IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

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| INVISTA NORTH AMERICA S.À.R.L. and AURIGA POLYMERS INC., | ) | |
| Plaintiffs, | ) | |
| v. | ) | Civ. No. 11-1007-SLR-CJB |
| M&G USA CORPORATION and M&G POLYMERS USA, LLC, | ) | |
| Defendants. | ) | |

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**MEMORANDUM OPINION**

Dated: June 25, 2013
Wilmington, Delaware

**ROBINSON, District Judge**

## I. INTRODUCTION

Plaintiffs INVISTA North America S.à.r.l. ("Invista NA") and Auriga Polymers Inc. ("Auriga Polymers")[1] (collectively, "Invista") are suing M&G USA Corporation ("M&G Corp.") and M&G Polymers USA, LLC ("M&G LLC") (collectively, "M&G") for infringement of United States Patent Nos. 7,919,159 ("the '159 patent), 7,943,216 ("the '216 patent"), and 7,879,930 ("the '930 patent") (collectively, "the patents-in-suit"). (D.I. 1; D.I. 7) M&G has asserted counterclaims seeking declaratory judgment of non-infringement and invalidity of the patents-in-suit. (D.I. 42)

The patents-in-suit relate to plastic materials with applications in packaging for oxygen-sensitive foods and beverages. The court has construed, in a separate memorandum opinion and order, the disputed limitations of the patents-in-suit and has resolved, in a separate memorandum order, various motions by Invista and M&G to strike or exclude certain expert testimony and filings. Currently before the court are several summary judgment motions: Invista's motion for partial summary judgment of infringement (D.I. 231); M&G's cross-motion for summary judgment of non-infringement (D.I. 265); M&G's motion for summary judgment of invalidity (D.I. 233); and Invista's cross-motion for partial summary judgment of validity (D.I. 262). The court has jurisdiction over these matters pursuant to 28 U.S.C. § 1338.

## II. BACKGROUND

### A. The Parties

Invista NA, one of the world's largest integrated producers of polymers, is a

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[1]Auriga Polymers was added as a plaintiff by a joint stipulation entered by the court on April 30, 2012. (D.I. 52)

corporation organized under the laws of Luxembourg, with its headquarters in Wichita, Kansas. (D.I. 7 at ¶ 2) It sold off its North American business, which became Auriga Polymers. (D.I. 368 at 6:8-10) Invista NA owns the patents-in-suit, while Auriga Polymers is the exclusive licensee. (*Id.* at 6:2, 6:10-11)

M&G Corp. and M&G LLC are both Delaware corporations. (D.I. 7 at ¶¶ 3-4; D.I. 42 ¶¶ 3-4) M&G Corp. has its principal place of business in Ohio, and M&G LLC has its principal place of business in West Virginia. (D.I. 7 at ¶¶ 3-4; D.I. 42 ¶¶ 3-4)

**B. Technology Overview**

Plastic polymers are commonly used for making food and beverage containers and offer several advantages over the use of glass or metal. They are lighter in weight, have less breakage, and can potentially lower costs. ('216 patent, col. 1:25-27)[2] Polymers are synthesized by reacting monomers to form a larger polymer chain, and they can be made into bottles by a method called stretch blow molding. In stretch blow molding, a polymer resin is typically dried, melted and extruded into preforms. (*Id.*, col. 7:56-58) The preforms are then heated and blown-molded into bottles of desired shape and size. (*Id.*, col. 7:62-64)

One type of polymer, polyester, has been widely used in the bottling industry for many years. Polyethylene terephthalate ("PET") is a common example of a polyester. (*Id.*, col. 2:34, 8:16) Polyesters can be prepared by reacting diesters (e.g., dicarboxylic ester) or diacids (e.g., terephthalic acide) with ethylene glycol ("EG"). (*Id.*, col. 3:27-31) However, polyesters have inferior gas-barrier properties. Because they are not

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[2]As the '159 and '216 patents share a specification, the court will cite to the '216 patent for convenience, except when discussing the '159 patent in particular.

impervious to gas, they limit the shelf life of oxygen-sensitive foods, condiments, and beverages (such as juice, soda, or beer). (*Id.*, col. 1:27-33)

In the prior art, it was known that the use of low-gas permeable polymers, known as partially aromatic polyamides (or "nylons"), with polyesters increases barrier properties. (*Id.*, col. 1:31-38) Partially aromatic polyamides have non-scavenging, or "passive," barrier properties – they restrict carbon dioxide leakage from, and oxygen intrusion into, a container by obstructing the paths of gas molecules. (*Id.*, col. 1:21; '930 patent, col. 2:22) However, partially aromatic polyamides are not miscible – they do not mix well – with polyesters like PET, and they also give containers an undesirable yellow and hazy appearance. ('216 patent, col. 1:44-46)

It was commonly known in the art that combining a thin layer of a partially aromatic polyamide, like MXD6,[3] with one or more layers of polyester in multilayer bottles increased barrier properties. (*Id.*, col. 1:35-43; '930 patent, col. 2:18-25) This multilayer system, however, produced bottles with undesirable haze. ('216 patent, col. 1:33-35)

It was also known in the art that the addition of a transition metal catalyst, such as cobalt salt, improved the gas barrier properties of polyamide multilayer containers and blends with PET by promoting active oxygen scavenging. (*Id.*, col. 2:32-48; '930 patent, col. 1:30-31, 1:51-5-55) As opposed to a passive barrier, this "active" barrier reacts with oxygen in the process of traversing the package barrier. ('930 patent, col. 1:33-38)

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[3]MXD6 is the commercial name for poly(meta-xylylene adipamide). ('930 patent, col. 1:50-51, 4:59-60)

### C. The Inventions and Patents-in-Suit

#### 1. The '159 and '216 patents

According to the patentee, no prior art disclosed a monolayer container with a desirable balance of high gas barrier properties and low yellowness and haze, as taught by the '159 and '216 patents. ('216 patent, col. 2:55-61, 2:65-3:13) The inventions are useful as packaging for oxygen-sensitive foods that require a long shelf life. (*Id.*, col. 2:55-67)

The '159 patent discloses a four-component composition. Claim 1 of the '159 patent provides:

> 1. A composition for containers comprising: polyester, partially aromatic polyamide, ionic compatibilizer, and a cobalt salt; wherein said ionic compatibilizer is a copolyester containing a metal sulfonate salt.

As discussed, the partially aromatic polyamide provides a passive barrier. The cobalt salt is a transition metal catalyst that "activates" the partially aromatic polyamide to form an active barrier that scavenges oxygen, thereby improving barrier properties. The patentee reports that the ionic compatibilizer allows a "synergistic reduction" in yellowness and haze and "surprisingly" increases barrier properties even further. ('159 patent, col. 5:22-25, 9:58-61)

The '216 patent is a division of the '159 patent and shares the same specification. (*See* '216 patent, col. 1:8-9) The '216 patent discloses a three-component composition. Claim 1 of the '216 patent recites:

> 1. A composition for containers comprising:
>
> a copolyester comprising a metal sulfonate salt;

a partially aromatic polyamide;

and a cobalt salt.

The composition of the '216 patent differs from that of the '159 patent in that it replaces the polyester and ionic compatibilizer components and recites, in their place, "a copolyester comprising a metal sulfonate salt." The other claims of the '216 and '159 patents disclose more specific compositions, as well as articles and containers made from the compositions.

**2. The '930 patent**

Invista is asserting indirect infringement of claims 1, 3-6, 8, 10, and 11 of the '930 patent, which relates to colored oxygen scavenging polymers and articles made from such polymers, such as green, blue, or amber bottles. ('930 patent, col. 1:7-8, 2:20) In the prior art, it was not problematic to use colorants because there would be no reaction between the colorant, which was added to the non-scavenging (or passive barrier) layers and the transition metal catalyst, which was contained in the oxygen scavenging (or active barrier) layer. (*Id.*, col. 2:20-25) However, in monolayer articles, such as those taught in the '159 and '216 patents, the colorant is intimately mixed in a melt phase with the transition metal catalyst. (*Id.*, col. 2:35-38) Some colorants deactivate the transition metal catalyst after melt blending, which makes the transition metal catalyst less effective as a catalyst. (*Id.*, col. 2:32-34)

The '930 patent relates to the use of certain colorants that do not completely deactivate the catalyst and, thus, are suitable for use with a transition metal catalyst in monolayer scavenging systems. (*Id.*, col. 2:42-44) The specification of the '930 patent

describes the methods used to determine the catalyst deactivation properties of colorants. The oxygen permeability of each specimen was measured at zero percent relative humidity, one atmosphere pressure, and 23° C, and was expressed in the units (cc(STP) cm)/($m^2$ atm day). (*Id.*, col. 6:58-59) Then the catalyst deactivation factor ("CDF") was defined as: "(oxygen permeability of base polymer, oxidizable organic polymer, transition metal catalyst and 0.25 weight % colorant) / (oxygen permeability of base polymer and oxidizable organic polymer)." (*Id.*, col. 6:59-64) In other words, the CDF is the oxygen permeability of the activated polymer blend with 0.25 weight % colorant, expressed as a fraction of the oxygen permeability of the passive polymer blend without any colorant. A CDF of 1 corresponds to complete deactivation (such that the composition containing the active barrier and colorant has the same oxygen permeability as the passive barrier), whereas a CDF of 0 corresponds to no deactivation of the oxidation catalyst. (*Id.*, col. 6:65-67)

The '930 patent claims a melt blended resin, monolayer film or article comprising a base polymer, an oxidizable organic polymer, a transition metal catalyst, and a colorant. (*Id.*, col. 2:44-63) The colorant of the claimed invention has a CDF of less than about 0.25, preferably less than 0.15, more preferably less than 0.1, and most preferably less than 0.05. (*Id.*, abstract, col. 8:2-4) The blend may also optionally include a compatibilizer and other additives. (*Id.*, col. 2:47-48, 5:33-44) There is one independent claim among the asserted claims of the '930 patent:

1. A melted blended resin for packaging articles comprising:

a base polymer;

oxidizable organize polymer;

transition metal catalyst; and

a colorant;

such that an article made from said melt blended resin has a catalyst deactivation factor of less than 0.25, and further wherein said base polymer is selected from the gorup consisting of polyethylene, polyester, polyvinyl chloride, polyvinylidene chloride, ethylene copolymers, and blends thereof.

**D. The Accused Products**

Invista accuses M&G's PoliProtect APB[4] and PoliProtect JB[5] products (collectively, the "PoliProtect products"), resins sold in the form of pellets, of infringing the patents-in-suit. (*See* D.I. 42 at ¶ 12) The PoliProtect products are suitable for applications in food and beverage packaging. (D.I. 237 at PA284) Each pellet has a "passive barrier" inner layer, or core, made of nylon and an outer layer made of a copolyester with antimony, cobalt, phosphorus, lithium, and sulfur; the outer layer catalyzes the "activation" of the inner core into an "active" oxygen scavenging barrier. (*Id.* at PA151-54, PA251, PA264, PA283-85, PA453-54 86:13-87:13; D.I. 266 at 5, 12) M&G markets the bilayer feature of the PoliProtect products as BicoPET™ technology. (*See* D.I. 237 at PA151-53, PA251, PA264, PA283-85) The parties agree that the primary difference between PoliProtect APB and PoliProtect JB is the amount of oxidizable components in each (5.0 weight % in PoliProtect APB and 2.9 weight % in PoliProtect JB). (D.I. 232 at 9; 266 at 5)

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[4]The "APB" in the product name stands for "Active and Passive Barrier." (D.I. 237 at PA284)

[5]The "JB" in the product name stands for "Juice Barrier." (D.I. 237 at PA284)

## III. STANDARD

"The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The moving party bears the burden of demonstrating the absence of a genuine issue of material fact. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 415 U.S. 574, 586 n.10 (1986). A party asserting that a fact cannot be – or, alternatively, is – genuinely disputed must demonstrate such, either by citing to "particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for the purposes of the motions only), admissions, interrogatory answers, or other materials," or by "showing that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible evidence to support the fact." Fed. R. Civ. P. 56(c)(1)(A) & (B). If the moving party has carried its burden, the nonmovant must then "come forward with specific facts showing that there is a genuine issue for trial." *Matsushita*, 415 U.S. at 587 (internal quotation marks omitted). The court will "draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence." *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000).

To defeat a motion for summary judgment, the non-moving party must "do more than simply show that there is some metaphysical doubt as to the material facts." *Matsushita*, 475 U.S. at 586-87; *see also Podohnik v. U.S. Postal Serv.*, 409 F.3d 584, 594 (3d Cir. 2005) (stating party opposing summary judgment "must present more than

just bare assertions, conclusory allegations or suspicions to show the existence of a genuine issue") (internal quotation marks omitted). Although the "mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment," a factual dispute is genuine where "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 411 U.S. 242, 247-48 (1986). "If the evidence is merely colorable, or is not significantly probative, summary judgment may be granted." *Id.* at 249-50 (internal citations omitted); *see also Celotex Corp. v. Catrett*, 411 U.S. 317, 322 (1986) (stating entry of summary judgment is mandated "against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial").

**A. Infringement**

A patent is infringed when a person "without authority makes, uses or sells any patented invention, within the United States . . . during the term of the patent." 35 U.S.C. § 271(a). To prove direct infringement, the patentee must establish, by a preponderance of the evidence, that one or more claims of the patent read on the accused device literally or under the doctrine of equivalents. *See Advanced Cardiovascular Sys., Inc. v. Scimed Life Sys., Inc.*, 261 F.3d 1329, 1336 (Fed. Cir. 2001). A two-step analysis is employed in making an infringement determination. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995). First, the court must construe the asserted claims to ascertain their meaning and scope. *See id.* Construction of the claims is a question of law subject to de novo review. *See Cybor*

*Corp. v. FAS Techs.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998). The trier of fact must then compare the properly construed claims with the accused infringing product. *See Markman*, 52 F.3d at 976. This second step is a question of fact. *See Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998).

"Direct infringement requires a party to perform each and every step or element of a claimed method or product." *BMC Res., Inc. v. Paymentech, LP*, 498 F.3d 1373, 1378 (Fed. Cir. 2007). "If any claim limitation is absent from the accused device, there is no literal infringement as a matter of law." *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). If an accused product does not infringe an independent claim, it also does not infringe any claim depending thereon. *See Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989). However, "[o]ne may infringe an independent claim and not infringe a claim dependent on that claim." *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1359 (Fed. Cir. 2007) (quoting *Wahpeton Canvas*, 870 F.2d at 1552) (internal quotation marks omitted). A product that does not literally infringe a patent claim may still infringe under the doctrine of equivalents if the differences between an individual limitation of the claimed invention and an element of the accused product are insubstantial. *See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 24 (1997).

To establish indirect infringement, a patent owner has available two theories: active inducement of infringement and contributory infringement. *See* 35 U.S.C. § 271(b) & (c). To establish active inducement of infringement, a patent owner must show that an accused infringer "knew or should have known [its] actions would induce

actual infringements." *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006). To establish contributory infringement, a patent owner must show that an accused infringer sells "a component of a patented machine . . . knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use." *Golden Blount, Inc. v. Robert H. Peterson Co.*, 365 F.3d 1054, 1061 (Fed. Cir. 2004) (quoting 35 U.S.C. § 271(c)). Liability under either theory, however, depends on the patent owner having first shown direct infringement. *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 774 (Fed. Cir. 1993).

When an accused infringer moves for summary judgment of non-infringement, such relief may be granted only if one or more limitations of the claim in question does not read on an element of the accused product, either literally or under the doctrine of equivalents. *See Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1376 (Fed. Cir. 2005); *see also TechSearch, LLC v. Intel Corp.*, 286 F.3d 1360, 1369 (Fed. Cir. 2002) ("Summary judgment of non-infringement is . . . appropriate where the patent owner's proof is deficient in meeting an essential part of the legal standard for infringement, because such failure will render all other facts immaterial."). Thus, summary judgment of non-infringement can only be granted if, after viewing the facts in the light most favorable to the non-movant, there is no genuine issue as to whether the accused product is covered by the claims (as construed by the court). *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1304 (Fed. Cir. 1999).

**B. Invalidity**

### 1. Obviousness

"A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a). Obviousness is a question of law, which depends on underlying factual inquiries.

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

*KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966)).

"[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR*, 550 U.S. at 418. Likewise, a defendant asserting obviousness in view of a combination of references has the burden to show that a person of ordinary skill in the relevant field had a reason to combine the elements in the manner claimed. *Id.* at 418-19. The Supreme Court has emphasized the need for courts to value "common sense" over "rigid preventative rules" in determining whether a motivation to combine existed. *Id.* at 419-20. "[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Id.* at 420. In addition to showing that a person of

ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, a defendant must also demonstrate that "such a person would have had a reasonable expectation of success in doing so." *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007).

A combination of prior art elements may have been "obvious to try" where there existed "a design need or market pressure to solve a problem and there [were] a finite number of identified, predictable solutions" to it, and the pursuit of the "known options within [a person of ordinary skill in the art's] technical grasp" leads to the anticipated success. *Id.* at 421. In this circumstance, "the fact that a combination was obvious to try might show that it was obvious under § 103." *Id.*

A court is required to consider secondary considerations, or objective indicia of nonobviousness, before reaching an obviousness determination, as a "check against hindsight bias." *See In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1079 (Fed. Cir. 2012). "Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *John Deere Co.*, 383 U.S. at 17-18.

"Because patents are presumed to be valid, *see* 35 U.S.C. § 282, an alleged infringer seeking to invalidate a patent on obviousness grounds must establish its obviousness by facts supported by clear and convincing evidence." *Kao Corp. v. Unilever U.S., Inc.*, 441 F.3d 963, 968 (Fed. Cir. 2006) (citation omitted). In conjunction with this burden, the Federal Circuit has explained that,

> [w]hen no prior art other than that which was considered by the PTO examiner is relied on by the attacker, he has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents.

*PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1304 (Fed. Cir. 2008) (quoting *Am. Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1359 (Fed. Cir. 1984)).

**2. Written description**

The statutory basis for the enablement and written description requirements, 35 U.S.C. § 112 ¶1, provides in relevant part:

> The specification shall 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, or with which it is most nearly connected, to make and use the same . . . .

The written description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed." *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted) (internal quotation marks omitted). "In other words, the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Id.* (citations omitted). "The level of detail required to satisfy the written description requirement depends, in large part, on the nature of the claims and the complexity of the technology." *Streck, Inc. v. Research & Diagnostic Sys., Inc.*, 665 F.3d 1269, 1285 (Fed. Cir. 2012). Neither examples nor actual reduction to practice is required; "'a

constructive reduction to practice that in a definite way identifies the claimed invention can satisfy the written description requirement.'" *Id.* (quoting *Ariad*, 598 F.3d at 1352).

Defendants must ultimately prove that the written description fails these standards by clear and convincing evidence. *See PowerOasis*, 522 F.3d at 1307 (citing *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1072-73 (Fed. Cir. 2005)). While compliance with the written description requirement is a question of fact, it is "'amenable to summary judgment in cases where no reasonable fact finder could return a verdict for the nonmoving party.'" *Streck*, 665 F.3d at 1285 (quoting *PowerOasis*, 522 F.3d at 1307).

**3. Enablement**

The enablement requirement also comes from the language of 35 U.S.C. § 112, which requires the specification "to **enable** any person skilled in the art" to make and use the invention. (Emphasis added). The "enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation." *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1244 (Fed. Cir. 2003). As part of the bargain between the inventor and the public, "[t]he full scope of the claimed invention must be enabled." *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008). However, "[t]hat is not to say that the specification itself must necessarily describe how to make and use every possible variant of the claimed invention, for the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments, depending upon the predictability of the art." *AK Steel*,

344 F.3d at 1244; *see also Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1253 (Fed. Cir. 2004). As such, the specification does not need to include information that persons of ordinary skill in the art would already know. *Koito Mfg. Co. v. Turn-Key-Tech, LLC*, 381 F.3d 1142, 1156 (Fed. Cir. 2004).

Whether a claim satisfies the enablement requirement is a question of law based on underlying facts. *See Sitrick*, 516 F.3d at 999. Defendants carry the burden of proving that the specification fails to meet the enablement requirement by clear and convincing evidence. *See id.*

#### 4. Indefiniteness

The second paragraph of 35 U.S.C. § 112 provides that "the specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." The Federal Circuit has set forth the test for indefiniteness as follows: "If one skilled in the art would understand the bounds of the claim when read in light of the specification, then the claim satisfies section 112 paragraph 2." *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001). The issue of indefiniteness presents a question of law, and the defendant bears the burden of proof by clear and convincing evidence. *Id.* at 1376.

## IV. DISCUSSION

### A. Infringement

### 1. Direct infringement of the '159 and '216 patents[6]

Invista moves for summary judgment of direct infringement of the '159 and '216 patents,[7] and M&G cross-moves for no direct infringement. The court begins by comparing the PoliProtect products to the "composition" limitation of the '159 and '216 patents.

The court has construed "composition" to mean "a blend that contains the specified ingredients at any time from the moment the ingredients are mixed together." The undisputed facts show that the PoliProtect products are manufactured as pellets that have an inner core made of a partially aromatic polyamide, which constitutes a passive barrier, and an outer layer made of various components that activate the inner core's passive barrier. Invista's expert, Dr. Turner, does not dispute that the components of the PoliProtect products are separated into different layers. (D.I. 237 at PA53 ¶¶ 151-52, PA 87-88 ¶¶ 307-08) Nevertheless, he opines that the PoliProtect

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[6]In its combined surreply and reply brief on summary judgment of infringement, M&G argues that Invista failed to provide any admissible expert testimony in support of its direct infringement claims because Dr. Turner's expert reports were unsworn. (D.I. 315 at 5-6) (citing *Rockwell Techs., LLC v. Spectra-Physics Lasers, Inc.*, Civ. No. 00-589, 2002 WL 523390, at *3 (D. Del. Apr. 8, 2002)) In *Fowle v. C & C Cola*, 868 F.2d 59, 67 (3d Cir. 1989), the Third Circuit found an unsworn expert report to be inadmissible on summary judgment for not complying with Federal Rule of Civil Procedure 56. The Court cautioned that "evidence should not be excluded on summary judgment on hypertechnical grounds" but emphasized that the plaintiff in that case "did nothing to correct the error before [the district court]." *Id.* Here, Invista has corrected the error – Dr. Turner filed a declaration on April 18, 2013, affirming that his opening and rebuttal reports, in their entirety, were made under oath. (D.I. 319) Moreover, there is no surprise to M&G. The expert reports were produced, marked at depositions, and incorporated into interrogatory responses, and Dr. Turner gave sworn deposition testimony regarding them. (*See* D.I. 368 at 88:19-22) Therefore, the court will consider Dr. Turner's expert reports as competent evidence on summary judgment.

[7]Invista does not allege direct infringement of the '930 patent. (D.I. 7)

products still literally meet the "composition" limitation because they are "mixtures" of passive and active barriers into one pellet, wherein the nylon core is the passive barrier and the components for the active barrier are in the outside layer. (*Id.* at PA26 ¶ 69, PA52 ¶¶ 149-52, PA87-88 ¶¶ 305-08)

Dr. Turner avers that M&G markets its PoliProtect products as "mixes" of active and passive barriers. (*Id.* at PA26 ¶ 69) The M&G documents that he cites state that the PoliProtect products use BicoPET™ technology, which "allows to mix in a single chip the active barrier and the passive barrier." (*Id.* at PA283, PA305) The documents appear to be directed to the fact that the bilayer PoliProtect products allow one to combine the passive and active barriers when the pellets are mixed in order to form preforms or bottles. Even if the documents refer to the PoliProtect products being a "mix" of passive and active barriers, they do not meet the court's construction of "composition." A "composition" requires that all of the ingredients are mixed together in a blend; co-existing layers or barriers containing subsets of the ingredients do not meet the court's construction. Under the court's claim construction and the undisputed facts, the PoliProtect products do not practice the "composition" limitation of the '159 and '216 patents.

Invista also contends that the parties dispute whether there may be some mixing at the interface between the layers of the PoliProtect products. (D.I. 298 at 5) It argues that M&G's expert, Dr. Moore, "did not test, and does not know, whether any mixing occurs at the interface of the two layers of the PoliProtect pellets." (*Id.* at 5-6) Invista offers no affirmative evidence or expert testimony that any mixing occurs at the

interface between the layers of the PoliProtect products. In fact, it characterizes the testimony of its expert, Dr. Turner, as "establish[ing] nothing more than the [PoliProtect] Products are comprised of two layers, and the composition of those layers – not that there is no mixing between the layers." (*Id.* at 5) Therefore, Invista attempts to create a material issue of fact to preclude summary judgment by relying on M&G's lack of evidence regarding mixing at the interface. However, Invista carries the burden of showing infringement. As Invista has not identified any evidence of mixing between the layers of the PoliProtect products, it fails to establish a material factual dispute regarding mixing to preclude summary judgment of no direct infringement.

Because the PoliProtect products do not practice the "composition" limitation of the '159 and '216 patents, the court's infringement inquiry on summary judgment ends here. The court grants summary judgment of no direct infringement of the '159 and '216 patents.

**2. Indirect infringement of the '216 patent**

Although the court has found that M&G does not directly infringe the '216 patent, Invista avers that summary judgment of indirect infringement is nonetheless appropriate because M&G's customers necessarily infringe. Invista asserts that M&G's customers take the PoliProtect products and melt blend them in the process of stretch blow molding preforms and bottles, thereby meeting the "composition" limitation. (D.I. 232 at 36-37) Invista further asserts that M&G meets the requisite knowledge for indirect infringement, at least after the filing of this lawsuit. M&G cross-moves for summary judgment of no indirect infringement of the '159 and '216 patents.

Invista contends that M&G sells its PoliProtect products to customers in the United States, who then melt them down in the process of making plastic containers or bottles. Invista supports its argument by citing M&G's sales spreadsheets listing sales of the PoliProtect products to U.S. customers, as well as an M&G interrogatory response stating that the PoliProtect products are "used in the manufacturing of PET barrier bottles." (*See* D.I. 237 at PA 198, PA233-39, PA397, PA460) Deposition testimony indicates that M&G customers "take the pellets and . . . dry them, and then . . . injection-mold them into whatever . . . article . . . they want to make," including preforms for bottles. (*Id.* at PA454-55 87:24-88:9; *see also id.* at PA458 97:5-19) M&G also allegedly provides instructions for molding and stretch blow molding in the data sheets for the PoliProtect products. (*See id.* at PA252, PA265)

On summary judgment, M&G is careful to avoid stating that its PoliProtect products are used for making any articles, such as food or beverage packaging or preforms for bottles. It attempts to rebut Invista's arguments by averring that Invista relies upon speculation and conjecture as to what M&G's customers do with the PoliProtect products. (D.I. 266 at 39) In particular, it asserts that the testimony of Invista's expert, Dr. Turner, was based on his belief and not any firsthand knowledge of facts because he was not privy to customer interactions with M&G. (*Id.*) (citing D.I. 267, ex. E at 140:24-144:11)

The only reasonable inference from the evidence of record is that M&G's customers mix the components of the pellets into blends to make their desired articles.[8]

[8]Accordingly, third parties also practice the "article" limitation of dependent claims 12 of the '216 patent, wherein "said article is a preform or a container."

In the absence of any contrary evidence, the court finds that M&G has not raised a genuine issue of material fact as to whether its customers mix the components of the PoliProtect products together, and thereby necessarily practice the "composition" limitation.

Having determined that M&G's customers practice the "composition" limitation, the court next determines whether there is actual infringement of the remaining limitations of the '216 patent. As a threshold matter, M&G asserts that Invista cannot rely on M&G's core technical documents to prove the contents of the PoliProtect products. (*Id.* at 25-27; D.I. 315 at 7-8) The court has addressed this argument, which M&G raised for the first time on summary judgment briefing, in a separate memorandum order and has found that M&G's argument is impermissible as untimely and prejudicial. Therefore, Invista's reliance on M&G's core technical documents for the components of the PoliProtect products is appropriate, with the exception of arguments relating to specifics of the manufacturing process that M&G timely disclosed. (*See, e.g.*, D.I. 237 at PA160-62, PA165-66) As M&G confirmed to the court, its non-infringement defenses are premised on its proposed claim construction. (*Id.* at PA426-27)

**a. "Partially aromatic polyamide"**

The parties agree that "partially aromatic polyamide" means "a polyamide that contains at least one aromatic ring and a non-aromatic species in the polymeric backbone." (D.I. 209) M&G does not contest that MXD6, Mitsubishi 6007 Nylon, or Ultramid X17 Nylon, found in the core of the PoliProtect products, is a "partially

aromatic polyamide" under the parties' agreed construction. (*See* D.I. 232 at 29; D.I. 266) Specifically, the core technical documents reflect that PoliProtect APB contains between 4.9 and 5.1 weight % Ultramid X17 Nylon, and PoliProtect JB contains between 2.4 to 3.4 weight % Mitsubishi 6007 Nylon or Ultramid X17 Nylon. (D.I. 237 at PA255, PA259) As M&G offers no evidence to the contrary, the PoliProtect products also practice dependent claim 2 of the '216 patent, which requires partially aromatic polyamide "present in a range from about 1 to about 10 wt. %." In addition, M&G does not dispute that MXD6 is a meta-xylylene adipamide (*see* D.I. 266 at 3), as required by dependent claim 5 of the '216 patent. Finally, there is no dispute that the metal sulfonate salt (as identified *infra*) of the PoliProtect products is attached to sulfoisophthalic acid, which is one of the recited aromatic acid nuclei recited by dependent claim 9. Accordingly, the court finds that the PoliProtect products practice the "partially aromatic polyamide" limitation of all asserted claims of the '216 patent.

**b. "Metal sulfonate salt"**

According to the core technical documents and Dr. Moore's expert opinions, the PoliProtect products contain lithium sulfoisophthalic acid ("LiSIPA"). (*See, e.g.*, D.I. 237 at PA153, PA155, PA161, PA248, PA250, PA255, PA259) M&G's non-infringement argument for the "metal sulfonate salt" limitation relies on its construction that a "metal sulfonate salt" cannot contain a lithium salt.[9] The court, however, has not embraced

[9]Dr. Moore, in his expert reports, also avers that LiSIPA, by itself (i.e., "in its monomer form"), cannot be the "ionic compatibilizer" limitation of the '159 patent. (D.I. 237 at PA155-60) However, he does not opine that it cannot be the "metal sulfonate salt" limitation of the '216 patent under the court's construction. (*See* D.I. 237 at PA164-67)

M&G's proposed construction for this limitation and has instead construed "metal sulfonate salt" to be "a salt of sulfonic acid wherein the cation is a metal ion." Dr. Moore concedes that lithium is the metal ion in LiSIPA, and there remains no material dispute of fact that LiSIPA is a "metal sulfonate salt," as construed by the court. (*See id.* at PA166)

The PoliProtect products also meet dependent claim 3 of the '216 patent, which recites metal sulfonate salt "present in a range from about 0.1 to about 2.0 mole %" because the core technical documents indicate that PoliProtect APB contains 0.4 mole % LiSIPA functional groups and that PoliProtect JB contains 0.28 mole % LiSIPA functional groups; M&G offers no evidence to the contrary. (*See id.* at PA248, PA250) Moreover, because it is not disputed that the metal ion in LiSIPA is lithium, the PoliProtect products also practice dependent claim 8 of the '216 patent, which recites a group of metal ions, including Li+. Therefore, there is no genuine issue of material fact, under the court's claim construction, that the LiSIPA in the PoliProtect products meet the "metal sulfonate salt" limitation of all the asserted claims of the '216 patent.

**c. "Copolyester comprising a metal sulfonate salt"**

The court has construed "copolyester comprising a metal sulfonate salt" to mean "a copolyester including, but not limited to, a metal sulfonate salt." There is no dispute that the outer layer of the PoliProtect products is made of a copolyester with, among other things, LiSIPA, which is a metal sulfonate salt.[10] (*See* D.I. 266 at 19) M&G has

[10]Specifically, the copolyester is EG/DEG-TPA/IPA/LiSIPA copolyester, or a copolyester synthesized from the monomers ethylene glycol, diethylene glycol, terephthalic acid, isophthalic acid, and bis(2-hydroxyethyl) 5-lithiosulfoisophthalate. (*See* D.I. 237 at PA29, PA255, PA259; D.I. 266 at 19)

not asserted any non-infringement argument under a construction that does not require the metal sulfonate salt to be unattached from the copolyester or roaming freely in the mixture. (*See id.* at 27-28; D.I. 237 at PA166-67) Accordingly, there is no genuine issue of material fact that the copolyester with LiSIPA (the "LiSIPA-containing copolyester") in the PoliProtect products meets the "copolyester comprising a metal sulfonate salt" limitation.

**d. "Cobalt salt"**

The parties do not dispute that cobalt neodeconate is added during the manufacturing process of the PoliProtect products. (D.I. 237 at PA248, PA250, PA255, PA259; D.I. 266 at 19-20) M&G's proposed construction for "cobalt salt" would have limited a "cobalt salt" to four specific cobalt salts and excluded cobalt neodeconate. (*See* D.I. 209) The court has not embraced M&G's proposed construction and has construed "cobalt salt" to be "a salt wherein the cation is cobalt." Under this construction, there is no genuine dispute of fact that cobalt neodeconate is a "cobalt salt." (*See* D.I. 237 at PA33-34; D.I. 266 at 20)

M&G argues that at no time during or after the manufacturing process does the cobalt neodeconate exist together with the copolyester and partially aromatic polyamide components. (D.I. 266 at 20) Specifically, Dr. Moore avers in his expert report that, after the cobalt neodeconate salt is added during manufacturing (and before the partially aromatic polyamide is added), the cobalt neodeconate complexes with the copolyester such that it no longer exists separately in the mixture. (D.I. 237 at PA166) However, even if true, Dr. Moore testified at his deposition that he has no opinion

regarding whether **all** of the cobalt neodeconate complexes:

> Q. Is it your opinion that when cobalt salt is added to the PoliProtect [products], all of the cobalt salt complexes with the copolyester?
>
> A. I've never tested the complexation of the cobalt salt to the copolyester, so I can't speculate on that.
>
> Q. So you don't have an opinion as to whether all the cobalt salt complexes with the copolyester or not in the M&G products?
>
> A. I don't have an opinion about the cobalt – all of the cobalt salt being complexed.
>
> Q. Is it your opinion that some of the cobalt salt is complexed?
>
> A. It's my opinion that could be quite likely.
>
> Q. Do you know how much of the cobalt salt is complexed?
>
> A. I have not tested that.

(*Id.* at PA514-15 129:22-130:15)

Essentially, Dr. Moore has testified that he cannot tell how much cobalt neodeconate is left in the PoliProtect products. As there is no dispute that cobalt neodeconate is added as an ingredient, M&G has no evidence that could lead a reasonable jury to conclude that there is not at least some trace amount of cobalt salt left in the final PoliProtect products, even if some of it complexes. Therefore, the "cobalt salt" limitation of independent claim 1 is met.

On the other hand, a material issue of fact remains regarding infringement of claim 4 of the '216 patent, which recites a limitation wherein the cobalt salt is present in the range of about 20 to about 500 ppm. The only documentary evidence regarding the composition of the PoliProtect products shows that 115 to 125 ppm of cobalt

neodeconate is added to make PoliProtect APB and that 88 to 108 ppm of cobalt neodeconate is added to make PoliProtect JB. (*See id.* at PA255, PA259) In light of Dr. Moore's opinion that it is probable that some amount of the cobalt neodeconate reacts, the court finds that there remains a genuine issue of material fact regarding whether at least about 20 ppm of cobalt neodeconate is left in the PoliProtect products.

In sum, the court finds actual infringement by M&G's customers of all asserted claims[11] of the '216 patent except claim 4, which recites a range of cobalt salt.

**e. Contributory infringement**

With respect to contributory infringement under 35 U.S.C. § 271(c), Invista must demonstrate that M&G sells "a component of a patented machine . . . knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use."[12] *Golden Blount*, 365 F.3d at 1061 (internal quotation marks omitted). The parties do not dispute that M&G had knowledge of the '216 patent at least from the filing of this lawsuit.[13]

With respect to no substantial noninfringing use, Invista argues that M&G's core

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[11]Specifically, claims 1-3, 5, 8, 9, and 12 of the '216 patent.

[12]Intent to cause infringement is not a requirement of contributory infringement under 35 U.S.C. § 271(c). *See Hewlett-Packard Co. v. Bausch Lomb Inc.*, 909 F.2d 1464, 1469 (Fed. Cir. 1990) ("Section 271(c) . . . made clear that only proof of a defendant's knowledge, not intent, that his activity cause infringement was necessary to establish contributory infringement.").

[13]Invista points to internal M&G communications to assert that M&G also had knowledge of the patents-in-suit before the suit was filed, but it is not moving for summary judgment of indirect infringement based on M&G's alleged pre-suit knowledge. (D.I. 232 at 15-16, 35 & n.29)

technical documents describe only one use – making food and beverage containers – for the PoliProtect products: the "PoliProtect [products] [are] designed to provide highly desirable container properties" (D.I. 237 at PA251, PA264); the "PoliProtect [products] [are] suitable for the manufacture of articles for numerous food packaging applications."[14] (*Id.* at PA252, PA265) Invista contends that the bilayer feature of the PoliProtect products, touted in marketing materials, is specifically targeted to making preforms or bottles. The bilayer technology simplifies the article-production process by combining the components into one product that can be fed into the injection molding machine, which mixes the components together. (*See id.* at PA439 111:11-113:2, PA454 87:8-12, PA455 88:5-9) In addition, an M&G powerpoint illustrates that the bi-layer feature allows the PoliProtect products' "[b]arrier [to become] active only when bottles are blown . . . ." (*Id.* at PA381) Thus, the PoliProtect products are designed with the intent that the components in the two layers be mixed together such that the inner layer "activates" the barrier of the outer layer. According to the evidence, this is the only way for the active barrier of the PoliProtect products to be activated.

M&G offers no evidence to rebut Investa's arguments that the PoliProtect products are **not** staple articles of commerce that are suitable for noninfringing uses.[15]

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[14]An M&G powerpoint also states that PoliProtect APB "guaranties a high active barrier associated with the necessary passive barrier for the following applications: Juices, smoothies, juice based products, [b]eer, wine, [m]ilk and dairy products, [and] [f]ood applications (ketchup, salad dressing, etc . . .)" and that PoliProtect JB "suits particularly products that need medium active barrier: [j]uices, smoothies, fruit based beverages, and [f]ood applications (ketchup, salad dressing, etc . . . )." (D.I. 237 at PA284)

[15]M&G only argues that Invista's assertions are conclusory. (*See* D.I. 266 at 40) The court finds that Invista's assertions are supported by citations to the record.

(D.I. 266 at 40-41) Therefore, there is no genuine issue of material fact as to whether the only "practical or worthwhile" use of the PoliProtect products is for them to be melted and made into articles, such as preforms, bottles, or containers. *See i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 851 (Fed. Cir. 2010).

**f. Active inducement of infringement**

M&G may be liable for induced infringement under 35 U.S.C. § 271(b) if it had specific intent to cause infringement of the '216 patent by the manner in which the PoliProtect products are used. *Ricoh Co. v. Quanta Computer Inc.*, 550 F.3d 1325, 1340, 1343 (Fed. Cir. 2008). "[S]pecific intent may be inferred from circumstantial evidence where a defendant has both knowledge of the patent and specific intent to cause the acts constituting infringement." *See id.* at 1342. The Federal Circuit has recognized that "providing instruction on how to engage in an infringing use 'show[s] an affirmative intent that the product be used to infringe.'" *Id.* at 1343 (quoting *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 936 (2005)) (alteration in original).

There can be no dispute that M&G knew about the '216 patent no later than the filing of this suit. In addition, M&G advertised an infringing use, in the sense that the bilayer feature of the PoliProtect products is only advantageous when the layers are mixed. As discussed, Invista has established on the summary judgment record that the PoliProtect products have no substantial noninfringing use. "While selling a potentially infringing product where each component part thereof has a substantial lawful use may well be 'equivocal,' it is entirely appropriate to presume that one who sells a product

**containing a component that has no substantial noninfringing use** in that product does so with intent that the component will be used to infringe." *Ricoh*, 550 F.3d at 1338. Therefore, Invista has demonstrated on summary judgment that M&G had specific intent to cause infringement at least after the filing of this lawsuit.

#### g. Conclusion regarding indirect infringement of the '216 patent

In light of the foregoing, the court finds that Invista has sufficiently established both induced infringement and contributory infringement of claims 1-3, 5, 8, 9, and 12 of the '216 patent for the time period following commencement of this suit. The court grants Invista's motion for summary judgment of infringement in this regard.

### 3. Indirect infringement of the '159 patent

In contrast, the court does not enter summary judgment regarding indirect infringement of the '159 patent because whether the PoliProtect products practice the "polyester" limitation of the '159 patent remains a disputed question of fact. Invista's argument for literal infringement of that limitation is based on the LiSIPA-containing copolyester of the PoliProtect products meeting both the "polyester" and "ionic compatibilizer" limitations of the '159 patent. M&G does not dispute that the LiSIPA-containing copolyester in the PoliProtect products meet the "ionic compatibilizer" limitation of the '159 patent. (*See* D.I. 232 at 10, 13) The court's construction of "polyester," however, requires the "polyester" and "ionic compatibilizer" components to be separate and distinct. Under this construction, the LiSIPA-containing copolyester of the PoliProtect products cannot also literally practice the "polyester" limitation.

Invista's expert, Dr. Turner, opines that the LiSIPA-containing copolyester of the

PoliProtect products still meets the "polyester" limitation of the '159 patent under the doctrine of equivalents. Specifically, he opines that combining a LiSIPA-containing copolyester (an "ionic compatibilizer") and a base polymer (a "polyester") forms the same copolymer as the LiSIPA-containing copolyester of the PoliProtect products. (D.I. 237 at PA55) Therefore, Dr. Turner asserts that the LiSIPA-containing copolyester of the PoliProtect products is insubstantially different and performs the same function as the separate and distinct "polyester" and "ionic compatibilizer" components.

M&G argues that Invista is simply trying to overcome the fact that an element is literally missing from the PoliProtect products. (D.I. 232 at 29) However, the Federal Circuit has held that the doctrine of equivalents may be applicable even when its application would vitiate the requirement that two components be separate elements. *Brilliant Instruments, Inc. v. GuideTech, LLC*, 707 F.3d 1342, 1346-47 (Fed. Cir. 2013). Rather, to find infringement under the doctrine of equivalents, any differences between the claimed invention and the accused product must be insubstantial. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950). "One way of proving infringement under the doctrine of equivalents is to show, for each claim limitation, that the accused product 'performs substantially the same function in substantially the same way with substantially the same result as each claim limitation of the patented product.' This is a question of fact." *Brilliant Instruments*, 707 F.3d at 1347 (citing *Crown Packaging Tech., Inc. v. Rexam Beverage Can Co.*, 559 F.3d 1308, 1312 (Fed. Cir. 2009)).

Invista offers expert testimony that the differences between the claimed invention

of the '159 patent and the PoliProtect products are insubstantial, while M&G offers testimony that they are not insubstantially different. The court finds that Invista has a raised a genuine issue of material fact under the doctrine of equivalents regarding the "polyester" limitation of the '159 patent, thus precluding summary judgment of indirect infringement of the '159 patent.

**4. Indirect infringement of the '930 patent**

With respect to the '930 patent, M&G moves for summary judgment of no indirect infringement, based on three arguments.[16] First, it avers that Invista has no evidence that the PoliProtect products include the requisite "base polymer." (D.I. 266 at 33-34) Second, M&G finds fault with Invista's evidence that the PoliProtect products meet the "catalyst deactivation factor of less than 0.25" limitation. Third, M&G asserts that Invista offers no evidence that M&G adds a colorant to the "final" PoliProtect products. (*Id.* at 36-37) For the reasons below, the court finds that questions of fact preclude the entry of summary judgment of no indirect infringement of the '930 patent.

**(1) "A base polymer"**

The court has found that no construction of "a base polymer" is required. Specifically, the court declined to adopt M&G's proposed construction that "a base polymer" must not contain an ionic compatibilizer. As M&G's non-infringement argument for this limitation depends on the court's adoption of its proposed limitation (*see id.* at 33-34), it raises no genuine issue of material fact, under the court's construction, that the LiSIPA-containing polyester component of the PoliProtect

[16]Invista does not move for summary judgment of indirect infringement of the '930 patent. (*See* D.I. 232)

products meets the "base polymer" limitation of the '930 patent.

**(2) "Catalyst deactivation factor of less than 0.25"**

Furthermore, M&G argues that Invista did not conduct testing on the PoliProtect products to determine if they meet the CDF limitation of the '930 patent and that the evidence that Invista offers regarding the limitation is not admissible. (*Id.* at 34-36) Invista supports its accusation that the PoliProtect products have a CDF that is less than 0.25 by offering Dr. Turner's calculation of CDF from oxygen permeation tests for bottles made with PolyShield® resin (which is an Invista product), PET, MXD6, and a colorant called PolyOne Amber 64743. (D.I. 298 at 25) Dr. Turner's testing found that bottles made with PolyShield®, MXD6, and PolyOne Amber 64743 had a permeation rate of 0.005 $cm^3/m^2/day/bar$, compared to 4.43333 $cm^3/m^2/day/bar$ for bottles made with PET and MXD6.[17] (D.I. 237 at PA111 ¶ 419) Applying the definition of CDF that is taught in the '930 patent and that the parties have agreed upon, Dr. Turner found that the CDF was 0.001. (*Id.* at PA110-11 ¶¶ 417, 419) He then opined that "[b]ecause PoliProtect has the same composition as PolyShield, for all relevant purposes, and any differences between the products would not impact the catalyst deactivation factor, [the] PoliProtect [products] also will have a catalyst deactivation factor of 0.001, which is less than 0.25, when Poly[O]ne Amber 64743 is added." (*Id.* at PA111 ¶ 420) Dr. Turner

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[17]Dr. Turner's report referred to the 4.3333 $cm^3/m^2/day/bar$ oxygen permeability rate of bottles made with "PolyShield and MXD6" for the denominator of the CDF calculation. (D.I. 237 at PA111 ¶ 419) However, as Invista points out, Dr. Turner's reference seems to have been an inadvertent error. (D.I. 298 at 26) The source document that Dr. Turner cites to shows that the 4.43333 $cm^3/m^2/day/bar$ oxygen permeability rate was taken from a bottle made with PET, not PolyShield®, and 5% weight MXD6 passive barrier sample. (*See* D.I. 299 at PA 676)

also opined that he used PolyOne Amber 64743 in his testing because that colorant is on a 2011 list of M&G's approved colorants for use with the PoliProtect products. (*Id.* at PA111-12 ¶¶ 416, 420)

M&G argues that Dr. Turner's methodology for calculating the CDF was improper because it compares Invista's commercial product (PolyShield®), rather than M&G's PoliProtect products, to the claims of the '930 patent. (D.I. 266 at 35-36) Given Dr. Turner's opinion that the CDF value he found was applicable to the PoliProtect products,[18] his analysis and testimony constitutes circumstantial evidence for comparing the PoliProtect products to the claims of the '930 patent. Contrary to M&G's assertions, such evidence is probative of infringement and would be appropriate for the fact-finder to weigh.

M&G further asserts that Invista's theory that the PoliProtect products meet the CDF limitation of the '930 patent inappropriately relies on Fibox testing. (*Id.* at 34-35) M&G avers, and Invista does not dispute, that Fibox testing measures oxygen concentrations, not oxygen permeation rates. (*Id.* at 34; D.I. 298 at 26-27) However, Invista's expert, Dr. Turner, did not rely on any Fibox data in his CDF calculation. (*See* D.I. 237 at PA111-12 ¶¶ 418-23) He only stated that M&G uses Fibox testing to determine whether a colorant deactivates oxygen scavenging and that M&G's marketing materials indicate virtually no change in oxygen concentration after 100 hours, which indicates a very low oxygen permeation rate. (*Id.* at PA28 ¶ 75, PA44-45

[18]Based on the fact that the PoliProtect products had, for all relevant purposes, the same composition as PolyShield® and because PolyOne Amber 64743 is at least one of the colorants that M&G has allegedly approved for use with those products. (D.I. 237 at PA111-12 ¶¶ 416, 420)

¶ 124) In other words, Dr. Turner's opinions regarding how M&G used Fibox testing is entirely separate from the CDF testing that he points to as evidence that the PoliProtect products meet the CDF limitation of the '930 patent. Therefore, the court does not find that Dr. Turner's citation of Fibox data militates a summary judgment finding of no indirect infringement. Dr. Turner's opinions and evidence regarding the CDF limitation demonstrate that there are genuine issues of material fact regarding M&G's indirect infringement of the '930 patent.

**(3) "Colorant"**

Finally, M&G argues that Invista has no evidence that M&G adds colorants to the PoliProtect products. (D.I. 266 at 36-37) This argument is irrelevant because Invista alleges that M&G's **customers**, not M&G itself, add colorants to the PoliProtect products. (*See* D.I. 237 at PA43-46 ¶¶ 120-26; PA109-10 ¶¶ 411-14; D.I. 298 at 27-28)

In sum, Invista has offered evidence that creates genuine issues of material fact which preclude the entry of a summary judgment of no indirect infringement of the '930 patent. Invista has offered evidence that there is actual infringement of the "base polymer," "catalyst deactivation factor of less than 0.25," and "colorant" limitations. Therefore, the court denies M&G's motion for summary judgment in this regard.

**B. Invalidity**

M&G next moves for summary judgment of invalidity as to all asserted claims of the patents-in-suit. (D.I. 233) Specifically, it contends that the asserted claims of the '159 and '216 patents are invalid as being obvious and for failing to comply with the written description and enablement requirements of 35 U.S.C. § 112. (D.I. 234 at 9-34)

Invista cross-moves for partial summary judgment that all asserted claims of the '159 and '216 patents are not obvious and that those claims enable the use of metal sulfonate salts. (D.I. 263 at 52) Regarding the '930 patent, M&G argues that the asserted claims are invalid for failing to comply with the written description, enablement, and indefiniteness requirements of 35 U.S.C. § 112. (D.I. 234 at 34-39) Invista cross-moves for summary judgment that the asserted claims of the '930 patent are valid for satisfying those requirements of 35 U.S.C. § 112. (D.I. 263 at 52) For the reasons below, the court will deny M&G's motion and grant Invista's motion in part, insofar as M&G raises untimely theories of invalidity regarding the '159 and '216 patents.

**1. The '159 and '216 patents**

**a. Obviousness**

M&G asserts that the '159 and '216 patents are obvious in light of two prior art references: (1) PCT Publication No. WO 91/17925 ("the '925 reference"), titled "Container and a Process for Its Production" and published on November 28, 1991; and (2) a paper authored by Dr. Moore ("the Moore reference"), titled "Polyester Ionomers in Binary and Compatibilized Blends with Poly(Ethylene Terephthalate), Poly(Butylene Terephthalate) and Nylon 6,6" and published in 2001. (D.I. 234 at 8-9, 21-34) M&G contends that the two references, together, disclose all of the limitations of the '159 and '216 patents. (*Id.* at 21-32) It further asserts that one of ordinary skill in the art would have found it obvious to combine them. (*Id.* at 21-22, 33-34)

Invista contends that M&G's expert, Dr. Moore, never addressed the combination of the '925 and Moore references in his expert reports and that M&G disclosed its

obviousness argument based on this combination of references for the first time during summary judgment briefing, namely in its reply brief for invalidity. (*See* D.I. 263 at 16-20) In his invalidity expert reports, Dr. Moore opined on anticipation by the '925 reference, but the only mention of the Moore reference was in an exhibit with 56 pages of possible prior art references for the '159 and '216 patents. (*See* D.I. 235, ex. I at 32; *see also id.*, ex. I at ex. C) Dr. Moore identified fourteen combinations of references in his obviousness analysis but did not address the combination of the '925 and Moore references. (*Id.*, ex. I at 31-37)

M&G's reply brief in support of its motion for summary judgment of invalidity (D.I. 303) does not respond to Invista's argument that M&G's argument is unsupported by expert testimony. Instead, M&G attempts to support its obviousness theory with new expert testimony submitted in a declaration ("Dr. Moore's new declaration") attached to its reply brief. (*See* D.I. 304) As explained in a separate memorandum order, however, the court has stricken, at Invista's request, the new opinions in Dr. Moore's new declaration for being an untimely and prejudicial supplementation.

Without the support of Dr. Moore's new declaration, M&G's obviousness argument is unsupported by expert testimony. Although M&G cites sections 6.3 and 6.5 of Dr. Moore's opening report and section 7.5 of his reply report, those sections discuss the '925 reference without mentioning the Moore reference. (*See* D.I. 235, ex. I; D.I. 236, ex. K) M&G's other citations are to generic language and the long disclosure of various possible prior art references in Dr. Moore's expert reports. M&G also includes a table in its opening brief which compares each claim limitation to the

'925 and Moore references (D.I. 234 at 23-32), but that table had never been previously disclosed to Invista either. (D.I. 263 at 18)

Therefore, M&G has no expert testimony regarding the combination of the '925 and Moore references. M&G tries to remedy this deficiency by repeatedly asserting that the '925 and Moore references are "simple pieces of prior art directed to barrier resins." (D.I. 234 at 21; D.I. 303 at 3) However, the field of polymer chemistry is a complex area of technology, and where patent claims involve complex issues of technology, expert testimony is required to aid the fact finder. *See Proveris Scientific Corp. v. Innovasystems, Inc.*, 536 F.3d 1256, 1267-68 (Fed. Cir. 2008); *Allergan, Inc. v. Barr Labs., Inc.*, 808 F. Supp. 2d 715, 735-36 & n.21 (D. Del. 2011), *aff'd*, 501 F. App'x 965 (Fed. Cir. 2013). Without expert testimony that the combination of the '925 and Moore references was obvious, M&G cannot carry its burden of clear and convincing evidence for obviousness. Therefore, the court grants Invista's motion for partial summary judgment of validity on this ground.

**b. Lack of written description and non-enablement**

**(1) Lack of enablement of the metal sulfonate salts**

M&G also moves for summary judgment of invalidity on grounds of non-enablement because the inventors of the '159 and '216 patents "did not provide any meaningful disclosures, teachings, or supportive data" in the specification for metal sulfonate salts besides sodium (Na+) and zinc (Zn++). (D.I. 234 at 18) The asserted independent claims of the '159 and '216 patents recite the "metal sulfonate salt" limitation, which the court has construed to mean "a salt of sulfonic acid wherein the

cation is a metal ion." Asserted dependent claims 9 and 21 of the '159 patent and dependent claim 8 of the '216 patent recite the specific metal sulfonate salts Na+, Li+, K+, Zn++, Mn++, and Ca++. Although the specification states that "[t]he metal ion of the sulfonate salt may be Na+, Li+, K+, Zn++, Mn++, Ca++ and the like" ('216 patent, col. 4:65-67), M&G argues that the specification only discloses test data for the Na+ and Zn++ metal ions. (*See, e.g.*, *id.*, col. 10:62-11:12) In addition, M&G avers that the inventors could not confirm that they tested any metal ions other than Na+ and Zn++ and that there is a substantial difference in using Li+ rather than Na+ or Zn++ ions.[19] (D.I. 234 at 18-19) (citing D.I. 236, ex. R at 20:8-21:3, ex. S at 46:9-47:2, ex. T at 24:19-26:4, 79:13-20; D.I. 237 at PA153 n.4)

As a threshold issue, Invista avers that M&G, again, never presented this defense in its invalidity contentions or expert reports. (D.I. 263 at 35) The court finds otherwise, as Invista was on notice of M&G's position with respect to the metal sulfonate salts no later than the claim construction briefing. During claim construction, M&G asserted that the "metal sulfonate salt" limitation should be limited to only the Na+ and Zn++ ions for substantially the same reasons it proffers for its non-enablement argument. In particular, it argued that the disclosure of only Na+ and Zn++ was insufficient and that "a person reviewing the intrinsic record would not understand that the inventors had made a generic invention that applied to all metals." (D.I. 230 at 14-

[19]M&G cited to Dr. Moore's opening invalidity report for its assertion that there is a substantial difference in using Li+ rather than Na+ or Zn++. (*See* D.I. 234 at 18) (citing D.I. 235, ex. I at 24 n.4) However, as Invista notes, M&G appears to have meant to cite to Dr. Moore's non-infringement report. (*See* D.I. 263 at 33 n.18; *see also* D.I. 237 at PA153 n.4)

16) Therefore, the court does not find that M&G has waived its right to this defense.

The enablement requirement is a question of law based on underlying facts. *See Sitrick*, 516 F.3d at 999. To satisfy this requirement, a patent's specification does not necessarily have to describe how to make and use every possible variant of the claimed invention because "the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments, depending upon the predictability of the art." *AK Steel*, 344 F.3d at 1244; *see also Chiron*, 363 F.3d at 1253.

Invista has rebutted M&G's evidence with Dr. Turner's expert opinion that the '159 and '216 patent specification enables one of ordinary skill in the art to make and use the claimed invention. (D.I. 235, ex. J at 130-31) The weight of such evidence is properly weighed by the fact finder. The court finds that there remain underlying issues of material fact regarding whether the '159 and '216 patents enable one of ordinary skill in the art to make and use the claim invention without undue experimentation.

**(2) Failure to disclose NaAC as an essential component**

According to M&G, "[t]he most egregious deficiency" is Invista's failure to disclose in the specification the importance of sodium acetate ("NaAc") in controlling yellowness in the compositions of the '159 and '216 patents. (D.I. 234 at 10) As a result, M&G argues, the '159 and '216 patents are invalid for lack of written description and non-enablement. To support its argument, M&G submits testing conducted by Dr. Moore that allegedly confirms the importance of NaAc as a component; expert testimony that a person of ordinary skill in the art would not know to use NaAc or the

proper amount of NaAc; and internal Invista documents that purportedly show that Invista knew the importance of NaAc. (*Id.* at 11-18)

The enablement and written description requirements are both based on the invention **as claimed**. The written description requirement "serves both to satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed." *Capon v. Eshhar*, 418 F.3d 1349 (Fed. Cir. 2005); *see also Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1564 (Fed. Cir. 1991) ("The invention is, for purposes of the 'written description' inquiry, **whatever is now claimed**."); MPEP § 2163 ("To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention."). Similarly, "[a]s the Federal Circuit has explained, it is the claimed invention for which enablement is required. The applicant is not required to include in his application support for matters not set forth in the claim." *Phillips Petroleum Co. v. U.S. Steel Corp.*, 673 F. Supp. 1278, 1292 (D. Del. 1987) (citing *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1557 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984); *DeGeorge v. Bernier*, 768 F.2d 1318, 1323 (Fed. Cir. 1985)); *see also Liquid Dynamics Corp. v. Vaughan Co., Inc.*, 449 F.3d 1209, 1224 & n.2 (Fed. Cir. 2006) (noting that the enablement requirement "necessarily depends on an interpretation of the claims"); MPEP § 2164.08 ("The invention that one skilled in the art must be enabled to make and use is that defined by the claim(s) of the particular application or patent.").

M&G does not genuinely dispute that the specification of the '159 and '216 patents enable one of skill in the art to make the compositions as claimed. In fact, M&G's own expert, Dr. Moore, conceded that a person of ordinary skill in the art would know how to make a composition for containers comprising the components as claimed in the '159 and '216 patents. (D.I. 264 at PA616-17 293:13-295:1) He qualified his testimony by opining that one would have to do an extensive amount of experimentation to figure out how to make a mixture for a non-yellow bottle, but only pointed to non-asserted claim 26 of the '159 patent as having any non-yellowness requirement.[20] (*Id.* at PA617 295:1-18)

Here, NaAc is not a limitation in any of the asserted claims and is not mentioned in the specification. Unexpected synergistic improvement in yellowness and haze is discussed in the specification as one of the improvements over the prior art ('216 patent, col. 2:55-61), but is not a limitation in any of the asserted claims. Moreover, the specification does not teach that NaAc is an essential ingredient to the claimed inventions. As the MPEP provides:

> [A]n enablement rejection based on the grounds that a disclosed critical limitation is missing from a claim should be made only when the language of the specification makes it clear that the limitation is critical for the invention to function as intended. Broad language in the disclosure, including the abstract, omitting an allegedly critical feature, tends to rebut the argument of criticality.

MPEP § 2164.08(c).

Therefore, in light of the inventions recited in the asserted claims, M&G's

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[20]Claim 14 of the '216 patent also recites a yellowness limitation, but that claim is not being asserted in this action.

arguments that the '159 and '216 patents are invalid for the inventors' alleged failure to disclose the presence of NaAc is irrelevant to the written description and enablement requirements. The enablement and written description requirements "usually rise and fall together" because "a recitation of how to make and use the invention across the full breadth of the claim is ordinarily sufficient to demonstrate that the inventor possesses the full scope of the invention, and vice versa." *LizardTech, Inc. v. Earth Res. Mapping*, 424 F.3d 1336, 1344-45 (Fed. Cir. 2005). Accordingly, the court grants Invista's partial motion for summary judgment of validity on this ground.

**(3) Other grounds under 35 U.S.C. § 112**

In addition to the alleged deficiencies discussed above, M&G asserts numerous other deficiencies in the '159 and '216 patents, including failures to disclose that:

> 1) two different types of cobalt were used in each run which states that 200 ppm cobalt was used, not a single type of cobalt, as reported; 2) sometimes the cobalt was added during polymerization, it was not always added as a masterbatch, as reported; 3) Run Nos. 3 and 4 were actually resin C, not [r]esin D, as reported; 4) Run Nos. 5 and 6 were not made from the same base resin as Run Nos. 7 and 8, as reported; 5) Run No. 8 used a low molecular weight nylon and did not use the same type of nylon/MXD6 as the other runs that used nylon, as reported; 6) the re-runs of data for Table 7 [of the specification] was [sic] not faithfully reproduced because even some of the non-SIPA runs still had SIPA and NaAc, when they originally did not, as reported to the PTO; 7) whether the ester or glycolate of SIPA was used; 8) the amounts, or definite presence, of: manganese acetate, zinc acetate, cobalt acetate, antimony trioxide, and poly-phosphoric acid; 9) final values for the amount of MXD6, which can vary above and below the projected amount, as reported; 10) what kind or amount of reheat agent used; and 11) generally, for each active ingredient, when they are added to one another, and the timing and temperatures for those additions, and what amounts or ratios of each ingredient is needed.

(D.I. 234 at 19-20) Underlying all of these arguments is the theory that the scope of the

asserted claims is "substantially broader than the small number of examples provided," such that the '159 and '216 patents improperly claim all combinations of known components. (D.I. 235, ex. I at 43) M&G relies on Dr. Moore's expert reports, in which he concludes that "the claim inventions are not described with sufficient detail to enable one skilled in this unpredictable art to make and use the same without undue experimentation." (*Id.*; *see also* D.I. 236, ex. K at 38-44)

Dr. Turner disagrees with Dr. Moore's testimony and asserts that a person of ordinary skill in the art would understand that the examples provided in the '159 and '216 patents are illustrative of the broader claimed inventions and a person of ordinary skill would be able to make the claimed inventions in light of the disclosures. (D.I. 235, ex. J at 130-31) In light of the conflicting expert testimony, the court finds that these issues present genuine questions of material fact that preclude summary judgment.

**2. The '930 patent**

With respect to the '930 patent, M&G moves for summary judgment of invalidity based on lack of written description, non-enablement, and indefiniteness. Specifically, M&G asserts various reasons on summary judgment why a person of ordinary skill, following the disclosure of the '930 patent, would not be able to: (1) conclude that the inventors had possession of the full scope of the claimed invention; (2) practice the claimed invention without undue experimentation; or (3) determine what the claims cover or whether a particular composition infringes (*See* D.I. 234 at 39)

First, M&G points to the testimony of its expert, Dr. Moore, who asserts that the CDF value, as taught in the '930 patent, relies on the measurement of the Apparent

Permeation Coefficient ("APC") and three references provided in the '930 patent, but that the APC term does not appear anywhere in those three references. (D.I. 235, ex. I at 54-55; *see also* '930 patent, col. 6:37-57) Invista's expert, Dr. Turner, opines that the references cited in the '930 patent are irrelevant to a person of ordinary skill's understanding of the APC. (D.I. 235, ex. J at 133-34) He further opines that the '930 patent's specification sufficiently teaches one of ordinary skill in the art how to calculate oxygen permeability and CDF values. (*Id.*)

Second, Dr. Moore opines that, during prosecution, the patentee "asserted that th[e] amount of [catalyst] deactivation . . . is not related to the chemical type of colorant by **comparing only two colorants**, with purportedly similar chemical types . . . but which had very different CDFs." (*Id.*, ex. I at 55) The patentee then asserted that resins with colorants whose binding energy differed from the control by less than 0.307% did not have their transition metal catalysts deactivated, which Dr. Moore claims was an arbitrary limit in the CDF value from the "speculative coincidence of a few select examples." (*Id.*) As a result, Dr. Moore avers, the '930 patent reports no supported correlation between CDF and the type of colorant, rendering the asserted claims invalid for lack enablement or adequate written description. (*Id.*) Dr. Turner disagrees with Dr. Moore's assertion that the patentee based its conclusion on only two colorants and points to table 1 of the '930 patent as disclosing various colorants with various CDF values, some of which are identified as being the same "colorant type." (*Id.*, ex. J at 134) In addition, Dr. Turner disagrees with Dr. Moore's conclusion that the '930 patent reports no correlation between CDF and the type of colorant; rather, he

asserts that the '930 discloses to a person of ordinary skill how to identify, without undue experimentation, colorants which will not deactivate the oxidation catalyst. (*Id.*, ex. J at 136)

Third, M&G argues that the patentee withheld internal test data that was inconsistent with the CDF data presented to the PTO during patent prosecution. (D.I. 234 at 36) For example, the patentee allegedly misreported the size (or volume) of some of the bottles used in the tests; the timing (or age) at the time of permeability testing; and the colorant concentration levels. (*Id.* at 36-39) (citing D.I. 236, exs. X-Z) Invista responds by citing to Dr. Moore's deposition, in which Dr. Moore allegedly did not know where the data came from. (*See* D.I. 264 at PA617 296:22-297:24) Furthermore, Invista's expert, Dr. Turner, rebuts M&G's arguments by asserting that Dr. Moore's opinions are not based on sufficient supporting documentation, contain inconsistencies, and do not provide any analysis as to why any withheld or misreported data would render the asserted claims of the '930 patent invalid under 35 U.S.C. § 112. (D.I. 235, ex. J at 134-35)

As the parties rely on competing expert testimony regarding M&G's various 35 U.S.C. § 112 defenses, genuine issues of material fact remain for all of those issues. The court, therefore, denies the parties' motions for summary judgment of invalidity and validity of the '930 patent.

## V. CONCLUSION

For the foregoing reasons, Invista's motion for partial summary judgment of infringement (D.I. 231) is granted in part and denied in part. It is granted with respect to

indirect infringement of claims 1-3, 5, 8, 9, and 12 of the '216 patent for the time period following commencement of this suit. M&G's cross-motion for summary judgment of non-infringement (D.I. 265) is granted in part and denied in part. The motion is granted with respect to no direct infringement of all asserted claims of the '159 and '216 patents.

Furthermore, M&G's motion for summary judgment of invalidity (D.I. 233) is denied, and Invista's cross-motion for partial summary judgment of validity (D.I. 262) is granted in part and denied in part. Invista's cross-motion is granted with respect to no invalidity of all asserted claims of the '159 and '216 patents on grounds of obviousness and failure to disclose NaAc.

An appropriate order shall issue.

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

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|---|---|---|
| INVISTA NORTH AMERICA S.À.R.L. and AURIGA POLYMERS INC., | ) | |
| Plaintiffs, | ) | |
| v. | ) | Civ. No. 11-1007-SLR-CJB |
| M&G USA CORPORATION and M&G POLYMERS USA, LLC, | ) | |
| Defendants. | ) | |

**ORDER**

At Wilmington this 25th day of June, 2013, consistent with the memorandum opinion issued this same date;

IT IS ORDERED that:

1. Plaintiffs' motion for partial summary judgment of infringement (D.I. 231) is granted in part and denied in part. It is granted with respect to indirect infringement of claims 1-3, 5, 8, 9, and 12 of the '216 patent for the time period following commencement of this suit.

2. Defendants' cross-motion for summary judgment of non-infringement (D.I. 265) is granted in part and denied in part. The motion is granted with respect to no direct infringement of all asserted claims of the '159 and '216 patents.

3. Defendants' motion for summary judgment of invalidity (D.I. 233) is denied.

4. Plaintiffs' cross-motion for partial summary judgment of validity (D.I. 262) is granted in part and denied in part. The motion is granted with respect to no invalidity of

all asserted claims of the '159 and '216 patents on grounds of obviousness and failure to disclose sodium acetate.

United States District Judge