disputed term following consideration of many of the same arguments presented here. (D.I. 198, Ex. DX-8 at 17-19) Specifically, the PTAB considered the specification’s discussion of the 1-MCP transmission rate in the context of sachet embodiments, and concluded that “the sachet material has some degree of permeability to 1-MCP.” (*Id.* at 18-19; ‘216 patent, col. 7:50-8:22) The PTAB concluded that AgroFresh’s proposed construction was “less persuasive because it excludes the capsule embodiments, which the claims encompass and the specification describes as having ‘low gas permeability properties.’” (D.I. 198, Ex. DX-8 at 19)

AgroFresh relies on Example 17 and Table 9 of the ‘216 patent in support of its position that the disputed terms require 100% retention of 1-MCP. (D.I. 214 at 9-10) However, Example 17 and Table 9 identify the values of active ingredient formulation retention in the context of concentration, as opposed to permeability or transmission rates. (‘216 patent, col. 19:19-50)

AgroFresh’s expert, Dr. Walton, confirmed that this portion of the specification does not discuss the packaging or transmission rates of 1-MCP through the packaging. (D.I. 219, Ex. 7 at 44:13-46:15) Moreover, Example 17 addresses only three capsule embodiments. Limiting the construction of the claim terms based on Example 17 would improperly narrow the scope of the disputed claim terms.

Adopting AgroFresh’s proposed construction would require the court to exclude preferred embodiments disclosed in the specification. Therefore, I recommend that the court adopt Decco’s proposed construction.

V. CONCLUSION

For the reasons set forth above, I recommend that the court construe disputed terms as follows:

Claim Term	Recommended Construction
“molecular encapsulation agent”	“a compound that has a lock and key structure similar to an enzyme whereby a substrate selectively fits into the encapsulation site
“complex”	No separate claim construction required.
“adsorption complex”	“a complex of a cyclopropene compound and a metal coordination polymer network (MCPN)”
“metal coordination polymer network” or “MCPN”	“a porous metal containing composition that is capable of adsorbing 1-MCP”
“the 1-MCP is adsorbed into the MCPN”	“the 1-MCP molecules are adhered to a surface of the MCPN”
“1-MCP impermeable”	“having low or no gas permeability to 1-MCP”
“a 1-MCP impermeable package”	“a package having low or no gas permeability to 1-MCP”

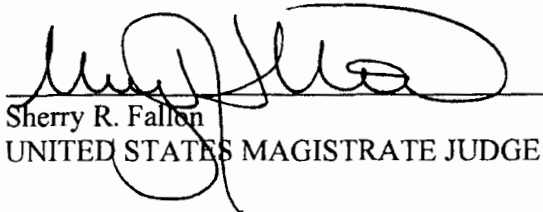
Given that the court has relied upon material that technically remains under seal, the court is releasing this Report and Recommendation under seal, pending review by the parties. In the unlikely event that the parties believe that certain material in this Report and Recommendation should be redacted, the parties should jointly submit a proposed redacted

version by no later than **October 26, 2018**. The court will subsequently issue a publicly available version of its Report and Recommendation.

This Report and Recommendation is filed pursuant to 28 U.S.C. § 636(b)(1)(B), Fed. R. Civ. P. 72(b)(1), and D. Del. LR 72.1. The parties may serve and file specific written objections within fourteen (14) days after being served with a copy of this Report and Recommendation. Fed. R. Civ. P. 72(b)(2). The objections and responses to the objections are limited to ten (10) pages each. The failure of a party to object to legal conclusions may result in the loss of the right to de novo review in the District Court. *See Sincavage v. Barnhart*, 171 F. App'x 924, 925 n.1 (3d Cir. 2006); *Henderson v. Carlson*, 812 F.2d 874, 878-79 (3d Cir. 1987).

The parties are directed to the court's Standing Order For Objections Filed Under Fed. R. Civ. P. 72, dated October 9, 2013, a copy of which is available on the court's website, <http://www.ded.uscourts.gov>.

Dated: October 18, 2018


Sherry R. Fallon
UNITED STATES MAGISTRATE JUDGE