IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

| INVISTA NORTH AMERICA S.À.R.L. and AURIGA POLYMERS INC., |) |
|---|----------------------------|
| Plaintiffs, |) |
| ν. |) 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. and Auriga Polymers Inc.¹ (collectively, "Invista") are suing M&G USA Corporation and M&G Polymers USA, LLC (collectively, "M&G") for infringement of United States Patent Nos. No. 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 oxygensensitive foods and beverages. Currently before the court is claim construction, for which the court held a *Markman* hearing on April 19, 2013. The court has jurisdiction over this matter pursuant to 28 U.S.C. § 1338.

II. BACKGROUND

A. 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.

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

²As 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.

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 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.

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

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)

B. The Inventions and Patents-in-Suit

1. The '159 and '216 patents⁴

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. ('216 patent, col. 2:55-61) The '159 and '216 patents teach compositions with increased gas barrier properties that can be used in monolayer containers and have reduced yellowness and haze. (*Id.*, col. 2:55-61; 2:65-3:13) The inventions are useful has 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

⁴Invista is asserting infringement of claims 1-5, 8, 9, and 12 of the '216 patent and claims 1-6, 9, 10, 13-18, 21, and 22 of the '159 patent.

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 recite more specific compositions, as well as articles and containers made from the compositions.

2. The '930 patent⁵

Invista is also 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

⁵Invista is asserting claims infringement of claims 1, 3-6, 8, 10, and 11 of the '930 patent.

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. (*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)/(m² 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 group consisting of polyethylene, polyester, polyvinyl chloride, polyvinylidene chloride, ethylene copolymers, and blends thereof.

III. STANDARD OF REVIEW

Claim construction is a matter of law. Phillips v. AWH Corp., 415 F.3d 1303,

1330 (Fed. Cir. 2005) (en banc). Claim construction focuses on intrinsic evidence - the

claims, specification and prosecution history - because intrinsic evidence is "the most

significant source of the legally operative meaning of disputed claim language."

Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); Markman v.

Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Claims must be interpreted from the perspective of one of ordinary skill in the relevant art at the time of the invention. *Phillips*, 415 F.3d at 1313.

Claim construction starts with the claims, *id.* at 1312, and remains centered on the words of the claims throughout. *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). In the absence of an express intent to impart different meaning to claim limitations, the limitations are presumed to have their ordinary meaning. *Id.* Claims, however, must be read in view of the specification and prosecution history. Indeed, the specification is often "the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315.

IV. DISCUSSION⁶

Invista proposes the plain and ordinary meaning for all of the disputed limitations of the patents-in-suit and, to the extent the court finds construction necessary, offers constructions for some of them. (D.I. 209) M&G cites to the patent specifications and the prosecution histories for narrower constructions of all of the disputed limitations.⁷

⁶The court reserves the right to supplement or revise claim construction during trial.

⁷M&G seeks to strike the expert testimony of Dr. Edward E. Paschke, which was submitted by Invista with its opening claim construction brief on February 20, 2013, just hours before the close of expert discovery. (D.I. 228; see D.I. 212, ex. F) Invista avers that Dr. Paschke's testimony merely provides the court with a background tutorial for purposes of claim construction and that his opinions fall outside the scope of the scheduling order, which required only the exchange of expert reports "on issues for which the parties have the burden of proof," i.e. infringement and invalidity. (D.I. 260 at 3, 7) (citing D.I. 18 at ¶ 2(d); D.I. 229, ex. B)

However, Dr. Paschke opines, in part, on how a person of ordinary skill in the art would understand the disputed terms "copolyester comprising a metal sulfonate salt," "metal sulfonate salt," and "copolyester containing a metal sulfonate salt."

(*Id*.)

A. The Disputed Limitations of the '216 and '159 Patents⁸

1. "Composition"

As a threshold matter, the parties dispute whether the term "composition" needs

to be construed. "Composition" appears in the preamble of claim 1 in both the '159 and

'216 patents: "A composition for containers comprising:" It also appears in

independent claim 13 of the '159 patent:

13. An article comprising a composition comprising polyester, partially aromatic polyamide, ionic compatibilizer, and a cobalt salt.

Otherwise, "composition" only appears in dependent claims, wherein the claim

references "the composition of" another claim. For example, claim 12 of the '216 patent

recites:

⁽D.I. 212, ex. F at ¶¶ 9-15) Claim construction is an issue highly relevant to infringement in this case. Even if Invista's filing of new expert testimony at the close of expert discovery and without prior notice to M&G did not technically violate the scheduling order, it was inconsistent with the intent of the scheduling order. See Biovail Labs. Int'l SRL v. Cary Pharms. Inc., Civ. No. 09-605, 2010 WL 2132021, at *3 (D. Del. May 26, 2010) (finding that, although plaintiff did not technically violate a truncated scheduling order, its filing of a rebuttal expert declaration, when defendant believed the record with respect to claim construction experts was complete, was "inconsistent with the intent of the Scheduling Order").

Dr. Paschke did not previously produce an expert report in this case, and M&G has not had an opportunity to depose him about his opinions. While Invista correctly asserts that expert testimony can aid the court in claim construction, allowing new expert testimony that has not been vetted through discovery would unduly prejudice M&G. Therefore, the court does not consider Dr. Paschke's expert testimony and grants M&G's motion to strike it. (D.I. 228) M&G's request for costs and fees for making the motion is denied. (*Id.*)

⁸Unless otherwise noted, each disputed limitation of the '216 and '159 patents appears in both patents, and the parties agree the same construction should apply. (See D.I. 209)

12. An article comprising the composition of any one of claims 1-11; wherein said article is a preform or a container.

Invista avers that "composition" is not limiting because it only appears in the preamble of the claims and does not lend structure to the claims. (D.I. 211 at 7-9) M&G argues that the term "composition" does not always appear in a preamble; for instance, it appears after the first instance of "comprising" in claim 13 of the '159 patent and after the transitional word "comprising" in claim 12 of the '216 patent. (D.I. 230 at 11 n.1) And even if it did always appear in a preamble, M&G asserts, the term must be construed because it describes the statutory subject matter of the inventions. (D.I. 252 at 3-4)

"If the body of the claim 'sets out the complete invention,' the preamble is not ordinarily treated as limiting the scope of the claim." *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (quoting *Schumer v. Labs. Computer Sys., Inc.*, 308 F.3d 1304, 1310 (Fed. Cir. 2002)). However, the preamble may be limiting when it recites essential structure that is important to the invention or necessary to give meaning to the claim. *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1305-06 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1157 (2006). "In other words, when the claim drafter chooses to use **both** the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects." *Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp.*, 55 F.3d 615, 620 (Fed. Cir. 1995). "Whether a preamble stating the purpose and context of the invention constitutes a limitation . . . is determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in

the prosecution history." *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1572-73 (Fed. Cir. 1996); *see also In re Stencel*, 828 F.2d 751, 754 (Fed. Cir. 1987).

"Composition" gives meaning and vitality to the claims – without it, claim 1 of the '159 and '216 patents merely list components, without any structure that describes how they are interrelated. Moreover, dependent claims 2-12 of the '159 patent and dependent claims 2-11 of the '216 patent refer to said "composition" and modify it. "[W]hen the limitations in the body of the claim 'rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." Bicon, 441 F.3d at 952 (quoting Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 1339 (Fed. Cir. 2003)). In addition, "composition" appears in independent claim 13 of the '159 patent following the first instance of "comprising," indicating that the claimed article includes within it a "composition" as an essential component which, in turn, is comprised of individual ingredients. The term "composition" also appears after the only transitional phrase in claim 12 of the '216 patent, indicating that it is a limitation of that claim. To read claim 12 otherwise would read out its subject matter, as the only limitation remaining would be that the named article "is a preform or a container." Therefore, given that the "composition" term supplies necessary structure, serves as an antecedent for many dependent claims, and appears as a non-preamble limitation in some independent claims, the court finds that it should be interpreted as a claim limitation.

M&G proposes that "composition" must be "a blend of two or more ingredients that exist together at the same time." (D.I. 209) Invista disputes that a "composition"

has to be a blend and that the ingredients must exist together at the same time.⁹ (D.I. 211 at 9-10)

The specification of the '159 and '216 patents repeatedly and only refers to the claimed composition as a "blend." (See, e.g., '216 patent, abstract, col. 1:17, 1:21, 1:33, 3:2, 4:51, 5:40, 5:55-58) Even the broadest portions of the specification refer to the composition as a blend. For instance, the abstract refers to the invention as comprising a "blend of polyester and a partially aromatic polyamide with an ionic compatibilizer and a cobalt salt." (Id., abstract) Similarly, the background section states that the invention relates to "blends of polyamides in polyesters, a method for forming such compositions, and ... containers made from such compositions." (Id., col. 1:17-19) (emphasis added) Moreover, the specification explicitly states: "In the broadest sense the present invention comprises a compatibilized blend of polyester and a partially aromatic polyamide with an ionic compatibilizer and a cobalt salt." (Id., col. 3:1-3) (emphasis added) Although the specification of the '216 and '159 patents describes different methods for preparing blends of the claimed ingredients, the blend does not exist until all of the ingredients have been mixed together. (Id., col. 5:40-58) Therefore, the patentee set the outer boundaries of the invention as "blends," or the ingredients after they are mixed together.

This construction is consistent with the Federal Circuit's construction of the plain and ordinary meaning of "composition" in the field of chemistry. The Federal Circuit has

⁹In its claim construction briefing and at the *Markman* hearing, Invista proffered that the plain and ordinary meaning of composition is the "sum of the components." (D.I. 211 at 9-11; D.I. 248 at 3; D.I. 368 at 28:22-29:3)

found that a chemical "composition" is well-established as a term of art in both chemistry and patent law to be a mixture of substances, not simply the ingredients before they are mixed. In *Exxon Chemical Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553 (Fed. Cir. 1995), the Federal Circuit held that "[t]he chemical composition exists at the moment the ingredients are mixed together. Before creation of the mixture, the ingredients exist independently." *Id.* at 1558. The Court noted that the term "composition" had no temporal limitation; a composition could exist at any time during a preparation or manufacturing process. *Id.*

Subsequently, the Court in *PIN/NIP, Inc. v. Platte Chemical Co.*, 304 F.3d 1235 (Fed. Cir. 2002), adopted the construction from *Exxon* as the "basic definition" of "composition," with the caveat that claim construction remains a highly contextual exercise:

The term 'composition' in chemistry is well-established. It generally refers to mixtures of substances. . . . Although the construction of a term in a patent claim is a highly contextual exercise that is dependent upon the content of the particular patent in which the term appears, and one cannot always apply the construction of a claim term from one patent to an unrelated patent in an unrelated lawsuit, the basic definition of the term "composition" is well-established, was well-expressed in *Exxon*, and is applicable to this case.

Id. at 1244 (emphasis added). The Court again commented on the construction of the

term "composition" in Mars, Inc. v. H.J. Heinz Co., 377 F.3d 1369 (Fed. Cir. 2004):

In [*PIN/NIP* and *Exxon*] "we equated a composition with a mixture" and construed the term "composition" to refer to the claimed ingredients **after** they were joined together. . . . The specification does not, as [defendant] contends, provide a basis for deviating from this ordinary meaning.¹⁰

¹⁰Although *Exxon*, *PIN/NIP*, and *Mars* are all pre-*Phillips* (2005) cases, their discussion of "composition" is consistent with *Phillips*' principles of claim construction.

Id. at 1374.

District court cases have used *Exxon* as support for arriving at equivalent constructions of "composition." See, e.g., Kim v. Conagra Foods, Inc., Civ. No. 01 C 2467, 2003 WL 21222266, at *7 (N.D. III. May 23, 2003) (recognizing the Exxon Court's understanding of the term "composition" as "a term of art in both chemistry and patent law" and engaging in an independent claim construction exercise to arrive at a consistent construction); Kim v. Earthgrains Co., Civ. No. 01 C 3895, 2005 WL 66071, at *11 (N.D. III. Jan. 11, 2005) (finding that, in the context of the patent that was at issue, "composition" had its ordinary and customary meaning, consistent with the Exxon Court's construction of the term); Ultradent Products, Inc. v. Life-Like Cosmetics, Inc., 924 F. Supp. 1101, 1108-10, 1114 (D. Utah 1996) (relying on *Exxon* for composition claims). Courts have declined to adopt the *Exxon* definition of "composition" when doing so would be inconsistent with the patent-in-suit. For example, in Allergan, Inc. v. Sandoz Inc., Civ. No. 6:11-cv-441, 2013 WL 139350, at *4-5 (E.D. Tex. Jan. 10, 2013), the Eastern District of Texas found that the Exxon Court's definition would run counter to the entirety of the claim language of the patent-at-issue. The composition of the invention included citric acid monohydrate, which a person of ordinary skill in the art would understand dissolves into an aqueous solution and would not be present (in that form) in a mixture. Therefore, rather than applying the *Exxon* construction of "composition," the court found the Federal Circuit's construction of "solutions" to be more applicable: "the ingredients used to make the solution." Id. at *5 (citing Norian Corp. v. Stryker Corp., 432 F.3d 1356, 1362 (Fed. Cir. 2005)). The court declined to

apply *Exxon* and concluded that the claims only required citric acid monohydrate as a beginning ingredient. *Id.*; *see also Idexx Labs, Inc. v. Abaxis, Inc.*, 222 F. Supp. 2d 66, 70 (D. Me. 2002) (finding that *Exxon* does not preclude a specified ingredient from being dissolved in a liquid solution).

In the instant case, the court finds no reason to deviate from the *Exxon* Court's construction of "composition." The intrinsic evidence indicates that a "composition" must be a "blend" of ingredients, and neither party avers it would not be possible for those ingredients to exist together in a mixture.

To the extent M&G proposes an additional temporal limitation, the court finds that, like in *Exxon*, there is no intrinsic evidence to support such a limitation. *See Exxon*, 64 F.3d at 1558. The "composition" may exist at any time during or after the manufacturing process, as long as the ingredients have been mixed together. Therefore, the court construes "composition" to mean "a blend that contains the specified ingredients at any time from the moment the ingredients are mixed together."

2. "Ionic compatibilizer" ('159 patent)

The term "ionic compatibilizer" is a claim limitation only in the '159 patent. It does not appear in the claim language of the '216 patent. M&G proposes that "ionic compatibilizer" be construed as "a copolyester containing a metal sulfonate salt." (D.I. 209) Invista avers that the limitation should be given its plain and ordinary meaning or, if a construction is necessariy, the meaning "a copolyester with an ionic compatibilizing group." (*Id.*)

The specification teaches that "[t]he ionic compatibilizer is preferably a

copolyester containing a metal sulfonate salt group" ('159 patent, col. 4:62-63) and does not describe it in any other form. Moreover, "ionic compatibilizer" is expressly defined in claim 1 of the '159 patent as a "copolyester containing a metal sulfonate salt." Where "ionic compatibilizer" is recited in other independent claims of the '159 patent, that same definition appears within the language of the claim. (*See id.*, claims 13, 25, 27) Therefore, the court construes "ionic compatibilizer" in accordance with the specification and the explicit definition provided by the claims of the '159 patent to mean a "copolyester containing a metal sulfonate salt."

3. "Copolyester containing a metal sulfonate salt" ('159 patent)

The parties disagree as to what the phrase "copolyester containing a metal sulfonate salt" means. This term appears only in the claims of the '159 patent, not the '216 patent, and always with the "ionic compatibilizer" limitation. M&G proposes the construction "a copolyester wherein one of the diacid monomer links is a sulfomonomer; wherein a metal sulfonate salt is attached to the sulfomonomer; and wherein the metal sulfonate salt is attached to the copolyester." (D.I. 209) Invista proposes the plain and ordinary meaning and, to the extent a construction is necessary, "a copolyester including, but not limited to, a metal sulfonate salt group." (*Id.*)

The court begins with the well-established principle that "containing" is generally an open-ended term that is synonymous with "comprising" or "including" and does not exclude additional, unrecited elements. *See Mars*, 377 F.3d at 1375-76; *see also* MPEP § 2111.03. Although a "patentee [may choose] to be his own lexicographer and use . . . terms in a manner other than their ordinary meaning," *Bell Atlantic Network*

Servs., Inc. v. Conrad Commc'ns Grp., Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001), "[i]n redefining the meaning of particular claim terms away from their ordinary meaning, the intrinsic evidence must 'clearly set forth' or 'clearly redefine' a claim term so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term." *Id.* (quoting *Elektra Instrument S.A. v. O.U.R. Scientific Int'l Inc.*, 214 F.3d 1302, 1307 (Fed. Cir. 2000)). Therefore, to limit the scope of "copolyester containing a metal sulfonate salt" to require that the copolyester not merely include a metal sulfonate salt, but that the two are "attached" to each other, would require that the patentee clearly set forth such a narrowing definition.

The written description teaches that the metal sulfonate salt is attached to the aromatic acid nucleus of a sulfomonomer, which the parties seem to agree is, in turn, incorporated into the copolyester. ('159 patent, col. 4:62-63, 4:65-67, 5:4; D.I. 211 at 18, 22; D.I. 230 at 17) In other words, the metal sulfonate salt, by its attachment to the aromatic acid nucleus, is a part of the copolyester.¹¹ That the metal sulfonate salt is ultimately a part of the copolyester is also reflected in the claim language of the '159 patent, which equates a "copolyester containing a metal sulfonate salt" to a single component, the "ionic compatibilizer," of the claimed composition. (*See, e.g.*, '159 patent, claim 1)

The parties agree that the metal sulfonate salt is included in the copolyester

¹¹This view is consistent with the prosecution history of the '216 patent, in which the patentee explained that a person of skill in the art would know the arrangement of the metal sulfonate salt. The patentee gave, as an example: "[W]hen the aromatic acid nucleus is 5-sulfoisophthalic acid . . . and the metal is sodium, the sodium sulfonate salt is attached to the aromatic ring" (D.I. 213 at JA126-27)

through its attachment to the aromatic acid nucleus; however, Invista objects to M&G's construction as redundant, arguing that, "if the metal sulfonate salt group is attached to the sulfomonomer, it is necessarily attached to the copolyester." (See D.I. 211 at 22) The court finds that it is sufficient to specify that the copolyester must include a metal sulfonate salt. Whether or not the metal sulfonate salt, via its direct attachment to the aromatic acid nucleus of the sulfomonomer, can also be said to be "attached" to the copolyester is immaterial. To require, as M&G proposes, that the metal sulfonate salt is not only attached to the aromatic acid nucleus but also to the copolyester would be confusing. Therefore, the court adopts Invista's construction. The court construes "copolyester containing a metal sulfonate salt" to mean "a copolyester including, but not limited to, a metal sulfonate salt."

4. "Copolyester comprising a metal sulfonate salt" ('216 patent)

Instead of using the term "copolyester **containing** a metal sulfonate salt," claim 1 of the '216 patent recites a "copolyester **comprising** a metal sulfonate salt." (Emphasis added) This difference in wording (comprising vs. containing) is the source of the claim construction dispute regarding the "copolyester comprising a metal sulfonate salt" limitation of the '216 patent. Like its proposed construction for "copolyester containing a metal sulfonate salt," M&G again proposes that the metal sulfonate salt must be attached to the aromatic acid nucleus of a sulfomonomer of the copolyester. However, based on a single statement made during prosecution history, M&G avers that a "copolyester comprising a metal sulfonate salt" (unlike a "copolyester containing a metal sulfonate salt") means the metal sulfonate salt is **not** attached to the copolyester,

specifically: "a copolyester wherein one of the diacid monomer links is a sulfomonomer; wherein a metal sulfonate salt is attached to the sulfomonomer; and wherein the metal sulfonate salt is not attached to the copolyester." (D.I. 209; D.I. 230 at 17, 21) Invista, on the other hand, avers that "comprising," like "containing," is an open-ended term. (D.I. 211 at 13-14, 22) To the extent the court decides the term requires construction, Invista proposes the same construction for "copolyester comprising a metal sulfonate salt" as for "copolyester containing a metal sulfonate salt." "a copolyester including, but not limited to, a metal sulfonate salt group." (D.I. 209)

Therefore, as M&G recognizes, to require that the metal sulfonate salt is attached to the sulfonomer but not attached to the copolyester would be nonsensical as internally contradictory – the metal sulfonate salt cannot be attached to a monomer link of the copolyester yet be entirely separate from the copolyester at the same time.¹² (*See* D.I. 252 at 9-10) Such a nonsensical construction would render the '216 patent claims inoperable. It is true, as M&G asserts, that, "where . . . claims are susceptible to only one reasonable interpretation and that interpretation results in a nonsensical construction of the claim as a whole, the claim must be invalidated." *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) (citation omitted) (internal quotation marks omitted). However, the term at issue is distinguishable because M&G's proposed construction is not the only reasonable interpretation.

M&G's proposed construction relies on a single statement that the patentee

¹²Even if M&G's proposed construction is directed at requiring the sulfomonomer to be free-floating in the composition, such a result would be contrary to the teaching of the specification, as discussed *infra*.

made during prosecution of the '216 patent, in response to a question posed by the examiner in a rejection for indefiniteness. The patentee amended the language of

claim 31 (which later issued as claim 1) from "containing a metal sulfonate salt" to

"comprising a metal sulfonate salt." The patentee stated that the amendment was

made to "negate any confusion as to whether or not the metal sulfonate salt is attached.

For the record, the metal sulfonate salt is not attached to the copolyester." (D.I.

213 at JA121, JA126-27) (emphasis added)

However, the full prosecution history shows that the metal sulfonate salt is still attached to the aromatic acid nucleus of the sulfomonomer. In the same rejection, the examiner stated that, in pending claim 39 (which later issued as claim 9), it was unclear how the metal sulfonate salt is attached to the aromatic acid nucleus. (*Id.* at JA104) The patentee's response demonstrates that the metal sulfonate salt is still attached to the aromatic acid nucleus of the copolyester:

A person of skill in the art would know the arrangement of the metal sulfonate salt based on the claim as written and the specification. Specifically, the metal sulfonate salt is attached to the aromatic ring of the respective sulfonic acid. For example, when the aromatic acid nucleus is 5-sulfoisophthalic acid (see structure below) and the metal is sodium, the sodium sulfonate salt is attached to the aromatic ring (see structure below). This is all common knowledge to those of skill in the art.





5-Sulfoisophthalic acid (*Id.* at JA126-27)

sodium dimethyl 5-sulphonatoisophthalate

Morever, during prosecution, the examiner and the patentee both understood the '216 patent to be directed at a three-component system, i.e., the four-component system of the '159 patent without the "polyester" component. (*Id.* at JA103, JA124-25) The specification provides examples of the three-component system, all of which teach that the "copolyester comprising a metal sulfonate salt" component is made by "melt phase polymerization . . . conducted in the normal way" (*See, e.g.*, '216 patent, col. 8:39-46, 9:9-10:21, 5:51) In other words, the metal sulfonate salt is polymerized with the copolyester in each of those embodiments. None of the embodiments teach the metal sulfonate salt or sulfomonomer being completely unattached from the polyester such that it is freely roaming in the mixture. The specification of the '216 patent, identical to that of the '159 patent, teaches only one way that the metal sulfonate salt is related to the copolyester – it is attached to the aromatic acid nucleus of a sulfomonomer, which, in turn, is part of the copolyester. (*Id.*, col. 4:67-5:2, 5:6)

A claim construction that excludes preferred embodiments described in the specification "is rarely, if ever, correct and would require highly persuasive evidentiary support" to be adopted. *Vitronics*, 90 F.3d at 1583. M&G's construction, which would render the copolyester and metal sulfonate salt to be separately existing components, would eliminate all of the embodiments, including the preferred embodiments, described in the specification's examples. It would also destroy the three-component system described in the claim language and prosecution history. Therefore, considering all of the intrinsic evidence, the court finds that the only reasonable interpretation of the statement in prosecution history on which M&G relies is that the

patentee meant the metal sulfonate salt is not **directly** attached to the copolyester. *See Ecolab, Inc. v. FMC Corp.*, 569 F.3d 1335, 1342 (Fed. Cir. 2009) ("Even if an isolated statement appears to disclaim subject matter, the prosecution history as a whole may demonstrate that the patentee committed no clear and unmistakable disclaimer."). In light of the full prosecution history, that single statement was not a clear and unequivocal disclaimer that warrants reading out every embodiment of the '216 patent.

In addition, "comprising" is generally an open-ended term and is synonymous with "containing." See Mars, 377 F.3d at 1375-76; see also MPEP § 2111.03 ("The transitional term 'comprising' . . . is synonymous with 'including,' 'containing,' or 'characterized by,' is inclusive or open-ended and does not exclude additional, unrecited elements or method steps."). The court does not find that the patentee clearly redefined the broad term "comprising." Bell Atlantic, 262 F.3d at 1268 ("In redefining the meaning of particular claim terms away from their ordinary meaning, the intrinsic evidence must 'clearly set forth' or 'clearly redefine' a claim term so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term." (Citation omitted)). Although the patentee clarified during prosecution that the metal sulfonate salt is not directly attached to the copolyester, it is consistent for "comprising" to still mean that the metal sulfonate salt is included in the copolyester. For the foregoing reasons, the court adopts the same construction for a "copolyester comprising a metal sulfonate salt" as it does for "copolyester containing a metal sulfonate salt." A "copolyester comprising a metal sulfonate salt" is "a copolyester

including, but not limited to, a metal sulfonate salt."

5. "Polyester" ('159 patent)

Like "ionic compatibilizer," "polyester" only appears as a claim limitation in the '159 patent; it does not appear in any claim of the '216 patent. M&G proposes that a "polyester" is "a resin made from chains of monomer links; wherein individual chains are made from chaining together diacid monomer links with diol monomer links and the resin does not contain an ionic compatibilizer." (D.I. 209) During the Markman hearing, Invista did not dispute the first half of M&G's proposed construction ("a resin made from chains of monomer links; wherein individual chains are made from chaining together diacid monomer links with diol monomer links . . . "), except to add that the individual chains may also be made from chaining together diester monomer links with diol monomer links. (D.I. 368 at 38:25-40:18) The court agrees with Invista in this regard,¹³ as the specification teaches that polyesters can be prepared by one of two processes, either the ester process or the acid process. (159 patent, col. 3:24-25) In the former, a diester is reacted with a diol and, in the latter, a diacid is reacted with a diol. (Id., col. 3:26-28, 3:41-44) This understanding comports with the general definition of "polyester" resin." See McGraw-Hill Dictionary of Scientific and Technical Terms (6th ed. 2003) ("A thermosetting or thermoplastic synthetic resin made by esterification of polybasic organic acids with polyhydric acids"); Richard J. Lewis, Sr., Hawley's Condensed Chemical Dictionary (13th ed. 1997) ("Any of a group of synthetic resins, which are polycondensation products of dicarboxylic acids with dihydroxy alcohols.").

¹³During the *Markman* hearing, M&G also seemed to agree with Invista in this regard. (See D.I. 368 at 47:5-12)

The core of the dispute regarding the "polyester" limitation is whether, as M&G contends, it must not contain an ionic compatibilizer (or "copolyester containing a metal sulfonate salt").¹⁴ This portion of M&G's proposed construction is narrower than the plain and ordinary meaning to one of ordinary skill in the art because the general meaning of polyester includes all copolyester, a subclass of polyesters. (*See* D.I. 247 at 8; D.I. 252 at 10) M&G asserts that this narrower construction, however, is warranted because the patentee distinguished between "polyester" and "copolyester containing a metal sulfonate salt" in the claims and in the prosecution history. (D.I. 230 at 11-14) M&G argues that "polyester" and "copolyester containing a metal sulfonate salt" (or "ionic compatibilizer") must be mutually exclusive, or else the two terms would "collapse together" and "read out" the "ionic compatibilizer" as a limitation. (*Id.*)

"Polyester" and "ionic compatibilizer" are separate limitations in the claims of the '159 patent. While preserving claim integrity does not require that two terms in a claim necessarily refer to two different components (just that they connote different meanings), "[t]he prosecution history, specification, comparison with other claims in the patent, and other evidence **may require that two terms in a claim refer to different [components]**." *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) (emphasis added). When viewed in light of the prosecution history, the patentee explicitly required that the "polyester" and "ionic compatibilizer" limitations refer to different components, such that the claimed invention is a four-component system.

¹⁴As construed by the court, *supra*, the "ionic compatibilizer" limitation of the '159 patent is synonymous with "copolyester containing a metal sulfonate salt."

During prosecution of the '159 patent, the examiner rejected claims 1, 14, and 28¹⁵ for being indefinite and posed the following to the patentee: "It is unclear if or how the generic 'polyester' component distinguishes over the 'copolyester containing a metal sulfonate salt.' Are these the same or different polyester components?" (D.I. 213 at JA 417, JA446) In response, the patentees clarified the significance of the separate recitation of "polyester" and "copolyester containing a metal sulfonate salt:"

Applicants traverse this rejection and submit that any skilled artisan would realize that a separate recitation of "polyester" and "copolyester containing a metal sulfonate salt" within the same list of ingredients would necessarily mean the components are different. Claims must be read in light of the specification, and throughout the specification, it is quite clear that the "ionic compatibilizer" component of the composition does not refer to "polyester" recited as the first component of the composition. Misconstruction of the claims resulting in giving the same meaning to clearly different phrases within the same claims results in violation of the holding of the Federal Circuit Court of Appeals in *Ethicon Endo-Surgery v. United States*, 9[3] F.3d 1572, 1579 (Fed. Cir. 1996).

(*Id.* at JA463-64) (first emphasis added) This statement clarifies that "polyester" and "copolyester containing a metal sulfonate salt" (or "ionic compatibilizer"), as used in the '159 patent, are "necessarily . . . different" components of the invention. In other words, the patentee disclaimed the possibility that the "ionic compatibilizer" component could be subsumed in the "polyester" component of the invention.

The court recognizes that the specification of the '159 patent teaches several methods of preparing the composition of the invention, including two methods that appear to permit the polyester and ionic compatibilizer to form a new copolyester before being combined with a transition metal catalyst and partially aromatic polyamide. ('159

¹⁵Claim 14 eventually issued as claim 13, and the limitations of claim 28 were incorporated into claims 25 and 27, as issued.

patent, col. 5:39-53) A third method calls for the components to simply be blended together or as a blend of master batches. (*Id.*, col. 5:54-55) The claims of the '159 patent, as written and explicitly clarified by the patentee to traverse a rejection during prosecution, teach a four-component composition, wherein the "polyester" and "ionic compatibilizer" components are separate and distinct. Therefore, to the extent the first two methods of preparation result in a three-component composition, they are not literally encompassed by the claims of the '159 patent.¹⁶ *See TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008) ("[R]ead in the context of the specification, the claims of the patent need not encompass all disclosed embodiments.").

For the foregoing reasons, the court construes "polyester," for purposes of the '159 patent, to mean "a resin made from chains of monomer links; wherein individual chains are made from chaining together diacid or diester monomer links with diol monomer links and the resin is not an ionic compatibilizer."¹⁷

6. "Attached"

The disputed term "attached" is recited in claims 10 and 22 of the '159 patent and claim 9 of the '216 patent in the context of a "metal sulfonate salt" being "attached to an aromatic acid nucleus." M&G avers that "attached" means "covalently bonded,"

¹⁶As discussed *infra*, the claims of the 216 patent, which was filed as a divisional, are directed at a three-component composition.

¹⁷To avoid confusion with the court's construction of "copolyester **containing** a metal sulfonate salt," the court defines the "polyester" limitation of the '159 patent using "the resin **is not** an ionic compatibilizer," rather than M&G's proposed phrasing "the resin **does not contain** an ionic compatibilizer."

such that it excludes all other types of attachment or bonding. (D.I. 230 at 20-21) Invista avers that nothing in the patent claims or specification limits "attached" to a particular type of attachment or bonding.¹⁸ (D.I. 211 at 20)

The specification of the '216 and '159 patents never limits the method of attachment. ('216 patent, col. 4:67-5:1) During prosecution of the '216 patent, the patentee stated that, with respect to claim 39 (which later issued as claim 9), "a person of skill in the art would know the arrangement of the metal sulfonate salt based on the claims as written and the specification. Specifically, the metal sulfonate salt is attached to the aromatic ring of the respective sulfonic acid." (D.I. 213 at JA126) The patentee then provided an example and a structural diagram showing a covalent bond. (*See id.* at JA126-27) However, the example and structural diagram did not disclaim noncovalent bonding; the patentee never even mentioned covalent bonding. Therefore, the patentee did not define "attached" in the intrinsic evidence.

The term "attached" is not a term of art in chemistry and carries no specialized meaning to persons skilled in the art. Its ordinary meaning is "joined; connected; bound." *Random House Kernerman Webster's College Dictionary* (2010). Absent any limiting definition or use in the intrinsic evidence, the court construes the term in order to clarify that, pursuant to its plain and ordinary meaning, it may encompass more than

¹⁸Invista contends that courts have construed "attached" broadly, according to its plain and ordinary meaning, to not require direct attachment. (D.I. 211 at 20) (citing *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1367-68 (Fed. Cir. 2012); *Rosco, Inc. v. Velvac Inc.*, Civ. No. 11-117, 2012 WL 6028239, at *7 (D. Del. Dec. 4, 2012)) However, the cases that Invista cites are not particularly helpful because the patents-at-issue in those cases related to physical, not chemical, methods of attachment.

covalent bonding. The court construes "attached" to mean "covalently or noncovalently bonded."

7. "Metal sulfonate salt"

"Metal sulfonate salt" is a limitation of both the '159 and '216 patents. M&G avers that "metal sulfonate salt" means "a sulfonate salt group covalently bonded to an aromatic acid nucleus of a sulfomonomer" and that the sulfonate salt group can only be "Na+ or Zn++." (D.I. 209) Invista proposes that, to the extent the court decides the limitation requires construction, it is "a salt of sulfonic acid wherein the cation is a metal ion." (*Id.*)

M&G's proposed construction is too narrow. First, the specification of the '159 and '216 patents does not mention covalent bonding, only attachment. Thus, the metal sulfonate salt does not have to be covalently bonded to an aromatic acid nucleus. Second, while the specification teaches a metal sulfonate salt being "attached to an aromatic acid nucleus," it only does so in the context of discussing the "copolyester" limitation, wherein the copolyester contains or comprises a metal sulfonate salt. (*See* '216 patent, col. 4:67-5:1) Therefore, while the claimed copolyester in the '159 and '216 patents must include a metal sulfonate salt, as discussed *supra*, such a requirement has been incorporated into the court's construction for "copolyester containing a metal sulfonate salt" ('159 patent) and "copolyester comprising a metal sulfonate salt" ('216 patent).

The parties also dispute whether a metal sulfonate salt is limited to only certain metal ions. M&G's assertion that the metal ion of metal sulfonate salt can only be Na+

or Zn++ runs counter to the specification and claims. The independent claims of the '159 and '216 patents do not limit the metal sulfonate salt to any particular metal ions. (*See* '159 patent, claims 1, 13, 15, 17; '216 patent, claim 1) Moreover, both the preferred embodiments described in the specification and the dependent claims of the patents specify at least six possible metal cations: Na+, Li+, K+, Zn++, Mn++, or Ca++. ('159 patent, col. 13:52-59; '216 patent, col. 14:17-19)

To the extent M&G asserts that the '159 and '216 patents only describe Na+ and Zn++ as ions of metal sulfonate salts that can be used to achieve the purportedly "surprising" results, such an argument is more appropriately raised as a theory of invalidity. Therefore, the court agrees with Invista's proposed construction that "metal sulfonate salt" is "a salt of sulfonic acid wherein the cation is a metal ion."

8. "Cobalt salt"

"Cobalt salt" is a limitation in the '159 and '216 patents. Similar to its proposed construction for "metal sulfonate salt," M&G asserts that "cobalt salt" is limited to only certain salts – cobalt octoate, cobalt acetate, cobalt stearate, and cobalt naphthenate – because these were the only cobalt salts described and shown to purportedly achieve the "surprising" results alleged for the invention. (D.I. 209; D.I. 230 at 19)

Consistent with its analysis as to "metal sulfonate salt," the court declines to adopt M&G's narrow construction for "cobalt salt." Dependent claim 7 of the '216 patent and dependent claim 8 of the '159 patent recite numerous specific cobalt salts besides the few that M&G proposes in its construction. Again, to the extent M&G asserts that the '159 and '216 patents only mention four cobalt salts that achieve the purportedly "surprising" results, such an argument is more appropriately raised as an invalidity argument. The court construes "cobalt salt" to mean, consistent with Invista's position, "a salt wherein the cation is cobalt."

9. "Is present"

Finally, the parties dispute the term "is present," which is recited in claims 2-4 of the '216 patent and claims 2-4, 14, 15, and 16 of the '159 patent. M&G proposes that it means "an ingredient exists in a physical mixture," whereas Invista asserts the term requires no claim construction. (D.I. 209) The court finds that, at this juncture, "is present" does not require construction.

B. The Disputed Limitations of the '930 Patent¹⁹

1. "Melt blended resin" / "melt blend"

The parties agree that "melt blended resin" and "melt blend" should be construed together. (*Id.*) M&G proposes the construction "a homogeneous blend formed by mixing two or more polymers in a molten phase." (*Id.*) Invista proposes the plain and ordinary meaning and disagrees with M&G's proposed construction to the extent it requires the blend to be homogeneous. (D.1. 368 at 82:4-12)

The specification of the '930 patent describes one embodiment in which the components are added to an injection molding machine, which is designed "to produce a homogeneous blend." ('930 patent, col. 5:44-54) The rest of the specification teaches "melt blended resin" and "melt blend" in a generic sense, without any limitation

¹⁹Although listed as a disputed limitation in the parties' joint claim construction chart (D.I. 209), Invista and M&G do not discuss "oxidizable organic polymer" (asserted claims 1 and 5 of the '930 patent) in their claim construction briefs. (*See* D.I. 211; D.I. 230; D.I. 247; D.I. 252) As a result, the court does not construe the "oxidizable organic polymer" limitation at this time.

that the blend be homogeneous. (*See id.*, abstract, col. 2:33, 2:44-63, 2:66-3:2, 4:67-5:1, 5:61-62, 7:38) Similarly, nothing in the claim language indicates that a "melt blended resin" or "melt blend" must be homogeneous.

During the *Markman* hearing, M&G proposed dropping the reference to "homogeneous" in its proposed construction. (D.I. 368 at 85:8-13) The court finds this to be consistent with the written description of the '930 patent and, accordingly, construes "melt blended resin" and "melt blend" to mean "a blend formed by mixing two or more polymers in a molten phase."

2. "A base polymer"

M&G proposes that "a base polymer" should be construed to mean "a polymer blend that does not contain an ionic compatibilizer." (D.I. 209) "Base polymer" and "ionic compatibilizer" are not recited as separate and distinct components in the broadest sense of the claimed invention. Independent claim 1 of the '930 patent does not recite an ionic compatibilizer as a required component of the claimed invention. Rather, dependent claim 10 narrows independent claim 1 by reciting a melt blended resin that also includes an "ionic compatibilizer." The specification of the "930 patent also makes clear that the ionic compatibilizer is an optional component. ('930 patent, col. 2:47-49, col. 3:2) Moreover, the patentee did not make a clear disclaimer that the "base polymer" must be a different component from the "ionic compatibilizer."²⁰ (*See* D.I. 213 at JA765-66, JA805)

²⁰Compare the claim language and the prosecution history of the '159 patent, discussed *supra*, which warranted a limitation that the "polyester" and "ionic compatibilizer" components of that patent be separate and distinct.

Therefore, the court declines to construe "a base polymer" narrowly and require that it not contain an ionic compatibilizer. The court finds that "a base polymer" does not require construction; the plain and ordinary meaning suffices.

3. "Transition metal catalyst"

M&G asserts that "transition metal catalyst" is limited to only "cobalt stearate and cobalt acetate" because these were the only two transition metal catalysts disclosed that could achieve the results taught by the patent. (D.I. 209; D.I. 230 at 24-25) M&G cites to the prosecution history to assert that the patentee limited "transition metal catalyst" only to cobalt stearate. (D.I. 230 at 25) (citing D.I. 213 at JA765) However, the patentee stated that the then-pending claim "read on" the elected species and further clarified that the election was "made for searching purposes only and should not be construed as a limitation of the present invention." (D.I. 213 at JA765-66)

The specification of the '930 patent uses "transition metal catalyst" broadly and does not limit it to cobalt stearate and cobalt acetate. The detailed description of the invention provides that "[t]he transition metal catalyst can be a salt which includes a metal selected from the first, second, or third transition series of the Periodic Table," those metals being the transition metals. ('930 patent, col. 5:2-4) It is only in dependent claim 8 of the '930 patent that a "transition metal catalyst" is limited to a specific type of transition metal catalyst, cobalt salt. Therefore, the court declines to adopt M&G's narrow construction for "transition metal catalyst." The court construes "transition metal catalyst," consistent with the definition provided in the specification and Invista's proposed construction, to be "a catalyst which includes a metal selected from the first, second, or third transition series of the Periodic Table."

4. "Colorant"

M&G proposes that a "colorant" be defined as "the pure chemical compound responsible for imparting color that does not have any other additives such as carriers and other materials." (D.I. 209) M&G's proposed construction introduces limiting language that is not found in the written description or claim language of the '930 patent. Indeed, M&G's claim construction briefs do not argue why a "colorant," as used in the '930 patent, must be "pure" or "not have any other additives." (*See* D.I. 230 at 26; D.I. 252 at 14) The court finds that there is no need to construe "colorant" beyond its plain and ordinary meaning.

5. "Polyester"

M&G proposes that a "polyester" is "a resin made from chains of monomer links; wherein individual chains are made from chaining together diacid monomer links with diol monomer links." (D.I. 209) However, the specification of the '930 patent also teaches that polyesters can made with diester monomer links. Specifically, it describes how polyesters can be prepared by one of two processes, either the ester process or the acid process. ('930 patent, col. 3:15-16) In the former, a diester is reacted with a diol and, in the latter, a diacid is reacted with a diol. (*Id.*, col. 3:17-19, 3:33-36) As the court has noted, this understanding comports with the general definition of "polyester resin." *See McGraw-Hill Dictionary of Scientific and Technical Terms*, *supra* ("A thermosetting or thermoplastic synthetic resin made by esterification of polybasic organic acids with polyhydric acids"); Lewis, Sr., *supra* ("Any of a group of synthetic resins, which are polycondensation products of dicarboxylic acids with

dihydroxy alcohols.").

The intrinsic evidence of the '930 patent does not limit the meaning of "polyester." Therefore, the court construes "polyester," for purposes of the '930 patent, to mean "a resin made from chains of monomer links; wherein individual chains are made from chaining together diacid or diester monomer links with diol monomer links."

6. "Cobalt salt"

Similar to its arguments for the "transition metal catalyst" limitation, M&G proposes that "cobalt salt" is limited to cobalt stearate and cobalt acetate. (D.I. 209) For the reasons set forth above, the court does not limit "cobalt salt" to those two species. The specification of the '930 patent does not limit the term, stating only that it is a common example of a transition catalyst. ('930 patent, col. 1:53-55) Furthermore, claim 8 recites "cobalt salt" without further limitation, and dependent claim 9 narrows the cobalt salt to a specific species, cobalt stearate. Therefore, the court construes "cobalt salt" in a manner consistent with its plain and ordinary meaning, as well as the "cobalt salt" limitation of the '159 and '216 patents (which the court has found is also not limited to any particular species). "Cobalt salt" means "a salt wherein the cation is cobalt."

7. "Copolyester of polyethylene terephthalate"

According to M&G, a "copolyester of polyethylene terephthalate" should be defined as "a polyester that contains more than one diol, more than one diacid, or a combination of more than one diol and more than one diacid; wherein one of the diacid monomer links is terephthalic acid and one of the diol monomer links is ethylene glycol." (D.I. 209) The court does not find M&G's proposed construction helpful, as

"polyethylene terephthalate" is a chemical compound for which the plain and ordinary meaning suffices. Therefore, the court does not construe "copolyester of polyethylene terephthalate" beyond its plain and ordinary meaning.

8. "Ionic compatibilizer"

For the "ionic compatibilizer" limitation of the '930 patent, M&G proposes the construction: "a copolyester containing an ionic group capable of reducing the domain size of an oxidizable organic polymer, which is inherently incompatible with the base polymer in a melt blend." (*Id.*) Invista argues that, to the extent a construction is required, "ionic compatibilizer" means "a copolyester with an ionic compatibilizing group." (*Id.*)

The detailed description of the invention teaches that, in certain cases where an oxygen scavenging polymer is incompatible with a base polymer, "an ionic compatibilizer can be used" ('930 patent, col. 5:14-16) The ionic compatibilizer can "reduce the domain size of the oxidizable organic polymer, thus reducing the haze of the article." (*Id.*, col. 5:16-17) Dependent claim 10 of the '930 patent explicitly recites the function taught in the specification as a separate limitation:

10. The melt blended resin of claim 1, wherein said resin contains an ionic compatibilizer, wherein the ionic compatibilizer **reduces the haze of the packaging articles**.

(Emphasis added)

Although the court does not adopt M&G's proposed construction, it finds that a construction would be helpful because ionic compatibilizer is not a general term of art. To that end, the court adopts Invista's proposed construction; an "ionic compatibilizer" is "a copolyester with an ionic compatibilizing group."21

9. "Compatibilizer"

The parties also dispute the meaning of "compatibilizer." Dependent claim 10 of the '930 patent recites a resin that "contains an ionic compatibilizer" and is followed immediately by dependent claim 11, which recites "wherein **said compatibilizer**" (Emphasis added) The specification also alternates between describing the invention as comprising "optionally a compatibilizer" (*id.*, col. 2:47-49, 3:2) and "optionally an ionic compatibilizer." (*Id.*, col. 5:45-47) Therefore, it is clear from the claim language and the written description of the '930 patent that "compatibilizer" is used interchangeably with "ionic compatibilizer." As such, the court construes "compatibilizer" the same as it has construed "ionic compatibilizer," namely "a copolyester with an ionic compatibilizing group."

10. "Copolyester containing a metal sulfonate salt"

Finally, as with the same phrase that appears in the '159 patent, the parties dispute whether the "copolyester containing a metal sulfonate salt" limitation of the '930 patent requires that the metal sulfonate salt be "attached" to the copolyester. (D.I. 209) Given that the '930 patent specification provides the same teaching regarding "copolyester containing a metal sulfonate salt" as does the '159 patent specification, the court's reasoning supporting the construction of that phrase for the '159 patent applies

²¹The court has construed the "ionic compatibilizer" limitation differently for purposes of the '159 patent. Unlike the '930 patent, the independent claims of the '159 patent expressly defined "ionic compatibilizer" as a "copolyester containing a metal sulfonate salt." In the '930 patent, "copolyester containing a metal sulfonate salt" is just one embodiment of "ionic compatibilizer."

here. In short, the '930 specification teaches that, in a "copolyester containing a metal sulfonate salt," the metal sulfonate salt is attached to the aromatic acid nucleus of a sulfomonomer, which the parties agree is part of the copolyester. ('930 patent, col. 5:18-31; D.I. 211 at 22; D.I. 230 at 29) As explained *supra*, this teaching does not require the metal sulfonate salt to be directly attached to the copolyester, only the aromatic acid nucleus. Moreover, the term "containing" is open-ended and does not foreclose additional, unrecited elements. Therefore, the court construes "copolyester containing a metal sulfonate salt" in the same manner that it construed that phrase for the '159 patent: "a copolyester including, but not limited to, a metal sulfonate salt."

V. CONCLUSION

For the foregoing reasons, the court construes the claim language of the patents-in-suit in the manner set forth above. An appropriate order shall issue.

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

| INVISTA NORTH AMERICA S.À.R.L. and AURIGA POLYMERS INC., |)) |
|---|----------------------------|
| Plaintiffs, |) |
| ٧. |) 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. "Composition" ('159 and '216 patents) means "a blend that contains the specified ingredients at any time from the moment the ingredients are mixed together."

2. "Ionic compatibilizer" ('159 patent) means "copolyester containing a metal sulfonate salt."

3. "Copolyester containing a metal sulfonate salt" ('159 patent) means "a copolyester including, but not limited to, a metal sulfonate salt."

4. "Copolyester comprising a metal sulfonate salt" ('216 patent) means "a copolyester including, but not limited to, a metal sulfonate salt."

5. "Polyester" ('159 patent) means "a resin made from chains of monomer links; wherein individual chains are made from chaining together diacid or diester monomer links with diol monomer links and the resin is not an ionic compatibilizer."

6. "Attached" ('159 and '216 patents) means "covalently or noncovalently bonded."

7. "Metal sulfonate salt" ('159 and '216 patents) means "a salt of sulfonic acid wherein the cation is a metal ion."

8. "Cobalt salt" ('159 and '216 patents) means "a salt wherein the cation is cobalt."

9. "Is present" ('159 and '216 patents) does not require construction.

10. "Melt blended resin" and "melt blend" ('930 patent) mean "a blend formed by mixing two or more polymers in a molten phase."

11. "A base polymer" ('930 patent) does not require construction.

12. "Transition metal catalyst" ('930 patent) means "a catalyst which includes a metal selected from the first, second, or third transition series of the Periodic Table."

13. "Colorant" ('930 patent) does not require construction.

14. "Polyester" ('930 patent) means "a resin made from chains of monomer links; wherein individual chains are made from chaining together diacid or diester monomer links with diol monomer links."

15. "Copolyester of polyethylene terephthalate" ('930 patent) does not require construction.

16. "Cobalt salt" ('930 patent) means "a salt wherein the cation is cobalt."

17. "Ionic compatibilizer" ('930 patent) means "a copolyester with an ionic compatibilizing group."

18. "Compatibilizer" ('930 patent) means "a copolyester with an ionic

compatibilizing group."

19. "Copolyester containing a metal sulfonate salt" ('930 patent) means "a copolyester including, but not limited to, a metal sulfonate salt."

United States District Judge