

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

WM. WRIGLEY JR. COMPANY,)	
a Delaware corporation,)	
)	
Plaintiff,)	
)	Case No.: 04-cv-0346
v.)	
)	Judge Robert M. Dow, Jr.
CADBURY ADAMS USA LLC,)	
a Delaware limited liability company,)	
)	
Defendant.)	

MEMORANDUM OPINION AND ORDER

Before the Court are several pending motions for summary judgment. Defendant Cadbury Adams USA LLC (“Cadbury”) moved for summary judgment pursuant to Rule 56 of the Federal Rules of Civil Procedure, seeking to establish the invalidity of Claim 34 of U.S. Patent No. 6,627,233 (the “233 patent”), owned by Plaintiff, Wm. Wrigley Jr. Co. (“Wrigley”), on grounds of anticipation and obviousness.¹ Wrigley moved for partial summary judgment of non-infringement of U.S. Patent No. 5,009,893 (the “893 patent”), owned by Cadbury [209]. Cadbury then filed a cross-motion for literal infringement by Wrigley of the ‘893 Patent and for validity of the ‘893 patent [230]. The case is about cooling agents in chewing gum and mint products – specifically, Cadbury’s use of “WS-3” in its products and Wrigley’s use of “WS-23” in its products. Each party claims that the other infringed its intellectual property rights.

¹ This motion was never separately entered on the docket, although it has been fully briefed and Local Rule 56.1 fact statements were submitted in support of and opposition to the motion. See [198, 206-208, 248-49].

For the following reasons, Cadbury’s motion for summary judgment of invalidity is granted, Wrigley’s motion for partial summary judgment of non-infringement [209] is granted, and Cadbury’s cross-motion for literal infringement [230] is granted in part and denied in part.

I. Facts²

The Court takes the relevant facts primarily from the parties’ respective Local Rule (“L.R.”) 56.1 statements.³ The Court takes no position on whose version of disputed factual matters is correct. Local Rule (“L.R.”) 56.1 requires that statements of facts contain allegations of material fact, and that the factual allegations be supported by admissible record evidence. See L.R. 56.1; *Malec v. Sanford*, 191 F.R.D. 581, 583-85 (N.D. Ill. 2000). The Seventh Circuit teaches that a district court has broad discretion to require strict compliance with L.R. 56.1. See, e.g., *Koszola v. Bd. of Educ. of the City of Chicago*, 385 F.3d 1104, 1109 (7th Cir. 2004); *Curran*

² Because the parties filed a host of sensitive documents under seal during the course of this case, the Court invited the parties to move to redact any confidential (trade secret) information to the extent that such information might be referenced (and thereby disclosed publicly) in the Court’s opinion [287]. However, after reviewing the parties’ motions and supporting materials [288-93], the Court determined that no trade secrets would be disclosed in this opinion. Out of an abundance of caution, the Court made minor edits to ensure that was the case. None of those edits reduced the transparency or otherwise obscured the rationale for this decision. For these reasons, both parties’ motions to redact [288, 291] are denied as moot.

³ Related to Cadbury’s motion for summary judgment as to the invalidity of Wrigley’s ‘233 patent, the Court has before it Cadbury’s Corrected Statement of Facts (“Cadbury SOF”) [248]; Wrigley’s Response to Cadbury’s Statement of Facts (“Wrigley Resp.”) [207]; Wrigley’s Statement of Additional Facts (“Wrigley SOAF”) [208]; and Cadbury’s Corrected Response to Wrigley’s Statement of Additional Facts (“Cadbury Resp. SOAF”) [249]. On Wrigley’s partial motion for summary judgment regarding non-infringement of Cadbury’s ‘893 patent and Cadbury’s related cross-motion, the Court has before it Wrigley’s Statement of Facts (“Wrigley SOF”) [211]; Cadbury’s Response to Wrigley’s Statement of Facts (“Cadbury Resp.”) [231]; Cadbury’s Statement of Additional Facts (“Cadbury SOAF”) [228]; Wrigley’s Response to Cadbury’s Statement of Additional Facts (“Wrigley Resp. SOAF”) [236]; Cadbury’s Statement of Facts in support of its cross-motion (“Cadbury SOFX”) [229]; Wrigley’s Response to Cadbury’s Statement of Facts in support of Cadbury’s cross-motion (“Wrigley Resp. X”) [238]; Wrigley’s Statement of Additional Facts regarding Cadbury’s cross-motion (“Wrigley SOAFX”) [239]; and finally, Cadbury’s Response to Wrigley’s Statement of Additional Facts in relation to Cadbury’s cross-motion (“Cadbury Resp. SOAFX”) [243].

v. Kwon, 153 F.3d 481, 486 (7th Cir. 1998) (citing *Midwest Imps., Ltd. v. Coval*, 71 F.3d 1311, 1317 (7th Cir. 1995) (collecting cases)).

Where a party has offered a legal conclusion or a statement of fact without offering proper evidentiary support, the Court will not consider that statement. See, e.g., *Malec*, 191 F.R.D. at 583. Additionally, where a party improperly denies a statement of fact by failing to provide adequate or proper record support for the denial, the Court deems admitted that statement of fact. See L.R. 56.1(a), (b)(3)(B); see also *Malec*, 191 F.R.D. at 584. The requirements for a response under Local Rule 56.1 are “not satisfied by evasive denials that do not fairly meet the substance of the material facts asserted.” *Bordelon v. Chicago Sch. Reform Bd. of Trs.*, 233 F.3d 524, 528 (7th Cir. 2000). In addition, the Court disregards any additional statements of fact contained in a party’s briefs but not in its fact statements. See, e.g., *Malec*, 191 F.R.D. at 584 (citing *Midwest Imps.*, 71 F.3d at 1317).

A. The ‘233 Patent

U.S. Patent No. 6,627,233 (the “‘233 patent”) is assigned to Wrigley. Cadbury SOF ¶ 6. Wrigley filed its patent application on March 16, 2000, and the patent issued on September 30, 2003. *Id.* The ‘233 patent relates to chewing gums that contain physiological cooling agents and methods for producing those chewing gums. Cadbury Mem. Ex. A, ‘233 Patent, at 1:12-15. The relevant claim at issue in this case from the ‘233 patent is Claim 34. Cadbury SOF ¶ 4. Claim 34 reads as follows:

A chewing gum composition comprising:

- a) about 5% to about 95% gum base;
- b) about 5% to about 95% bulking and sweetening agent; and
- c) about 0.1 to about 10% flavoring agent wherein the flavoring agent comprises N-2,3-trimethyl-2-isopropyl butanamide and menthol.

Cadbury Mem., Ex. A, ‘233 Patent, at 56:41-47.

During the claim construction phase of the case, Judge Zagel defined several key terms of the ‘233 patent in a Memorandum Opinion and Order before this case was transferred to this Court.⁴ 5/18/07 Mem. Op. [192]. The percentages of the ingredients refer to the “percent by weight of the chewing gum composition.” *Id.* at 4. The term “N-2,3-trimethyl-2-isopropyl butanamide” refers to “a carboxamide formula commonly known as WS-23.” *Id.* Judge Zagel defined the term “menthol” to be “menthol, as a distinct and separate substance, as distinguished from being present in mint oils.” *Id.* at 18.

B. Prior Art Use of Carboxamides and Menthol in Chewing Gum Products

The following facts detail the prior art relating to Cadbury’s argument that Wrigley’s ‘233 patent is invalid. Prior to the ‘233 patent, chewing gums had been known to contain between 5 and 95 percent gum base, between 5 and 95 percent bulking and sweetening agents, and between 0.1 and 10 percent flavoring agents. Wrigley’s Resp. ¶ 12. The combination of WS-23 and menthol is the novel feature of Claim 34. *Id.*

Menthol, which is a component of peppermint oil, is a well-established flavoring agent in chewing gum and confectionaries. Cadbury SOF ¶ 22. Menthol provides a cooling sensation when it interacts with nerve receptors in the mouth. *Id.* However, while menthol imparts a desirable cooling sensation, at higher concentrations it also can impart a bitter flavor. *Id.* Thus, gum makers have run into difficulties when trying to create cooler chewing gums by using high concentrations of menthol. *Id.*

⁴ The Court acknowledges that law of the case principles require that this Court give deference to Judge Zagel’s *Markman* opinion and, accordingly, this Court adopts certain terms as they were defined by Judge Zagel in that opinion. The Seventh Circuit has made clear that the presumption that earlier rulings in a case “holds when a case is reassigned from one judge to another” (*Minch v. City of Chicago*, 486 F.3d 294, 301 (7th Cir. 2007)), and that a successor judge is not free to alter prior rulings “merely because he has a different view of the law or the facts from the first judge” (*Mendenhall v. Mueller Streamline Co.*, 419 F.3d 686, 691 (7th Cir. 2005)).

To address this problem, researchers at Wilkinson-Sword Co. researched other compounds that could be used as cooling agents in place of menthol. Cadbury Mem., Ex. W, Dr. M.A. Parrish, *Market Warms to Physiological Cooling Agents*, MFG. CHEMIST (Feb. 1987) (the “Parrish article”), at 1. Researchers discovered 1200 compounds that produce a cooling effect without the bitterness of menthol. *Id.* From these 1200 compounds, two were selected for commercialization based upon several parameters, including “low toxicity, cooling activity together with general efficacy and acceptability, low odour and taste, low volatility, stability in use, and cost.” *Id.* These two compounds were N-ethyl-p-menthane-3-carboxamide (WS-3) and N-2,3-trimethyl-2-isopropyl butanamide (WS-23). *Id.* The Parrish article, which was published in 1987, described the two compounds. *Id.*; Cadbury SOF ¶ 24. In the article, WS-3 and WS-23 are described as “compounds of high ‘quality’” in that they are “characterized by high cooling activity with no side-effects such as tingling, stinging or burning sensations.” Cadbury Mem., Ex. W, Parrish Article, at 1. Chewing gum was listed as a product in which WS-23 and WS-3 could be used, and the amounts suggested for use were between 0.5 and 1 percent by weight. *Id.* The Patent Office did not consider the Parrish article during the prosecution of the ‘233 patent. Cadbury SOF ¶ 24.

Wilkinson-Sword previously had obtained patents on the cooling agents WS-3 and WS-23: the former was included in U.S. Patent No. 4,136,163 to Watson et al. (the “Watson patent”), which issued on January 23, 1979 and covered a class of N-substituted-p-menthane carboxamides, including WS-3. The latter was included in U.S. Patent No. 4,230,688 to Rowsell et al. (the “Rowsell patent”), which issued on October 28, 1980 and covered a class of acyclic carboxamides, including WS-23. Wrigley Resp. ¶ 26.

Cadbury also applied for and obtained two patents that preceded the '233 patent, both of which dealt with cooling agents in chewing gums: they are the '893 patent and the Luo patent. (Recall that the '893 patent is also the subject of Wrigley's motion for summary judgment of non-infringement.) Cadbury first obtained the '893 patent., which was directed toward edible compositions that contained "a cooling agent comprising [menthol]⁵ and an N-substituted-p-menthane carboxamide." Cadbury Mem., Ex. DD, '893 Patent, Cover. Cadbury filed the '893 patent application on July 17, 1989, and the patent issued on April 23, 1991. *Id.* The '893 patent describes a chewing gum composition comprising "a gum base, a sweetener, and a cooling composition comprising menthol and an N-substituted-p-menthane carboxamide" as a preferred embodiment of the invention. *Id.* at 2:42-48. The '893 patent lists WS-3 as a preferred N-substituted-p-menthane carboxamide. *Id.* at 4:66-67.

The second pertinent Cadbury patent is U.S. Patent No. 5,698,181 to Luo (the "Luo patent"), and it was directed to chewing gum compositions that contained a cooling agent comprising menthol and an N-substituted-p-menthane carboxamide. Cadbury Mem., Ex. N, Luo Patent, Cover. Cadbury filed the Luo patent application on May 11, 1995, and the Luo patent issued on December 16, 1997. *Id.* The Luo patent describes a formulation of chewing gum comprising a gum base, a bulking agent, and a cooling composition comprising menthol and an N-substituted-p-menthane carboxamide. *Id.* The Luo patent discloses that chewing gum base can be present in "amounts up to 99%, preferably from about 40% to about 85%, and more preferably from about 40% to about 75%." *Id.* at 11:29-32. The Luo patent then discloses that bulking agents "may be used in [a]mounts up to about 60%, and preferably in [a]mounts from about 25% to about 60%, by weight of the chewing gum composition." *Id.* at 12:13-16. Luo

⁵ The abstract contains a typographical error, referring to "menthanol," but the term "menthol" is used consistently in the patent.

also explains that sweetening agents may be used in chewing gum compositions “from about 0.001% to about 1%.” *Id.* at 13:26-28. The Luo patent discloses that “the amount of cooling composition present in an edible composition will be from about 0.01% to about 2% by weight of the edible composition.” *Id.* at 7:4-7. The cooling composition disclosed and described in the Luo patent comprises menthol and an N-substituted-p-menthane carboxamide. *Id.* In Claim 2 of the Luo patent, WS-3 is specifically claimed as the N-substituted-p-menthane carboxamide to be used in combination with menthol. *Id.* at 10:3-14. The Luo patent was not disclosed to the Patent Office during the prosecution of the ‘233 patent, but its PCT Publication No. WO 96/17524 was disclosed. Cadbury Mem., Ex. A, ‘233 Patent, Cover.

In addition to the ‘893 patent and the Luo patent, two patents owned by Procter & Gamble Company also are relevant to the Court’s analysis: Procter & Gamble owns U.S. Patent No. 5,451,404 issued to Furman (the “Furman patent”) and U.S. Patent No. 5,688,491 issued to Shahidi (the “Shahidi patent”). Procter & Gamble filed the Furman patent application on June 28, 1993, and the Furman patent issued on September 19, 1995. Cadbury Mem., Ex. V, Furman Patent, Cover. Procter & Gamble filed the Shahidi patent application on April 17, 1996, and the Shahidi patent issued on November 18, 1997. Cadbury Mem., Ex. HH, Shahidi Patent, Cover.

The Furman patent was disclosed to the Patent Office during the prosecution of the ‘233 patent. Cadbury Mem., Ex. A, ‘233 Patent, Cover. The Furman patent was not the subject of any of the Patent Examiner’s rejections. Cadbury Mem., Ex. C, Tab 2, at W000142-149; *id.*, Tab 8, at W000258-265; *id.*, Tab 13, at W000308-313. The Furman patent relates to cooling compositions that comprise a ketal and a secondary coolant, which could consist of either menthol, carboxamides, or mixtures of menthol and carboxamides. Cadbury Mem., Ex. V, Furman Patent, Cover. The Furman patent discloses that the claimed cooling composition could

be used in edible compositions, including chewing gum. *Id.* at 6:36-38. The Furman patent states that “menthol and specific carboxamides” are the most preferred secondary coolants to be used with a ketal. Cadbury Mem., Ex. V, Furman Patent, at 4:35-36. The Furman patent states that the most useful carboxamides for the claimed invention are the N-substituted-p-menthane-3-carboxamides described in the Watson patent and acyclic tertiary and secondary carboxamides described in the Rowsell patent. *Id.* at 4:41-48; 5:20-23. Both the Watson patent and the Rowsell patent are incorporated by reference in the Furman patent. *Id.* at 4:41-45.

The Rowsell patent relates to certain acyclic carboxamides that have a physiological cooling effect. Cadbury Mem., Ex. O, Rowsell Patent, at 1:48-55. The Rowsell patent discloses at least forty-eight different acyclic carboxamides, one of which is WS-23. *Id.* at 2:56-3:40. The Rowsell patent lists chewing gum as one potential edible composition that could contain the claimed carboxamides. *Id.* at 4:43-45; 5:37-39; 5:67-6:1. The Rowsell patent further states:

The active compound will be added to the recipe at a convenient point and in an amount sufficient to produce the desired cooling effect in the final product. As already indicated, the amount will vary depending up on the particular compound, the degree of cooling effect desired and the strength of other flavors. For general guidance, however, amounts in the range 0.1 to 5% by weight based on the total composition will be found suitable.

Id. at 6:7-13. The Rowsell patent also discloses how to make WS-23. *Id.* at 11:48-68.

The Furman patent contains two examples, one for a toothpaste composition and one for a mouth-rinse composition, that include menthol and WS-23 among other ingredients. Cadbury Mem., Ex. V, Furman Patent, at 8:20-9:7. In both examples, the menthol added is stipulated as menthol from peppermint oil and not “added as menthol.” *Id.* at 8:42, 9:6.

The Furman patent lists chewing gum along with several other edible compositions in which the claimed cooling compounds would “find particular utility.” Cadbury Mem., Ex. V, Furman Patent, at 6:65-67. Furman goes on to state that “the formulation of such confections

will be by ordinary techniques and according to conventional recipes.” *Id.* at 6:68-7:1. The cooling compound is to be added “in an amount sufficient to produce the desired cooling effect.” *Id.* at 7:2-5. The Furman patent then states that for oral compositions, the preferred amounts of the cooling compositions disclosed in the Rowsell patent are from 0.0500 to about 0.2000 by weight. *Id.* at 7:58-62.

The Furman patent claims mixtures of WS-23 and menthol along with a ketal. *Id.* at 10:46-51. Claim 10 of the Furman patent claims a composition wherein the secondary coolant present along with the ketal is menthol, WS-23, WS-3, or mixtures thereof. *Id.* Claim 11 claims the composition of Claim 10 with the further limitations that WS-23 is to be “present at a level from about 0.0500 to about 0.2000” percent by weight and menthol is to be “present at a level from about 0.0500 to 0.3500” percent by weight. *Id.* at 10:52-58.

The second relevant Procter & Gamble patent is the Shahidi patent, which is directed towards oral compositions comprising xylitol, copper bis-glycinate, and a carrier for these substances. Cadbury Mem., Ex. HH, Shahidi Patent, at 2:20-24. The Shahidi patent was not disclosed to the Patent Office during the prosecution of the ‘233 patent application. Cadbury SOF ¶ 54.

The Shahidi patent describes chewing gums along with dentrifices and mouthwashes as preferred embodiments of the claimed invention. Cadbury Mem., Ex. HH, Shahidi Patent, at 4:4-5. Xylitol, copper bis-glycinate, and a pharmaceutically acceptable carrier are set forth as the three essential components of the invention described in Shahidi. *Id.* at 2:55-56; 3:15; 3:65. Cooling agents, humectants, surfactants, stannous salts, flavoring agents, and sweeteners are some of the ingredients that are listed as other possible components of the claimed compositions. *Id.* at 4:14-16; 4:50-51; 5:35-36; 6:62-63; 7:13-14; 7:27-28. The Shahidi patent describes

cooling agents as a “preferred nonessential” component of the invention, and suitable cooling agents are given as those described in the Watson patent, the Rowsell patent, and two other patents. *Id.* at 4:14-20. The Rowsell and Watson patents are incorporated by reference into the Shahidi patent. *Id.* at 4:14-21. The Shahidi patent lists both WS-3 and WS-23 as “particularly preferred cooling agents.” *Id.* at 4:21-26. The Shahidi patent also lists menthol as one of twenty-three possible flavoring agents that could be used. *Id.* at 7:13-14, 7:18. Shahidi then states that the “flavoring agents comprise from about 0.01% to about 5% * * * of the herein described composition.” *Id.* at 7:23-26.

The Shahidi patent also describes adding xylitol, mannitol, and sorbitol to chewing gum in amounts from 0.5 to 80 percent. *Id.* at 3:9-10. Xylitol, mannitol, and sorbitol are sweeteners. *Id.* at 3:3-5; see also Cadbury Mem., Ex. A, ‘233 Patent, at 17:32-38. The Shahidi patent also describes four chewing gum examples, and each includes a gum base in an amount of 25 percent by weight. Cadbury Mem., Ex. HH, Shahidi Patent, at 9:28-10:8.

C. Commercial Success of Wrigley’s Chewing Gum Products Covered by the ‘233 Patent

Wrigley provides information describing the commercial success of its gum products covered by Claim 34 of its ‘233 patent. Wrigley’s Doublemint, Eclipse, Orbit, Orbit White, Winterfresh, Spearmint, and select Excel formulas are covered by Claim 34 of the ‘233 patent. Wrigley SOAF ¶ 36; Cadbury Resp. SOAF ¶ 36. Wrigley’s Orbit, Orbit White, Eclipse, Winterfresh, and Spearmint all have had large commercial sales. *Id.* Several factors have contributed to this commercial success. The Orbit Launch Analysis identifies packaging and marketing as two factors that contributed to the success of Orbit. *Id.* Amounts of gum base and sweetener were also factors identified by Wrigley as driving Orbit’s success. *Id.*

Wrigley also submitted evidence of a licensing agreement and evidence showing that Cadbury reformulated some of its chewing gums to include WS-23 in an effort to show patent validity. A licensing agreement between Hershey and Wrigley gives Hershey the right to make products that are encompassed by Claim 34 of Wrigley's '233 patent. Wrigley SOAF, Ex. 27, at 1. In an effort to reformulate their chewing gums, Cadbury added WS-23 to its gums' existing cooling systems. Cadbury Resp. SOAF ¶ 37.

A person of ordinary skill in the art for the purposes of the '233 patent would have at least a bachelor's degree in a science-related field, such as chemistry, biology, or food science, and 3-5 years of experience in food science, flavor chemistry, oral product formulations, or gum and confectionary manufacturing, or an advanced degree in related sciences and work in the fields of chewing gum, confections, or flavor chemistry. Wrigley SOAF ¶ 40.

D. The '893 Patent

Cadbury asserts that Wrigley's chewing gum products infringe Claims 1-3 and 6 of the '893 patent and that Wrigley's mint products infringe Claims 12, 13, and 17 of the '893 patent. Wrigley SOF ¶ 5. According to Cadbury, the accused Wrigley products infringe the '893 patent either literally or under the doctrine of equivalents. Wrigley moves for summary judgment of non-infringement. Claim 1 of the '893 patent reads as follows:

A chewing gum composition capable of providing long-lasting, breath freshening perception without bitterness comprising a gum base, a sweetener and a cooling composition comprising menthol and an N-substituted-p-menthane carboxamide of the formula:

$C_6CO-NR_1R_2$ wherein R_1 , when taken separately, is selected from the group consisting of hydrogen, and an aliphatic radical containing up to 25 carbon atoms;

R_2 , when taken separately is selected from the group consisting of a hydroxy radical, and an aliphatic radical containing up to 25 carbon atoms, with the proviso that when R_1 is hydrogen, R_2 may also be an aryl radical of up to 10

carbon atoms and selected from substituted phenyl, phenalkyl, naphthyl and substituted naphthyl, and pyridyl; and

R₁ and R₂ when taken together, represent a cyclic or heterocyclic group of up to 25 carbon atoms.

Cadbury Mem., Ex. DD, '893 Patent, at 12:46-13:4 (emphasis added). Claims 2, 3, and 6 of the '893 patent all depend from Claim 1 and thus include all of the limitations of Claim 1. Wrigley SOF ¶¶ 11, 13, 15. Claim 12 of the '893 patent reads as follows:

A confectionary composition capable of providing long-lasting, breath freshening perception without bitterness comprising a confectionary matrix and a cooling composition comprising menthol and an N-substituted-p-menthane carboxamide of the formula:

C₆CO-NR₁R₂ wherein R₁, when taken separately, is selected from the group consisting of hydrogen, and an aliphatic radical containing up to 25 carbon atoms;

R₂, when taken separately is selected from the group consisting of a hydroxy radical, and an aliphatic radical containing up to 25 carbon atoms, with the proviso that when R₁ is hydrogen, R₂ may also be an aryl radical or up to 10 carbon atoms and selected from substituted phenyl, phenalkyl, naphthyl and substituted naphthyl, and pyridyl; and

R₁ and R₂ when taken together, represent a cyclic or heterocyclic group of up to 25 carbon atoms.

Cadbury Mem., Ex. DD, '893 Patent, at 13:44-14:5 (emphasis added).

During claim construction and prior to the transfer of this case to this Court, Judge Zagel defined several of the terms in the '893 patent.⁶ For purposes of this Court's analysis, the term "menthol" means "menthol, a distinct and separate substance, as distinguished from being present in mint oils." Mem. Op. [192] at 19. The term "N-substituted-p-menthane carboxamide" is "a class of molecules with the chemical formulas set forth in Claims 1 and 12 of the '893

⁶ See *supra* note 4. Cadbury filed a motion for reconsideration of Judge Zagel's *Markman* opinion as it relates to the parties' dispute over a disclaimer of a term relevant to the '893 patent. Judge Zagel denied Cadbury's objection to the wording in a specific sentence but granted the motion for reconsideration. See 07/09/07 Order [201]. In so doing, Judge Zagel made clear that "the opinion will stand as it is." *Id.*

patent.” *Id.* The term “N-ethyl-p-menthane-3-carboxamide” is “an N-substituted-p-menthane carboxamide known by the trade name WS-3.” *Id.* During claim construction, Judge Zagel construed the ‘893 patent to exclude “non-N-substituted-p-menthane carboxamides” from the claimed invention. *Id.* at 18. Although the ‘893 patent does not mention or criticize WS-23 (see Cadbury SOAF ¶¶ 2-3), Judge Zagel determined that statements in the disclosure and in Claims 1 and 12 amounted to “an expression of manifest restriction.” *Id.*

E. Wrigley’s Chewing Gum Products

The accused Wrigley chewing gum products all contain a gum base, a sweetener, and menthol. Wrigley Resp. SOAF ¶ 23. The accused Wrigley mint products are confectionary compositions that contain menthol. *Id.* ¶ 26. None of the accused Wrigley products contains an N-substituted-p-menthane carboxamide (such as WS-3); rather, all of the accused products contain WS-23 – an acyclic carboxamide. Wrigley SOF ¶ 18; Cadbury Resp. ¶ 18.

Cadbury also accuses some of Wrigley’s experimental chewing gum formulations of literally infringing Claims 1-3 and 6 of the ‘893 patent. Cadbury SOFX ¶ 7. Cadbury contends that Wrigley made experimental chewing gum formulations that included menthol and WS-3 and infringed the ‘893 patent claims. *Id.* ¶ 13. Specifically, Cadbury accuses Wrigley’s Eclipse Winterfresh Australia (Experimental 24N-167), Orbit Sweet Mint Pellet (3515-01Z and 3439-02N), and Excel Polar Ice (3484-01W) of infringing the ‘893 patent. Cadbury Cross-Motion Reply at 4-5. Wrigley responds that Cadbury has failed to demonstrate that any formulations contained each of the limitations of the ‘893 patent claims or that the allegedly infringing formulations were made in the United States.

Experimental 24N-167 is a pellet gum which contains menthol and WS-3. Wrigley SOAFX ¶ 1; Cadbury Resp. SOAFX ¶ 1. Several Wrigley employees stated in depositions that a

chewing gum pellet consisted of a chewing gum center and a coating. *Id.* Sonya Johnson, a U.S.-based Wrigley employee, listed ingredients used in Experimental 24N-167 and those used in a control gum that contained WS-23 and WS-3 in her laboratory notebook. *Id.*, Ex. I, at W160348. In addition, a weekly progress report stated that early testing for this research was “O.K.” and that subsequent testing was scheduled to take place in Australia. *Id.*, Ex. O, at W145596, W145608. The cited documents date back to May to July of 2002. *Id.* Similarly, Cadbury’s expert stated that the documents he reviewed indicated that the products had been made in the period from March to June of 2002. *Id.* Also, Johnson’s deposition testimony states that the early stage testing used “lab gum.” Cadbury takes this term, along with the report stating that early stage testing was “O.K.,” to mean that a chewing gum composition that contains menthol and WS-3 as listed in the notebook was made in Wrigley’s research and development department in the United States.

Orbit Sweet Mint Pellet 3515-01N and 3515-01Z both were identified as candidates for replacing WS-23 with WS-3. Cadbury Resp. SOAFX, Ex. O, at W145608. However, there is a dispute over where these gum formulations are made. It is undisputed that the *commercialized* 3515-01Z formulation is manufactured in St. Petersburg, Russia.⁷ Cadbury’s Resp. SOAFX ¶ 6. Wrigley has a research and development department in Chicago that supports the Wrigley corporation worldwide. *Id.* The document identifying replacement of WS-23 by WS-3 merely states that this formulation or another formulation is to be tested with WS-3 in “St. Pete” pending the results of another test. Cadbury Resp. SOAFX, Ex. O, at W145608. There is also a dispute as to whether there was a 3515-01N formulation made with WS-3 and if so, where it was made. The document cited states that pending the results of a different test, this formulation is to be

⁷ The parties dispute whether an *experimental* formulation including WS-3 was made, and whether it would in fact be made at all. See, *e.g.*, Cadbury Resp. SOAFX ¶ 6.

made “in Poznan” with WS-3. Cadbury Resp. SOAFX, Ex. O, at W145608. There is a Wrigley factory in Poznan, Poland. Cadbury Resp. SOAFX ¶ 4. Testing for the Poznan and St. Petersburg sweet mint formulas was scheduled. Cadbury Resp. SOAFX, Ex. S, at W156881-83.

Excel Polar Ice 3484-01W also was identified as a candidate for replacing WS-23 with WS-3. Cadbury Resp. SOAFX, Ex. O, at W145608. Documentation shows that 3484-01W or 3515-01N could be tested with WS-3 “in Poznan” by Wrigley. *Id.* It is not clear if 3484-01W was ever made, and if it was, where it was made. According to the expert testimony of Robert McGorin, Wrigley produced experimental Big Red, Eclipse Winterfresh, Orbit Sweetmint, and Excel Polar Ice formulations that contained gum base, sweetener, WS-3, and menthol. Cadbury SOFX ¶ 16., Ex. B, McGorin Report, at 13-14.

II. Analysis

Summary judgment is proper where “the pleadings, depositions, answers to the interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact that the moving party is entitled to a judgment as a matter of law.” Fed. R. Civ. P. 56 (c). In determining whether there is a genuine issue of fact, the Court “must construe the facts and draw all reasonable inferences in the light most favorable to the nonmoving party.” *Foley v. City of Lafayette, Ind.*, 359 F.3d 925, 928 (7th Cir. 2004). To avoid summary judgment, the opposing party must go beyond the pleadings and “set forth specific facts showing that there is a genuine issue for trial.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 250 (1986) (internal quotation marks and citation omitted).

A genuine issue of material fact exists if “the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” *Anderson*, 477 U.S. at 248. The party seeking summary judgment has the burden of establishing the lack of any genuine issue of material fact.

See *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986). Summary judgment is proper 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.” *Id.* at 322. The non-moving party “must do more than simply show that there is some metaphysical doubt as to the material facts.” *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986). “The mere existence of a scintilla of evidence in support of the [non-movant's] position will be insufficient; there must be evidence on which the jury could reasonably find for the [non-movant].” *Anderson*, 477 U.S. at 252. Summary judgment is “as appropriate in a patent case as in any other.” *Avia Group Int’l, Inc. v. L.A. Gear Cal., Inc.*, 853 F.2d 1557, 1561 (Fed. Cir. 1988), abrogated on other grounds by *Egyptian Goddess, Inc. v. Swisa, Inc.*, 543 F.3d 665 (Fed. Cir. 2008). Questions of patent validity and of infringement are both amenable to summary judgment. *Id.*

A. The Validity of the ‘233 Patent

Patent validity is a question of law, not fact. *Avia*, 853 F.2d at 1562. A patent is presumed to be valid, and the party alleging invalidity must “establish facts, by clear and convincing evidence, which persuasively lead to the conclusion of invalidity.” *Id.*; 35 U.S.C. § 282.

Cadbury moves for summary judgment, arguing that Claim 34 of Plaintiff Wrigley’s ‘233 patent is invalid as a matter of law under the doctrines of anticipation and obviousness. Cadbury first argues that Claim 34 was anticipated by the Furman patent, the Shahidi patent, and the Luo patent. Cadbury also argues that Claim 34 is obvious in view of the Luo patent and the Parrish article. The Court agrees that Claim 34 was anticipated by the Shahidi patent and also that Claim 34 is obvious.

1. Anticipation

35 U.S.C. § 102(b) will bar issuance of a patent if “the invention was patented or described in a printed publication in this or a foreign country * * * more than one year prior to the date of the application for patent in the United States.” A patent is invalid on anticipation grounds if “a single prior art reference discloses each and every limitation of the claimed invention.” *Schering Corp. v. Geneva Pharm., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003) (citing *Lewmar Marine, Inc. v. Bariant, Inc.*, 827 F.2d 744, 747 (Fed. Cir. 1987)). A single prior art reference will anticipate the claimed invention if it either expressly or inherently discloses each and every claim limitation. *Id.* at 1379. Anticipation is a question of fact. *Smithkline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1343 (2005). However, “without genuine factual disputes underlying the anticipation inquiry, the issue is ripe for judgment as a matter of law.” *Id.*

A prior patent is anticipatory if one of skill in the art would be able to combine the information in the prior patent with his own knowledge of the art to make the claimed invention. *Gen. Elec. Co. v. Hoechst Celanese Corp.*, 740 F. Supp. 305, 313 (D. Del. 1990). A prior patent can anticipate a later claimed invention even if the prior patent only suggested the claimed invention, as long as those suggestions are enabling to one of ordinary skill in the art. *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1379 (Fed. Cir. 2001). The suggestions need not actually be performed in the prior patent to be anticipatory. *Id.* Enablement of a prior art reference may be demonstrated by other prior art references. *Id.* Even though anticipation analysis requires all of the limitations of a claimed invention to be present in a single prior art reference, other references may be used to show that the claimed process was known by or would have been obvious to one of ordinary skill in the art more than one year prior to the patentee’s filing date. *Id.*

a. The Furman patent

Cadbury first argues that Furman patent describes every claim limitation of Claim 34 of the '233 patent, and that therefore Claim 34 is invalid for anticipation as a matter of law. Cadbury contends that Furman describes using both menthol and WS-23 in a cooling composition for chewing gums in amounts that are encompassed in the ranges set forth in Claim 34. Wrigley responds that the Furman patent did not disclose the combination of menthol and WS-23 in a chewing gum composition, and that the Furman patent does not provide guidance or direction to combine WS-23 and menthol in a gum composition that includes all of the ingredients in the amounts specified in Claim 34. Wrigley has the better argument.

The Furman patent application was filed on June 28, 1993, and the patent issued on September 19, 1995. Since the Furman patent issued more than one year before the '233 patent application was filed, it is prior art for the purposes of Section 102(b). See *Bristol Myers*, 246 F.3d at 1379. The PTO considered the Furman patent during the prosecution of the '233 patent; thus the '233 patent was allowed over Furman. See Cadbury Mem., Ex. A, '233 Patent, Cover. While a patent examiner's decision with respect to anticipation is not binding on this Court, it is material evidence that the Court "must consider in determining whether the party asserting invalidity has met its statutory burden by clear and convincing evidence." *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1555 (Fed. Cir. 1985).

The Furman patent relates to cooling compositions that comprise a ketal and a secondary coolant, which could consist of either menthol, carboxamides, or mixtures of menthol and carboxamides. Cadbury Mem., Ex. V, Furman Patent, Cover. Furman describes combining the claimed cooling composition with an edible carrier and a flavoring or coloring agent, and chewing gum is listed as a particularly useful product to make with this combination. *Id.* at 6:59-

7:8. Furman goes on to state that chewing gum using the disclosed cooling composition will be made by “ordinary techniques and according to conventional recipes.” *Id.* Furman incorporates the Rowsell patent by reference, which describes and claims acyclic carboxamides such as WS-23. In Claim 10, Furman claims a cooling composition requiring a ketal, and then as secondary coolants menthol, WS-23, and WS-3, and mixtures of them. The amount for this coolant is then claimed in Claim 11 as including a ketal in an amount from 0.05 to 0.1 percent by weight, WS-23 in an amount from 0.05 to 0.2 percent by weight, and menthol in an amount from 0.05 to 0.35 percent by weight.

Claim 34 of the ‘233 patent claims a chewing gum composition comprising a chewing gum base in an amount from 5 to 95 percent by weight, sweeteners and bulking agents from 5 to 95 percent by weight, and a flavoring agent from 0.1 to 10 percent by weight, where the flavoring agent comprises WS-23 and menthol. Cadbury Mem., Ex. A, ‘233 Patent, at 56:41-47. Furman discloses the combination of menthol and WS-23 as a cooling agent in chewing gum. However, the limitations of Claim 34 requiring gum base, sweeteners, and bulking agents as part of the chewing gum are not disclosed in Furman. In order to be enabling, a prior art reference must “[disclose] each and every limitation of the claimed invention.” *Schering*, 339 F.3d at 1377. Instead of describing chewing gums that can be made with gum base, sweeteners and bulking agents, and flavoring agents in the amounts listed in Claim 34, Furman states that chewing gums can be made “according to conventional recipes.”

Cadbury argues that “conventional recipes” for chewing gums necessarily encompass the limitations of Claim 34 not expressly set forth in Furman. However, whether or not each and every claim limitation is present in a prior art patent is a question of fact. See *Smithkline*, 403 F.3d at 1343. Therefore, whether or not “conventional recipes” encompasses the limitations set

forth in Claim 34 is a question of fact and precludes a finding of anticipation by Furman for summary judgment purposes.

b. Shahidi patent

Cadbury next argues that the Shahidi patent anticipates the '233 patent by disclosing chewing gum compositions that contain both menthol and WS-23. Cadbury also argues that the Shahidi patent discloses chewing gum compositions containing a gum base and sweetener in amounts that overlap with those claimed by Claim 34 of the '233 patent. In response, Wrigley contends that the Shahidi patent does not disclose using a combination of menthol and WS-23 in chewing gum and that to arrive at such a combination from the teachings of the Shahidi patent would require undue experimentation. Wrigley Mem. at 12. The Court concludes that the Shahidi patent anticipates Wrigley's '233 patent.

The application for the Shahidi patent was filed on April 17, 1996, and the patent issued on November 18, 1997. As the Shahidi patent issued and was published more than one year before the filing of the '233 patent (applied for March 16, 2000 and issued on September 30, 2003), it is prior art for the purposes of Section 102(b). See 35 U.S.C. § 102(g); *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577-78 (Fed. Cir. 1996). The Shahidi patent was not disclosed to the PTO during the prosecution of the '233 patent, so it was not considered when deciding whether or not to allow Claim 34. The fact that Shahidi was not considered by the PTO does not weaken the presumption that Claim 34 is valid; rather, it serves as evidence that must be considered in determining whether Cadbury has met its burden of showing invalidity through clear and convincing evidence. See *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1534 (Fed. Cir. 1983).

The Shahidi patent is directed towards oral compositions, including gums, which contain xylitol, copper bis-glycinate, and a carrier for these substances, with a purpose of combating infections in the mouth, including anti-gingivitis and anti-plaque benefits. Cadbury Mem., Ex. HH, Shahidi Patent, at 2:55-56, 3:15, 3:65, 4:4-5. The Shahidi patent describes chewing gums as a preferred embodiment of the claimed invention. *Id.* at 8:26-28; *id.* at 9:28-42. Shahidi discloses the use of WS-23, menthol, and sweeteners as optional components of the claimed invention. Specifically with respect to chewing gum, Shahidi includes examples of chewing gum compositions containing 25 percent by weight gum base, 1.7 percent by weight flavor, and 20 percent or 55.1345 percent by weight xylitol (a sweetening agent). *Id.* In addition, menthol was listed as one of twenty-three possible flavoring agents “most suitable” for the claimed invention. *Id.* at 7:13-26. These optional flavoring agents “comprise from about 0.01% to about 5.0%, preferably from about 0.05% to about 2.0%, and most preferably from about 0.1% to about 1.0%” of the composition of the claim invention. *Id.* Finally, Shahidi discloses cooling agents as nonessential, but preferred, components of the claimed invention. *Id.* at 4:14-16. In particular, Shahidi teaches that suitable cooling agents are those covered by, for example, the Rowsell patent and the Watson patent, and incorporates them by reference. *Id.* at 4:16-21. The Shahidi patent goes on to teach that “particularly preferred cooling agents are [WS-3] and [WS-23]” as taught by the Rowsell patent. *Id.* at 21-27. The Rowsell patent, incorporated by reference, discloses adding acyclic carboxamides such as WS-23 in the amount of 0.1 to 5 percent by weight. Cadbury Mem., Ex. O, Rowsell Patent, at 6:7-13.

Materials that have been incorporated by reference may be considered for purposes of anticipation analysis. *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) (“Material not explicitly contained in the single, prior art document may still be

considered for purposes of anticipation if that material is incorporated by reference into the document.”); see also *Ultradent Prods., Inc. v. Life-Like Cosmetics, Inc.*, 127 F.3d 1065, 1069 (Fed. Cir. 1997) (holding that material incorporated by reference into a document may be considered in an anticipation determination). “Incorporation by reference provides a method for integrating material from various documents into a host document – a patent or printed publication in an anticipation determination – by citing such material in a manner that makes clear that the material is effectively part of the host documents as if it were explicitly contained herein.” *Advanced Display*, 212 F.3d at 1282 (citations omitted). Whether and to what extent material has been incorporated by reference into a host document is a question of law. *Id.* at 1283 (citation omitted). It is to be viewed from “the standard of one reasonably skilled in the art [] to determine whether the host document describes the material to be incorporated by reference with sufficient particularity.” *Zenon Envtl., Inc. v. United States Filter Corp.*, 506 F.3d 1370, 1378-1379 (Fed. Cir. 2007). Thus, “if incorporation by reference comes into play in an anticipation determination, the court’s role is to determine what material in addition to the host document constitutes the single reference.” *Advanced Display*, 212 F.3d at 12982 (citations omitted). Here, the Court finds that the incorporation by reference of the Rowsell patent – and, in particular, Shahidi’s direction to Rowsell as teaching the use of WS-23, one of its preferred cooling agents for the claimed invention – is disclosed with sufficient particularity.

If the prior art discloses a range that falls within the range disclosed in the challenged patent claim, then the prior art disclosure anticipates the patent claim. *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999). Through Shahidi’s specification and the incorporation by reference of the Rowsell patent, the Shahidi patent sets forth all of the elements of Claim 34 in amounts that fall within the ranges given in Claim 34. Thus, there can be no

genuine factual dispute with respect to the disclosure of all of the elements of Claim 34 in the Shahidi patent. Cadbury thus has shown by clear and convincing evidence that, at a minimum, the Shahidi patent encompasses every claim limitation of Claim 34.

However, the analysis does not end there. In order for the Shahidi patent to anticipate Claim 34 as a prior art reference, it also must “be enabling, such that one of ordinary skill in the art could practice the invention without undue experimentation.” *Novo Nordisk Pharm., Inc. v. Bio-Tech. Gen. Corp.*, 424 F.3d 1347, 1355 (Fed. Cir. 2005) (citation omitted). “Whether a prior art reference is enabling is a matter of law based upon underlying factual findings.” *Id.*

When evaluating enablement for anticipatory purposes, the determination of what constitutes undue experimentation must be determined with respect to the viewpoint of one of ordinary skill in the art, and routine experimentation is permissible. *Elan Pharm., Inc. v. Mayo Found. for Med. Educ. & Research*, 346 F.3d 1051, 1055 (Fed. Cir. 2003). The requirement for enablement of an anticipatory reference is not as high as the requirement set forth in 35 U.S.C. § 112. *Novo Nordisk*, 424 F.3d at 1355. For example, there is no requirement under 35 U.S.C. § 102 (b) that the prior art reference enable someone to use the invention, and thus there is no requirement that an anticipatory reference disclose “actual performance of suggestions in the disclosure. Rather, anticipation only requires that those suggestions are enabled to one of skill in the art.” *Id.* (quoting *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1379 (Fed. Cir. 2001)).

When a prior art patent is asserted as evidence of an invalidity defense in an infringement action, as is the case here, the Court must presume that the prior art patent enabled and the patentee has the burden of proving that it is not enabled. *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1355 (Fed. Cir. 2003). If the patentee satisfies that burden by setting forth

“evidence of nonenablement that a trial court finds persuasive, the trial court must then exclude that prior art patent in any anticipation inquiry.” *Id.*

Wrigley argues that the Shahidi patent does not enable one of ordinary skill in the art to practice the invention in Claim 34 without undue experimentation because of the sheer number of potential chewing gum ingredients disclosed and the fact that the Shahidi patent made no mention of a combination of WS-23 and menthol. Shahidi does not need to set forth examples of a chewing gum composition containing all of the elements of Claim 34 to anticipate it. See *Novo Nordisk*, 424 F.3d at 1355; *Schering*, 339 F.3d at 1380 (citing *In re Donohue*, 766 F.2d 531, 533 (Fed. Cir. 1985) (“Anticipation does not require the actual creation or reduction to practice of the prior art subject matter; anticipation requires only an enabling disclosure.”)); *In re Donohue*, 766 F.2d 531, 533 (Fed. Cir. 1985) (“It is not [] necessary that an invention disclosed in a publication shall have actually been made in order to satisfy the enablement requirement.”). Rather, if one of ordinary skill in the art could make a chewing gum comprising 5 to 95 percent gum base, 5 to 95 percent sweetening and bulking agents, and 0.1 to 10 percent flavoring agent, where the flavoring agent comprised a combination of menthol and WS-23, using the teachings in the Shahidi patent and the knowledge in the art at the time of the Shahidi patent, then the Shahidi patent anticipates Claim 34.

Claim 34 describes only a chewing gum composition, and there is no mention of any special effect obtained through the combination of WS-23 and menthol. Moreover, the only novel aspect of Claim 34 is the combination of WS-23 and menthol, and it is undisputed that that one of skill in the art could make a chewing gum composition comprising a gum base, sweetening and bulking agents, and a flavoring agent in the amounts set forth in Claim 34 at the time of the Shahidi patent. The Shahidi patent itself contains examples of chewing gums that

contain gum base, sweeteners, and flavoring agents in amounts that fall within the ranges listed in Claim 34. See Cadbury Mem., Ex. HH, Shahidi Patent, at 9:28-42. Shahidi lists menthol as a possible flavor ingredient (*id.* at 7:13-17), and it is undisputed that menthol was a well-known chewing gum ingredient at the time of the Shahidi patent, as evidenced by the disclosure of the '893 patent and the Parrish article, both discussed above. One of ordinary skill in the art certainly would have been able to make a chewing gum containing a gum base, a sweetener, and menthol in the required ranges based on Shahidi and the knowledge available in the art at the time.

The question then becomes whether one of ordinary skill in the art would have been able to add WS-23 in the claimed amount to the chewing gum composition just described at the time that the Shahidi patent issued. Shahidi lists WS-23 as a particularly preferred cooling agent and incorporates the Rowsell patent by reference, which teaches that WS-23 can be used in chewing gum and suggests an amount of from 0.1 to 5 percent by weight. Cadbury Mem., Ex. O, Rowsell Patent, at 6:7-13. The Rowsell patent also describes how to make WS-23. *Id.* Claim 34 does not set forth any requirement as to the end flavor or cooling sensation that is required from the combination of menthol and WS-23. Rather, both ingredients simply must be present in a combined amount of between 0.1 and 10 percent by weight. *Id.*, Ex. A, '233 Patent, at 56:41-47. Thus, under the broad reach of Claim 34, any combination of WS-23 and menthol falling within that range would suffice, regardless of the end-taste or flavor. As it is undisputed that one of skill in the art could make a chewing gum comprising all of the elements of Claim 34 except WS-23, and the Shahidi patent (with the Rowsell patent incorporated by reference into the Shahidi patent) provides direction for making and adding WS-23 to that chewing gum in the

requisite amount, the Shahidi patent sets forth all of the elements of claimed 34 and does so in an enabling manner.

Moreover, the Court must presume the Shahidi patent to be enabled with respect to both its claimed and unclaimed subject matter. *Amgen*, 314 F.3d at 1355. The patentee has the burden of proving that Shahidi is not enabling with respect to Claim 34. *Id.* Wrigley has failed to provide evidence that Shahidi would not enable one of skill in the art to *make* the chewing gum described in Claim 34. Rather, all of Wrigley's arguments center around the challenge of *selecting* all of the elements of Claim 34 and putting them into a chewing gum. Wrigley argues that Shahidi provides no "guidance or direction" to combine WS-23 and menthol together in a chewing gum. But the Court has found no authority supporting Wrigley's arguments in that respect. An obviousness analysis requires some suggestion or motivation to combine prior art teachings in a way that would render the patented subject matter obvious (see, *e.g.*, *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1323-24 (Fed. Cir. 1999)), but an anticipation analysis requires no such direction or guidance (*Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1364 (Fed. Cir. 2008) ("The tests for anticipation and obviousness are different.")). As long as all of the claimed elements are present in a prior art reference and that reference is enabling, the claim is anticipated. Indeed, even if the prior art disparages or teaches away from the claimed invention, it still is anticipatory if it discloses and enables the claimed invention. *Celeritas Techs., Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998) ("A reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. Thus, the question whether a reference 'teaches away' from the invention is inapplicable to an anticipation analysis.")). Therefore, the fact that Shahidi does not give any guidance or direction towards combining menthol and WS-23 in a chewing gum is irrelevant for the purposes of an anticipation analysis.

Similarly, the mere fact that the elements of a claim are set forth in the prior art patent in a list along with other ingredients without any “special emphasis” is irrelevant to an anticipation analysis. *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1376 (Fed. Cir. 2005) (“This court rejects the notion that one of these ingredients cannot anticipate because it appears without special emphasis in a longer list.”). Instead, all that is relevant is whether the prior art disclosure is enabling. *Id.* In *Perricone*, the patentee had claimed a process for treating different forms of skin damage by using ascorbyl fatty acid ester with a dermatologically-accepted carrier. *Id.* at 1371. The prior art reference that was cited as anticipating the patentee’s claims was directed towards a “cosmetic composition for topical application” and listed the claimed ascorbyl fatty acid ester along with thirteen other suitable “skin benefit ingredients.” *Id.* at 1376. In addition to skin benefit ingredients, emollients, emulsifiers, and thickeners also were listed. *Id.* Even though the claimed ingredient was present in the prior art patent in a list along with other suitable ingredients, the Court held that the prior art patent anticipated the claimed compound. *Id.* Similarly, Shahidi lists menthol along with twenty-three other optional flavoring agents and states that these flavoring agents can be used in the invention in amounts from 0.01 to 5 percent by weight. Cadbury Mem., Ex. HH, Shahidi Patent at 7:16-24. Shahidi also lists WS-23 along with WS-3 as a “particularly preferred” cooling agent. *Id.* at 4:21-26. The Rowsell patent, incorporated by reference, instructs that WS-23 can be used in amounts from 0.1 to 5 percent by weight in chewing gum. *Id.*, Ex. O, Rowsell Patent, at 6:7-13. Thus, Shahidi discloses that both compounds can be used in a chewing gum in amounts within the claimed ranges in an enabling manner. Shahidi specifically discloses WS-23 and menthol, so this is not a case where a broad genus of compounds is disclosed and allegedly anticipates a species. (The genus/species issue would come into play if Shahidi only had disclosed acyclic carboxamides as cooling agents.

However, Shahidi specifically mentions WS-23 as a preferred cooling agent.) In short, Cadbury has shown through clear and convincing evidence that the Shahidi patent anticipates Claim 34. Shahidi sets forth each of the claimed elements in the appropriate amounts and is enabling. Thus, Claim 34 is invalid on anticipation grounds.

c. Luo patent

Cadbury also argues that the Luo patent anticipates Claim 34 because it discloses a chewing gum composition using WS-3 and menthol as the cooling agent and incorporates Furman, which discloses WS-23, by reference. Furman discloses the use of WS-3, WS-23, and menthol as cooling agents in chewing gum, as described above. Cadbury Mem., Ex. V, Luo Patent, at 10:46-51. The Court concludes that the Luo patent does not anticipate Claim 34 of the '233 patent.

The Luo patent, owned by Cadbury, is directed towards a cooling composition consisting of menthol and N-substituted-p-menthane carboxamides, which can be used in chewing gum. Cadbury Mem., Ex. N, Luo Patent, at 2:42-48; Cover. N-ethyl-p-menthane-3-carboxamide, known as WS-3, is an N-substituted-p-menthane carboxamide. Cadbury Mem., Ex. W, Parrish Article, at 1. In the Luo patent, WS-3 is specifically described as the carboxamide in a preferred embodiment. Cadbury Mem., Ex. N, Luo Patent, at 4:66-5:2. The amount of carboxamide present in the cooling composition is between 0.001 to 6 percent by weight. The amount of cooling composition in the gum is between 0.01 and 2 percent by weight of the edible composition. *Id.* at 7:4-7. However, the Luo patent does not mention WS-23 at all, and only mentions acyclic carboxamides once in reference to a PCT patent application that discloses the use of acyclic carboxamides along with WS-3 as cooling agents. As the Luo patent does not in

itself disclose WS-23, it could not anticipate Claim 34 unless it incorporated Furman by reference.

As described above, material that has been incorporated by reference may be considered for purposes of anticipation. *Advanced Display*, 212 F.3d at 1282. In order to incorporate Furman by reference, the Luo patent must “identify with *detailed particularity* what *specific material* it incorporates and clearly indicate where that material is to be found.” *Id.* (emphasis added). The determination of whether material has been incorporated by reference, and if so to what extent, is a question of law, and “the standard of one reasonably skilled in the art should be used to determine whether the host document describes the material to be incorporated by reference with sufficient particularity.” *Zenon Env'tl.*, 506 F.3d at 1378-1379. The Luo patent does cite to the Furman PCT application⁸ as disclosing a cooling composition consisting of a ketal as the primary coolant and WS-3 as a possible secondary cooling composition. Cadbury Mem., Ex. N, Luo Patent, at 2:28-35. At the end of the Luo patent, there is a statement incorporating by reference all of the previously cited publications. *Id.* at 19:46-49. The Luo patent does not even mention that Furman discloses WS-23, let alone set forth that fact in detail, in comparison, for example, with the clear direction in Shahidi when incorporating Rowsell’s teachings on the proper use of WS-23. Here, Luo only generally states that Furman discloses WS-3 in combination with a ketal. There is no reason to believe that one of ordinary skill in the art would consider Luo to incorporate the material Furman directed towards the use of WS-23 as a cooling agent. As a matter of law, the Luo patent does not sufficiently incorporate Furman’s disclosure of WS-23 by reference. Thus, Luo does not anticipate Claim 34 of the ‘233 patent.

⁸ The Furman patent is cited as WO 93/23005. See Cadbury SOF ¶ 76.

2. Obviousness

Cadbury argues that Claim 34 of the '233 patent is invalid for obviousness in view of the Luo patent in combination with the Parrish article. Specifically, Cadbury contends that because the Luo patent discloses every limitation of Claim 34 with the exception of WS-23, and the Parrish article discusses the use of both WS-3 and WS-23 as cooling agents in chewing gums, that it would have been obvious for one of ordinary skill in the art to substitute WS-3 for WS-23 in the chewing gum disclosed by Luo. The Court agrees.

The Luo patent was not disclosed to the Patent Office during the prosecution of the '233 patent, but its PCT Publication No. WO 96/17524 was disclosed. Cadbury Mem., Ex. A, '233 Patent, Cover. The Parrish article was not considered by the PTO during the prosecution of the '233 patent application. Cadbury SOF ¶ 24.

35 U.S.C. § 103 will bar issuance of a patent when “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 to which said subject matter pertains.” The party alleging invalidity of a patent because of obviousness must show prior art references that either alone or combined with other references would render the claimed invention obvious to one of ordinary skill in the art. *Al-Site*, 174 F.3d at 1323. The concern with granting patents for obvious combinations of known elements is that doing so allows parties to obtain a monopoly over what is already known in a particular field. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007). To do so would “retard progress” and may also “deprive prior inventions of their value or utility.” *Id.* at 1741.

The basic framework for determining obviousness was set forth in *Graham v. John Deere Co. of Kansas City* through a four-part test:

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 to be 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.

383 U.S. 1, 17-18 (1966). Secondary considerations can be objective indicia of nonobviousness. *Id.* at 18. In addition, courts have recognized copying as a secondary consideration. See *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1572 (Fed. Cir. 1996).

Although patent validity is a question of law, an obviousness inquiry involves factual determinations within the framework of the *Graham* factors. See *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 280 (1976) (citing *Great A. & P. Tea Co. v. Supermarket Corp.*, 340 U.S. 147, 155 (1950); *Graham*, 383 U.S. at 17). The Court begins its obviousness analysis by addressing the *Graham* factors.

a. Scope and content of the prior art

There are no genuine issues of material fact related to the scope and content of the prior art. The disclosure status of both the Luo patent and the Parrish article are undisputed by the parties. Wrigley Resp. ¶ 24; Cadbury Mem., Ex. A, ‘233 Patent, Cover. In addition, there is no dispute that the Luo patent and the Parrish article are part of the relevant prior art for the ‘233 patent, as they were in print more than one year before the filing date of the ‘233 patent. See 35 U.S.C. § 102(b).

As discussed above, the Luo patent discloses a chewing gum composition containing a cooling agent comprising menthol and WS-3. Luo discusses chewing gum compositions in

which gum bases may be employed in amounts up to 99 percent, bulking and sweetening agents may be used in amounts up to 60 percent, and a cooling composition can be used in amounts from about 0.01 to 2 percent by weight. The cooling composition described and claimed contains menthol and WS-3. Cadbury Mem., Ex. N, Luo Patent, at 11:29-32; *id.* at 12:13-16; *id.* at 7:4-7.

The Parrish article describes the research that was done at Wilkinson-Sword to address the problems associated with using high levels of menthol as a cooling agent in consumer products. Cadbury Mem., Ex. W, Parrish article, at 1. While menthol had long been known and used for its ability to act as a cooling agent, high levels of menthol can produce a bitter flavor. Cadbury SOF ¶ 22. Thus, the researchers at Wilkinson-Sword attempted to create other compounds that would mimic the cooling effects of menthol without the accompanying bitterness. Cadbury Mem., Ex. W, Parrish article. The article teaches that 1200 compounds were discovered as meeting these criteria, and of those 1200, two were selected for commercialization. *Id.* at 1. Those two compounds were WS-23 and WS-3, which were selected because they exhibited “low toxicity,” “low volatility, low odour”, and “stability in use.” *Id.* Parrish describes WS-3 and WS-23 as compounds of “high quality” without the side effects of “tingling, stinging, or burning sensations.” *Id.* In the Parrish article, chewing gum is listed as one of the compounds in which WS-3 and WS-23 can be used, and the appropriate range is identified as 0.5 to 1 percent by weight. *Id.*

b. Differences between the prior art and the claims at issue

There also are no genuine issues of material fact as to the differences between the prior art and Claim 34 of the ‘233 patent. Claim 34 of the ‘233 patent includes gum base from 5 to 95 percent by weight, sweetening and bulking agents in amounts from 5 to 95 percent by weight,

and a flavoring agent comprising menthol and WS-23 in amounts from 0.1 to 10 percent by weight. Cadbury Mem., Ex. A, '233 Patent, at 56:41-47. The Luo patent discloses chewing gum formulations in which the gum base can be present in amounts up to 99 percent by weight, bulking and sweetening agents may be used in amounts up to 60 percent by weight, and a cooling composition comprising WS-3 and menthol can be used in amounts from 0.01 to 2 percent by weight. The Parrish article discusses the potential for use of WS-23 and WS-3 as cooling agents in a variety of products, including chewing gum, and the amount suggested for use is between 0.5 and 1 percent by weight.

Therefore, it is undisputed that the combination of WS-23 with menthol in chewing gum is the only difference between the '233 patent and the Luo patent, which instead discloses the combination of WS-3 and menthol. Moreover, it is undisputed that the only novel aspect of Claim 34 is the combination of WS-23 and menthol as a cooling agent in chewing gum. Wrigley Resp. ¶ 12. It also is undisputed that the Parrish article discloses the use of WS-23 and WS-3 as a cooling agents in chewing gum. *Id.* at ¶ 23.

The ranges for all of the ingredients set forth in Claim 34 overlap with the ranges for the corresponding ingredients set forth in Luo and Parrish. Thus, the prior art and the '233 patent clearly set forth the same amounts to be used for each of the ingredients in Claim 34, and there is no issue as to whether it would have been obvious to use the amounts of chewing gum ingredients set forth in Claim 34. The remaining question that the Court must decide is whether it would have been obvious for one of ordinary skill in the art to make a chewing gum with a cooling agent comprising menthol and WS-23 based on the combination of Luo's disclosure of a chewing gum with a cooling composition comprising WS-3 and menthol and Parrish's disclosure of the use of WS-23 and W-3 as cooling agents in a chewing gum.

c. Level of skill in the art

There is no material question of fact as to the level of skill in the art. A person of ordinary skill in the art for the purposes of this case would have at least a bachelor's degree in a science-related field, such as chemistry, biology, or food science, and 3-5 years of experience in food science, flavor chemistry, oral product formulations, or gum and confectionary manufacturing, or an advanced degree in related sciences and work in the fields of chewing gum, confections, or flavor chemistry. Wrigley SOAF ¶ 40.

The Federal Circuit has established the “teaching, suggestion, or motivation” test (“TSM test”) to determine whether an invention would have been obvious to one of ordinary skill in the art in light of the prior art of record. The TSM test provides that a claim will be rendered obvious based on the prior art only if there is “some motivation or suggestion to combine the prior art teachings” in either the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art. See, e.g., *Al-Site*, 174 F.3d at 1323-1324. The fact that all of the elements of a claimed invention were present in the prior art does not automatically render the invention obvious, because in most cases new inventions build on what already was known. *KSR*, 127 S. Ct. at 1740. Thus, there must be some suggestion or motivation to combine the elements as is done in the claimed invention for that invention to be rendered obvious. *Id.*

In *KSR*, the Supreme Court clarified that the TSM test should not be reduced to a narrow, rigid formula. 127 S. Ct. at 1741. An “[obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* Also, a court may consider “interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background

knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 1740-1741. Therefore, there need not be an explicit statement in the prior art itself suggesting a patentee’s invention for that prior art to render a patentee’s invention obvious. Rather, a problem in the relevant field at the time of invention can serve as a reason to combine prior art elements. *Id.* at 1742. Furthermore, when a patentee’s invention involves a combination of elements already known in the prior art, then it is obvious unless “the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 1741; see also *Sakraida*, 425 U.S. at 282; *United States v. Adams*, 383 U.S. 39, 50-51 (1966).

Similarly, if a combination would have been “obvious to try” at the time of the invention, it could be rendered obvious in light of the prior art. *KSR*, 127 S. Ct. at 1742. For example, if there are “a finite number of identifiable, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.” *Id.* In such a situation, a combination that was “obvious to try” might be obvious under Section 103. *Id.* However, if the prior art teaches away from combining known elements, then an invention that successfully combines those elements is more likely to be nonobvious. *Adams*, 383 U.S. at 50-51.

The combination of menthol and WS-23 is the only novel aspect of Claim 34; the Luo patent disclosed a chewing gum composition with all of the other elements of Claim 34 in the correct amounts and also the combination of WS-3 and menthol as a cooling agent. The Parrish article describes using WS-3 or WS-23 as cooling agents in chewing gums in the amounts described in Claim 34. According to Parrish, after five years of research in which over 1,200

compounds that induced a cooling effect were identified, only WS-23 and WS-3 were produced. Further, WS-23 and other acyclic carboxamides had also been disclosed and claimed in the Rowsell patent, which issued in 1980. Thus, WS-23 was known in the prior art as a cooling agent before the filing date of the '233 patent. Claim 34 involves only a substitution of WS-3, a known cooling agent, for WS-23, another known cooling agent in a chewing gum. The combination of WS-23 and menthol does not produce unpredictable results in that the combination produces a cooling agent. Both WS-23 and menthol were known in the prior art as cooling agents that could be used in chewing gum, and Wrigley has not provided any evidence showing that one of skill in the art would have believed that the combination of these two compounds would not produce a cooling agent prior to the '233 patent. Moreover, the Luo patent was directed to the combination of menthol and WS-3, a different carboxamide, as a cooling agent for use in chewing gum and describes the benefits of this combination as opposed to the use of either compound by itself. See, *e.g.*, Cadbury Mem., Ex. N, at 3:32-44. Wrigley has failed to provide convincing evidence that one of ordinary skill in the art would be led to believe that, in light of Luo and the Parrish article, the combination of WS-23 and menthol would not produce a cooling agent that could be used in gum. As Claim 34 is directed to a combination of elements known in the art that perform their established functions without any unpredictable results, it is obvious.

While there is no explicit suggestion in either Luo or Parrish to combine WS-23 and menthol in a chewing gum, no such explicit suggestion is necessary. As the Supreme Court stated in *KSR*, a suggestion to combine can come from other sources such as market pressure or the desire to solve a particular problem. In *KSR*, the patentee's invention related to the structure of an adjustable pedal in an automobile, which included an electronic sensor which was attached

to the support structure of the pedal. 127 S. Ct. at 1737. Automobile pedals previously had been constructed to interact with the engine throttles manually, but with the advent of computer-controlled throttles pedals, the pedals needed to be constructed with sensors that could feed information to the computer. *Id.* at 1735. The first prior art patent at issue described the structure of an adjustable pedal, and the second prior art patent taught that sensors on pedals should be placed on fixed parts of the pedal assembly rather than on the footpad of the pedal. *Id.* at 1735-1736. There was no explicit motivation to combine the teachings set forth in either patent, because they were directed toward solving different problems. *Id.* at 1738-1739. However, the Supreme Court determined that the pertinent question in terms of obviousness was whether one of ordinary skill in the art, starting with an adjustable pedal, would find it obvious to place the sensor on the fixed part of the pedal structure as was done in the patent claim at issue. *Id.* at 1744. Because a second prior art patent taught that sensors should be placed on fixed points of the pedal structure, the claimed invention would have been obvious to one of ordinary skill in the art. *Id.* at 1744-1745. The Supreme Court determined that the need to adapt known automobile pedals to function with computer-controlled throttles was the relevant problem in the automotive field that would motivate one of ordinary skill to combine the prior art teachings to create the claimed pedal at issue. *Id.* at 1744.

By analogy, the use of cooling agents and breath-freshening flavors in chewing gums is well established in the chewing gum industry. Menthol has long been a popular cooling agent, but the bitterness associated with using large amounts of menthol has proved a continual problem. As described in the Parrish article, there has been a drive to discover other molecules that can be used as cooling compounds without the bitterness associated with menthol. Thus, one of ordinary skill in the art working in the chewing gum field would be well aware of the

desire to develop new cooling agents that would provide a heightened cooling sensation without bitterness. As in any industry, there would be a drive to develop new and improved chewing gums whose long-lasting, breath-freshening perception would appeal to consumers. It is difficult to conceive how one of ordinary skill in the chewing gum industry would not be aware of the need, and possessed of the drive, to develop new and improved cooling agents to provide more intense and longer lasting flavor. A person of skill in the art reading the Luo patent would be enlightened to the fact that menthol and WS-3, in combination, produce a chewing gum with a heightened and long-lasting cooling sensation. Against the backdrop of the drive in the art to develop new and improved cooling agents, a chewing gum developer would have had ample motivation to substitute WS-23, a known cooling agent that Parrish describes along with WS-3 as a cooling agent that could be used in chewing gums, for WS-3 in the chewing gum taught by Luo.

Wrigley argues that WS-3 and WS-23 are not interchangeable or equivalent and thus it would not have been obvious to substitute one for the other. However, there is no requirement that WS-3 and WS-23 be equivalent chemical compounds for Parrish and Luo to render Claim 34 obvious. As long as it would have been obvious to substitute WS-23 for WS-3, another known cooling agent, Claim 34 is rendered obvious. WS-23 and WS-3 both were known cooling agents, and Parrish suggested that both WS-23 and WS-3 could be used in chewing gum. Moreover, Parrish did describe similarities between WS-23 and WS-3 that would suggest WS-23 as a likely substitute for WS-3. Parrish stated that 1200 compounds were discovered, but of those 1200, only two were selected to be commercialized – WS-23 and WS-3 – because they both exhibited “low toxicity,” “low volatility, low odour,” and “stability in use.” See Cadbury Mem., Ex. W, Parrish Article, at 1-2. WS-3 and WS-23 also were described as compounds of

“high quality” without the side effects of “tingling, stinging, or burning sensations.” Based on those disclosures, it would have been obvious to one of ordinary skill in the art trying out new cooling agents to substitute WS-23 for WS-3 in the gum disclosed by Luo.

Wrigley also argues that Parrish taught that WS-23 and WS-3 could be used to replace menthol, and thus teaches away from a combination of WS-23 and menthol. However, the obviousness issue concerns the combination of the Luo patent and the Parrish article, not each separately. The Luo patent specifically discusses combining WS-3 and menthol and the positive results of the combination. The issue concerns whether it would have been obvious to substitute WS-23 for WS-3 in the teachings of the Luo patent, not whether it would have been obvious to combine menthol and WS-23 based solely on the Parrish article.

d. Secondary considerations

Wrigley argues that the secondary considerations of commercial success and copying are sufficient to render its patent non-obvious or at least present triable issues of fact that require denial of the summary judgment motion. Secondary considerations must be considered as part of the obviousness analysis and can rebut a prima facie case of obviousness. *Stratoflex*, 713 F.2d at 1538; *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1350 (Fed. Cir. 2000). Such considerations may establish “that an invention appearing to have been obvious in light of the prior art was not.” *Stratoflex*, 713 F.2d at 1538; see also *Ritchie v. Vast Res., Inc.*, 563 F.3d 1334, 1336 (Fed. Cir. 2009) (“The commercial success of a product can have many causes unrelated to patentable inventiveness; for example * * * [due to] skillful marketing of the product embodying the invention.”).

First, Wrigley argues that the gums it makes that are covered by Claim 34 are commercially successful. It is undisputed that Wrigley’s gums are commercially successful.

Wrigley SOAF ¶ 36; Cadbury Resp. SOAF ¶ 36. However, there must be some nexus “established between the merits of the claimed invention and the evidence of commercial success” (*Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir. 2004) (quoting *Solder Removal Co. v. USITC*, 582 F.2d 628, 637 (1978)), or else the evidence of commercial success is irrelevant to the obviousness determination. *Vandenburg v. Dairy Equip. Co.*, 740 F.2d 1560, 1567 (Fed. Cir. 1984). Specifically, there must be some evidence of a nexus between the combination of WS-23 and menthol in Wrigley’s chewing gums and the commercial success of those gums for commercial success to be relevant in the obviousness analysis. Wrigley has not provided such evidence. In the documents cited by both parties, many factors were identified as contributing to that success, including marketing efforts, the way in which the gum was packaged, the amounts of gum base and sweeteners used, and the cooling system used. Wrigley SOAF ¶ 36; Cadbury Resp. SOAF ¶ 36. However, the cooling system described in the cited documents contained menthol and WS-23 along with several other ingredients. Since the Court finds no evidence of any nexus between the success of Wrigley’s chewing gums covered by Claim 34 and the specific combination of menthol and WS-23, the fact that Wrigley’s gums are successful does not alter the obviousness analysis.

Wrigley also points to a license with Hershey under which Hershey agreed to pay royalties on chewing gum products that would infringe Claim 34. Wrigley SOAF, Ex. 27, at 1. However, a license in itself is not considered to be strong evidence of commercial success in the absence of a nexus between the claimed subject matter and the asserted commercial success. *Iron Grip*, 392 F.3d at 1324. The courts have so held because it is much cheaper to obtain a license than to pay for an infringement suit. *Id.* Because the Court can find no other evidence of a nexus between the commercial success of Wrigley’s chewing gums and the combination of

WS-23 and menthol, the Hershey license by itself is not sufficient evidence to overcome the strong prima facie case of obviousness that Cadbury has presented. See *id.*

Wrigley also argues that Cadbury copied Wrigley's gum formulations that are covered by Claim 34 in that it included menthol and WS-23 in its gum compositions. Copying of the claimed invention can constitute evidence of non-obviousness. *Iron Grip*, 392 F.3d at 1324. However, mere evidence of infringement is not enough to furnish objective indicia of non-obviousness. *Id.* Otherwise, every infringement suit would prove patent validity. *Id.* Instead, "copying requires the replication of a specific product" and can be shown by similarity of a competitor's *product* to the patented *product* as opposed to the patent claim. *Id.* Just as with the commercial success analysis, a nexus between the copying and the novel aspects of the claimed invention must exist for evidence of copying to be given significant weight in an obviousness analysis. See *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1313 (Fed. Cir. 2006) ("So too if the feature that creates the commercial success was known in the prior art, the success is not pertinent"). Wrigley did succeed in showing through internal documents that Cadbury sought to copy its invention by adding WS-23 to the cooling agents of some of its products. In doing so, Cadbury's chewing gums were reformulated to become more competitive with Wrigley's chewing gums, and some of the changes dealt with reformulating the gum base, sweetener, and flavor level as well as adding WS-23 to the cooling systems in place. Cadbury Resp. ¶ 37. However, Wrigley has not offered evidence suggesting that the novel combination of WS-23 and menthol is what led Cadbury to copy Wrigley's chewing gums, and in the absence of such evidence the Court cannot find a nexus between Cadbury's copying and the merits of the claimed invention.

Finally, even if Wrigley had established a nexus between Cadbury's copying and the merits of Claim 34, such evidence is not necessarily dispositive and will not automatically overcome a strong *prima facie* case of obviousness. See *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) ("The district court explicitly stated in its opinion that Leapfrog had provided substantial evidence of commercial success, praise, and long-felt need, but that, given the strength of the *prima facie* obviousness showing, the evidence on secondary considerations was inadequate to overcome a final conclusion that claim 25 would have been obvious."). Claim 34 is so broad that it presumably would cover any chewing gum that Cadbury produced that included menthol and WS-23. Many of Cadbury's chewing gums already contained menthol and in some cases menthol and WS-3, so the addition of WS-23 to any of these gums would mean that Cadbury "copied" Wrigley's invention in a sense. As in *Leapfrog*, Cadbury's mere addition of WS-23 to its chewing gum formulations that include menthol is not by itself sufficient to overcome the strong *prima facie* case of obviousness that Cadbury has presented.

Based on the foregoing analysis, and in light of the relevant authorities in this realm, Cadbury's motion for summary judgment of patent invalidity is granted, on both anticipation and obviousness grounds.

B. The Question of Infringement of Cadbury's '893 Patent

In its countersuit, Cadbury claims that certain of Wrigley's gum and mint products were infringing Claims 1-3, 6, 12, 13, and 17 of the '893 patent. Wrigley moves for partial summary judgment of non-infringement, arguing that its gum products are not infringing Claims 1-3 and 6 of the '893 patent.

35 U.S.C. § 271(a) states that anyone who “without authority makes, uses, offers to sell, or sells any patented invention, within the United States * * * during the term of the patent therefor, infringes the patent.” The infringement analysis requires two steps. “First, the court determines the scope and meaning of the patent claims asserted * * *. [Second,] the properly construed claims are compared to the allegedly infringing device.” *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1238 (Fed. Cir. 2003) (quoting *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998)). Claim construction, the first step, is a question of law. *AK Steel Corp.*, 344 F.3d at 1238. The second step “requires a determination that every claim limitation or its equivalent” is found in the allegedly infringing device, and these determinations are questions of fact. *Id.*

A claim construction analysis begins with the words of the relevant claims, and the language of the claims define their scope. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1324 (Fed. Cir. 2002). The claim language is interpreted in light of the “intrinsic evidence of record, including the written description, the drawings, and the prosecution history, if in evidence.” *Id.* There is a heavy presumption that a claim term carries its ordinary meaning, which can be determined from the claims, the written description, the prosecution history, and dictionaries and treatises. *Id.* at 1325. However, the specification must be examined to determine whether the patentee has limited the scope of the claimed invention, for example by being his own lexicographer. *Id.* The specification also may limit the scope of a claim if the patentee has “[demonstrated] an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” *Id.* A court cannot read a limitation of the written description into the claims, but the claims must be read in light of the specification.

SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001). The specification can limit the scope of a claim: “[W]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.” *Id.* at 1341.

Claim 1 of the ‘893 patent claims a cooling composition “comprising menthol and an N-substituted-p-menthane carboxamide.” Claims 2, 3, and 6 of the ‘893 patent all depend from Claim 1. Thus, they also include the limitations of a cooling agent “comprising menthol and an N-substituted-p-menthane carboxamide.” During claim construction, Judge Zagel defined “N-substituted-p-menthane carboxamide” to refer to “a class of molecules with the chemical formulas set forth in Claims 1 and 12 of the ‘893 patent.” Mem. Op. [192] at 19. Claims 1 and 12 of the ‘893 patent define N-substituted-p-menthane carboxamides as having the formula:

$C_6CO-NR_1R_2$ wherein R_1 , when taken separately, is selected from the group consisting of hydrogen, and an aliphatic radical containing up to 25 carbon atoms;

R_2 , when taken separately is selected from the group consisting of a hydroxy radical, and an aliphatic radical containing up to 25 carbon atoms, with the proviso that when R_1 is hydrogen, R_2 may also be an aryl radical of up to 10 carbon atoms and selected from substituted phenyl, phenalkyl, naphthyl and substituted naphthyl, and pyridyl; and

R_1 and R_2 when taken together, represent a cyclic or heterocyclic group of up to 25 carbon atoms.

Cadbury Mem., Ex. DD, ‘893 Patent, at 12:45-13:4; *id.* at 13:43-14:2.

In his claim construction opinion, Judge Zagel stated that all that was required to disavow a product from the scope of the claims is “some [expression] of manifest exclusion or restriction * * * .” Mem. Op. [192] at 17 (quoting *Teleflex*, 299 F.3d at 1325). Judge Zagel found that

there were statements of manifest restriction present in both the specification and claims of the '893 patent. *Id.* at 18. The '893 patent states that

[a]pplicants have unexpectedly found that N-substituted-p-menthane carboxamides when used in combination with menthol in specific amounts results in an unexpected heightened cooling sensation in edible products. The use of either of these products alone or outside the disclosed ranges fail (sic) to result in the cooling effect achieved herein.

Cadbury Mem., Ex. DD, '893 Patent, at 2:34-41. The patent claims also state that the invention is for “a cooling composition comprising menthol and an N-substituted-p-menthane carboxamide.” *Id.*; *id.* at 12:45-13:4; *id.* at 13:43-14:2. Judge Zagel found that these statements and others in the disclosure amount to “an expression of manifest restriction” and “[make] it clear that *non*-N-substituted-p-menthane carboxamides are not included in the invention.” Mem. Op. [192] at 18 (emphasis added). Judge Zagel’s determination is law of the case and the Court is bound to follow it in the absence of clear error.⁹ As the court has not found clear error in Judge Zagel’s ruling, the Court will adhere to his claim construction.

Wrigley’s gum products do not contain N-substituted-p-menthane carboxamides. Rather, Wrigley’s chewing gums contain WS-23, which is an acyclic carboxamide of the formula: N,2,3-trimethyl-2-isopropyl butanamide. Cadbury Mem., Ex. W, Parrish Article, at 1. Thus, both parties agree that Wrigley’s non-experimental gum products do not literally infringe the '893 patent. Cadbury argues that the Wrigley chewing gums still infringe under the doctrine of equivalents. Relying on Judge Zagel’s determination that the '893 patent disclaimed all non-N-substituted-p-menthane carboxamides, Wrigley argues that Cadbury is estopped from asserting infringement under the doctrine of equivalents with respect to WS-23.

⁹ See *supra* note 4.

Infringement under the doctrine of equivalents can take place when a device does not contain every “literal detail” of the patented invention, but differs only in that some “unimportant” or “insubstantial” changes have been made to the claimed invention that “add nothing” but “take the copied matter outside the claim.” *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607 (1950). The doctrine may be invoked if the infringing device “performs substantially the same function in substantially the same way to obtain the same result.” *Id.* at 608. Although the doctrine of equivalents creates uncertainty, courts consistently have upheld the rule despite that uncertainty and the judicial resources that necessarily are expended in enforcing it. The reasoning behind the doctrine of equivalents is simple:

If patents were always interpreted by their literal terms, their value would be greatly diminished. Unimportant and insubstantial substitutes for certain elements could defeat the patent, and its value to inventors could be destroyed by simple acts of copying.

Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 535 U.S. 722, 731 (2002).

The issue of equivalence is a question of fact. *Graver Tank*, 339 U.S. at 607. However, “where the evidence is such that no reasonable jury could determine two elements to be equivalent, district courts are obliged to grant partial or complete summary judgment.” *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 39 n.8 (1997). Also, “the various legal limitations on the application of the doctrine of equivalents are to be determined by the court, either on a pretrial motion for partial summary judgment or on a motion for judgment as a matter of law.” *Id.*

The doctrine of equivalents is applied to the claimed elements of an invention, not the invention as a whole. *Warner-Jenkinson*, 520 U.S. at 29. An accused device must be more than equivalent *overall* to the claimed invention, and instead the doctrine is to be applied to *each individual element* to see whether it is literally infringed or replaced by an equivalent in the

allegedly infringing invention. *Id.* Otherwise, courts would be allowed to expand the scope of the claims. *Id.* The doctrine of equivalents can be applied in infringement suits relating to chemical compositions if chemical equivalents are used in place of the claimed chemical composition.” *Graver Tank*, 339 U.S. at 609.

A composition that specifically is excluded from the claims of a patent cannot be recaptured as an equivalent of the claimed invention. *SciMed*, 242 F.3d at 1345; *Dolly, Inc. v. Spalding & Evenflo Cos., Inc.*, 16 F.3d 394, 400 (Fed. Cir. 1994) (“In short, the concept of equivalency cannot embrace a structure that is specifically excluded from the scope of the claims”). Express exclusion is not required to bar recapture under the doctrine of equivalents; implied exclusion is sufficient to bar recapture. *SciMed*, 242 F.3d at 1345. Implied exclusion occurs when a claim is worded in such a way as to clearly exclude certain subject matter. *Id.* at 1345-1346. Thus, a patent claim need not expressly state what it excludes for the doctrine of specific exclusion to apply. Instead, a claim can be worded in such a way as to implicitly exclude certain subject matter.

In this case, the wording of the specification and the claims amounted to statements of manifest restriction that resulted in the clear exclusion of acyclic carboxamides such as WS-23 from the scope of the claims. Therefore, the Court finds that WS-23 has been specifically excluded from the scope of the claims and cannot be recaptured through application of the doctrine of equivalents.

Statements of manifest exclusion or restriction can “[represent] a clear disavowal of claim scope.” *Teleflex*, 299 F.3d at 1325. If an invention is claimed narrowly through such statements of manifest exclusion or restriction, then the doctrine of equivalents cannot be used to effectively enlarge the scope of the claims. *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d

1420, 1425 (Fed. Cir. 1997). Application of the doctrine of equivalents in this manner “conflicts with the definitional and public-notice functions of the statutory claiming requirement.” *Warner-Jenkinson*, 520 U.S. at 29. The patentee, not the court, bears the responsibility of negotiating claims that are broad enough to cover compositions that could be equivalent. *Sage Prods.*, 126 F.3d at 1425 (“as between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure”).

Claiming an invention narrowly will affect the resulting scope of the invention under the doctrine of equivalents. *Tanabe Seiyaku Co., Ltd. v. United States Int’l Trade Comm’n*, 109 F.3d 726, 732 (Fed. Cir. 1997). In *Tanabe*, the patentee claimed a process for making diltiazem hydrochloride, and the claim stated five solvents in which the claimed process could take place. *Id.* at 728-729. Acetone was listed as a solvent, and the allegedly infringing process used butanone as a solvent. *Id.* at 729. Both acetone and butanone are ketones, and one of skill in the art would have known that an inventor could have disclosed and claimed the class of ketones that encompasses both acetone and butanone broadly rather than claiming butanone alone. *Id.* at 732. The court determined that because the patentee had claimed narrowly and limited the claimed ketone solvents to acetone, the substitution of butanone for acetone was not an insubstantial change. *Id.* The court stated that the “specific claim language would suggest to a person skilled in the art that ketones other than acetone may not be useful” for the claimed reaction, because one of skill in the art would have known that the inventor could have claimed more broadly. *Id.* In short, disclaimed material is specifically excluded from the patent *implicitly* through the patentee’s narrow claiming, and the patentee may not use the doctrine of equivalents to broaden

the scope of the claims without impeding the functions of the PTO and upsetting the notice function of patents.

Applying these settled principles in this case, statements in the specification and the claims clearly limited the scope of the claimed invention to N-substituted-p-menthane carboxamides. Throughout the patent, the patentee made clear that the invention was a cooling composition that comprised an N-substituted-p-menthane carboxamide and menthol. The invention was described as comprising this novel combination because of its unexpected cooling effects:

Applicants have unexpectedly found that N-substituted-p-methane carboxamides when used in combination with menthol in specific amounts result in an unexpected heightened cooling sensation in edible products. The use of either of these products alone or outside the disclosed ranges fail to result in the cooling effect achieved herein.

Cadbury Mem., Ex. DD, '893 patent at 2:34-40. Therefore, the scope of the claimed invention is limited to N-substituted-p-menthane carboxamides and menthol, and all *non*-N-substituted-p-menthane carboxamides thus are outside of the scope of the invention and disclaimed. As disclaimed material, non-N-substituted-p-methane carboxamides cannot be recaptured as equivalent.

By claiming in a restrictive manner, Cadbury, as the patentee, did not put others of skill in the art on notice that other carboxamides were covered by the scope of this patent. Other carboxamides were known in the art, as evidenced by the Parrish article that was cited in the above invalidity inquiry. See generally Cadbury Mem., Ex. W. That article, published in 1987, disclosed the use of WS-23 as a cooling agent. *Id.* The Watson and Rowsell patents, which disclosed and claimed N-substituted-p-menthane carboxamides and acyclic carboxamides respectively, were issued in 1979 and 1980. *Id.*, Ex. Y (Watson); *id.*, Ex. O (Rowsell). There is

no reason to believe that one of ordinary skill in the art would have been put on notice that Cadbury included non-N-substituted-p-methane carboxamides in its invention. Cadbury could have disclosed and claimed a broader invention during prosecution, but it did not.

Cadbury cites *Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc.*, 467 F.3d 1370 (Fed. Cir. 2006), in support of its contention that disclaimer of claim scope does not necessarily bar it from recapturing the disclaimed subject matter under the doctrine of equivalents. In *Abraxis*, the claim limitation at issue was the compound edetate, which was a limitation in each of the asserted claims. *Id.* The allegedly infringing composition included calcium trisodium DTPA in the place of edetate and could infringe the patent claims only through the doctrine of equivalents. *Id.* at 1379.

The district court found that both edetate and DTPA perform the same function (retarding microbial growth in propofol oil-in-water emulsions) in substantially the same way (metal ion chelation) and thus were equivalents. *Abraxis Bioscience*, 467 F.3d at 1380. The Federal Circuit upheld that finding and rejected the argument that Abraxis had claimed its invention narrowly and thus was barred from capturing different polyaminocarboxylates as equivalents to edetate. *Id.* at 1380-1381. The court drew a distinction between a case in which an inventor knowingly claims his invention narrowly where the alleged equivalent was already known at the time of patent application filing and a case in which the inventor claims his invention narrowly and the alleged equivalent was not known at the time of the patent application filing. *Id.* at 1381. Under the former situation, one of ordinary skill in the art would not be on notice that the claimed invention relates to similar compounds that are known but not claimed. *Id.* However, in the latter situation, one of ordinary skill in the art would be on notice that similar compounds discovered after the patent issued could infringe the patent in question because of the

unforeseeability of the equivalent. *Id.* at 1381-1382. Calcium trisodium DTPA was an unanticipated equivalent, and the use of DTPA as an anti-microbial agent was unforeseeable during the prosecution of the patent covering edetate. *Id.* at 1381. The court thus concluded that one of ordinary skill in the art reading any of Abraxis' three patents would not have determined that the patents disclaimed other polyaminocarboxylates such as calcium trisodium DTPA. *Id.* at 1381-1382. Here, by contrast, WS-23 and other acyclic carboxamides were known cooling agents at the time of the '893 patent filing. One of ordinary skill in the art would only be put on notice that the '893 patent claimed N-substituted-p-menthane carboxamides and not other carboxamides, as the patentee could have included other carboxamides in the disclosure but did not do so.

Because each element of the claimed invention plays a role in “defining the scope of the patented invention,” the doctrine of equivalents when applied to each element should not be allowed to “eliminate that element in its entirety.” *Abraxis Bioscience*, 467 F.3d at 1381-82. Therefore, if application of the doctrine of equivalents to capture a particular composition would eliminate one of the claim limitations as stated, then that composition must be deemed specifically excluded from the claim terms. For example, in *Eastman Kodak v. Goodyear Tire and Rubber Co.*, the claim in question related to a process that involved crystallizing a substance under an inert gas atmosphere. 114 F.3d 1547, 1551 (Fed. Cir. 1997). The allegedly infringing process involved heated air as opposed to an inert gas atmosphere. *Id.* at 1559. The specification defined “an inert gas atmosphere” as requiring limited amounts of water and oxygen. *Id.* at 1560. The court determined that a process that used heated air could not infringe the claimed process under the doctrine of equivalents because “the claim language specifically excludes reactive gases – such as “heated air” – from the scope of the claims.” *Id.* at 1561.

Since the doctrine of equivalents is applied to each element of the claim, the court would have been required to determine that heated air was equivalent to inert gas in order to find infringement under the doctrine of equivalents. To do so, however, would have read out the inert gas limitation in violation of the rule set forth in *Warner-Jenkinson*. Thus, the claim language was read specifically to exclude heated air, even though the claims and disclosure did not expressly state that heated air was not included as part of the invention.

Similarly, in this case the '893 patent claims "a cooling composition comprising menthol and an N-substituted-p-menthane carboxamide." Cadbury Mem., Ex. DD, '893 Patent, at 12:45-13:4. The '893 patent is read as disclaiming all non-N-substituted-p-methane carboxamides as beyond the scope of the invention. Thus, any infringing composition must contain an N-substituted-p-methane carboxamide to satisfy this claim limitation. WS-23, the carboxamide used in Wrigley's gums, is an acyclic carboxamide, which makes it a non-N-substituted-p-methane carboxamide. To read the claim as covering a non-N-substituted-p-methane carboxamide in light of the disclaimer would be to read out the claim limitation "N-substituted-p-methane carboxamide." Thus, WS-23 cannot be deemed an equivalent of an N-substituted-p-methane carboxamide.

Cadbury repeatedly argues that because the '893 patent did not specifically identify and then disclaim non-N-substituted-p-methane carboxamides by disparaging them in some way, those carboximides cannot be specifically excluded from the claims. However, the court in *SciMed* stated that specific exclusion can be accomplished by "clearly [excluding] the asserted equivalent structure, either *implicitly* or explicitly." *SciMed*, 242 F.3d at 1347 (emphasis added). The analysis above tracks the case law on implicit specific exclusion, and in those cases material was deemed specifically excluded from the patent claims even when it was not disparaged in the

patent. In the *Tanabe* case, for example, the Federal Circuit's opinion did not intimate that a disputed chemical combination was disparaged. Rather, the Court focused on the language of the pertinent claim, holding that the patentee disclaimed the disputed chemical combination by claiming narrowly. *Tanabe*, 109 F.3d at 732. In short, it is not necessary for material to be disparaged in a patent for it to be specifically excluded, and WS-23 can be deemed specifically excluded from the scope of the claims in the '893 patent even though it was not specifically identified and then disparaged.

For the foregoing reasons, WS-23 is specifically excluded from the scope of the '893 patent and as such cannot be recaptured through the application of the doctrine of equivalents. Therefore, Wrigley's gum products containing WS-23 do not infringe the '893 patent either literally or under the doctrine of equivalents, and Wrigley is entitled to partial summary judgment of non-infringement.

A final matter related to Wrigley's motion warrants brief mention. Cadbury's opposition argues that Wrigley "purposely exclude[d] Wrigley's mint products," which are accused of infringement on the same theory as Wrigley's chewing gums, from its motion for summary judgment. Cadbury Mem. at 2. Although Cadbury argues that Wrigley's purpose is to block entry of a Federal Rule of Civil Procedure 54(b) judgment on the '893 patent. Wrigley takes the view that granting its motion would lead to a final judgment under Rule 54(b). Wrigley Mem. at 3 n.3. The rule itself provides that, in an action comprising multiple claims, a court may enter final judgment on resolved claims "only if the court expressly determines that there is no just reason for delay." Fed. R. Civ. P. 54(b). For present purposes, the Court notes only that the parties appear to be of one mind in regard to the appropriateness of entering final judgment on these claims; the court will entertain a motion under Rule 54(b) should either party present one,

and will make a determination based on the pertinent factors under the Federal Rules and applicable case law. See, e.g., *U.S. Gen., Inc. v. Albert*, 792 F.2d 678, 681 n.3 (7th Cir. 1986) (non-exhaustive list of factors appropriate for resolving motions under Rule 54(b)).

C. Cadbury’s Cross-Motion for Summary Judgment

Cadbury’s cross-motion [230] seeks summary judgment on its claim that Wrigley literally infringed the ‘893 patent when Wrigley attempted to reformulate some of its chewing gums using WS-3. It also seeks summary judgment on the validity of the ‘893 patent. Resolution of some of the issues raised in the cross-motion has been complicated because the parties did not pursue those issues with the vigor and thoroughness that characterized their briefing (and oral presentations) on the matters addressed earlier in this opinion. Nevertheless, after careful consideration of the arguments and the pertinent evidence in the summary judgment record, Cadbury’s cross-motion is granted in part and denied in part.

1. Literal Infringement

The Court considers whether any of Wrigley’s experimental gums, as identified by Cadbury in its cross-motion, support a finding of infringement. Cadbury contends that some of Wrigley’s experimental chewing gums literally infringe Claims 1-3 and 6 of the ‘893 patent in that they contain a gum base, sweetener, cooling composition comprising menthol, and WS-3, in the amounts specified in those claims. Specifically, Cadbury contends that Wrigley’s Eclipse Winterfresh Australia (Experimental 24N-167), Orbit Sweet Mint Pellet (3515-01Z and 3439-02N), and Excel Polar Ice (3484-01W) formulations literally infringe the ‘893 patent.

As noted above, anyone who “without authority makes, uses, offers to sell, or sells any patented invention, within the United States * * * during the term of the patent therefor, infringes the patent.” 35 U.S.C. § 271. An infringement analysis requires two steps. “First, the court

determines the scope and meaning of the patent claims asserted * * *. [Second,] the properly construed claims are compared to the allegedly infringing device.” *AK Steel Corp.*, 344 F.3d at 1238 (alterations in original). In resolving Cadbury’s cross-motion, the Court need not move beyond Claims 1 and 2 of the ‘893 patent. Claim 1 of the ‘893 patent reads as follows:

A chewing gum composition capable of providing long-lasting, breath freshening perception without bitterness comprising a gum base, a sweetener and a cooling composition comprising menthol and an N-substituted-p-menthane carboxamide of the formula:

$C_6CO-NR_1R_2$ wherein R_1 , when taken separately, is selected from the group consisting of hydrogen, and an aliphatic radical containing up to 25 carbon atoms;

R_2 , when taken separately is selected from the group consisting of a hydroxy radical, and an aliphatic radical containing up to 25 carbon atoms, with the proviso that when R_1 is hydrogen, R_2 may also be an aryl radical or up to 10 carbon atoms and selected from substituted phenyl, phenalkyl, naphthyl and substituted naphthyl, and pyridyl; and

R_1 and R_2 when taken together, represent a cyclic or heterocyclic group of up to 25 carbon atoms.

Cadbury Mem., Ex. DD, ‘893 patent, at 12:45-13:4. Claim 2 of the ‘893 patent reads as follows:

The chewing gum composition of claim 1 wherein the N-substituted-p-menthane carboxamide is N-ethyl-p-menthane-3-carboxamide.

Id. at 13:5-7. WS-3 is the trade name for N-ethyl-p-menthane-3-carboxamide (Mem. Op. [192] at 19), so Claim 2 claims a chewing gum composition comprising a gum base, a sweetener, menthol, and WS-3. As construed by Judge Zagel during the claim construction process, the term “menthol” is “menthol, as a distinct and separate substance, as distinguished from being present in mint oils,” which means that the ‘893 patent claims refer to menthol the ingredient, not peppermint oil.

If Wrigley made a gum composition in the United States comprising a gum base, a sweetener, WS-3, and menthol as a distinct and separate substance, then Wrigley’s gum products

would literally infringe Claims 1 and 2 of the '893 patent. Cadbury contends that this is precisely what Wrigley did by reformulating some of its gum products using WS-3.

“Literal infringement of a claim exists when every limitation recited in the claim is found in the accused device.” *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 532 (Fed. Cir. 1996). Literal infringement is a factual determination, one that the Federal Circuit teaches must be undertaken “with great care” on summary judgment. *Id.* at 528. The burden is on the patent owner to show “that every claim asserted is found in the accused process or product.” *Tanabe*, 109 F.3d at 731. Given the pertinent legal framework, summary judgment is not appropriate because it is not clear from the record evidence whether any of the experimental formulations was comprised of gum base, a sweetener, WS-3, and menthol as a distinct and separate substance. Cadbury adduced expert testimony concluding that Wrigley’s experimental formulations literally infringed the '893 patent (*i.e.*, that they contained each of the limitations of the claims at issue). That expert testimony, however, was based on inferences from the record that may be appropriate for a finder of fact, but not for a court ruling on a summary judgment motion. While Cadbury has drawn to the Court’s attention record evidence that demonstrates that Wrigley substituted WS-23 for WS-3 in its experimental formulations, it has not shown that any or all of those formulations contain *each* of the limitations of Claims 1 and 2 of the '893 patent.

In support of its argument that each of the experimental Wrigley formulations at issue contains the four required elements, Cadbury points to the following fact statement: “Wrigley’s experimental formulations literally meet each limitation of Claims 1 and 2 of the '893 patent.” Cadbury SOFX ¶ 14.¹⁰ Cadbury’s fact statement, in turn, cites (i) the text of Claims 1 and 2 and

¹⁰ Wrigley disputes that fact statement because it calls for a legal conclusion.

(ii) two expert reports – the Reggio Report and the McGorrin Report. As the text of Claims 1 and 2 are set out above and their contours have been discussed, the Court turns to the two reports.

The Reggio Report states that the experimental formulations in question “compris[e] a gum base, a sweetener and a cooling composition comprising WS-3 and menthol.” Cadbury SOFX, Ex. A, Reggio Report, at ¶ 74. That conclusion cites to several sources. The first source, attached as Exhibit E of the report, is a chart summarizing the formulations of accused Wrigley products, some sixty in all. While among the products are formulas associated with Eclipse Winterfresh, Orbit Sweetmint, and Excel Polar Ice, the list does not include the experimental formulations at issue in this case: Eclipse Winterfresh Australia (Experimental 24N-167), Orbit Sweet Mint Pellet (3515-01Z and 3439-02N), and Excel Polar Ice (3484-01W). The report also cites to the laboratory notebook of Sonya Johnson, a Wrigley scientist who worked on Eclipse Winterfresh Australia. While the notebook lists several ingredients of the experimental Eclipse Winterfresh Australia, neither the Reggio Report nor the parties’ fact statements describes how those ingredients map onto the limitations of Claim 1 and Claim 2. Moreover, Wrigley describes the key page from that notebook as “a flavor breakdown” rather than a “chewing gum formula” (Wrigley Cross-Motion Mem. at 4), and while Cadbury disputes that characterization (Cadbury Cross-Motion Mem. at 4), it does not march through the document and demonstrate that the limitations of Claims 1 and 2 were present in Johnson’s formulation. And of course, Johnson’s work on Winterfresh Australia does not address the other experimental formulae at issue. Nor does the final document that supports the Reggio Report’s conclusion: a weekly progress report by Sonya Johnson. While that document (Cadbury Resp. SOAFX, Ex. O, W145608) indicates

that Wrigley sought to replace WS-23 with WS-3 in “Australia WF,” the document does not indicate what comprised the compound that Wrigley was testing.

Much the same is true of the McGorin Report, also cited by Cadbury in Paragraph 14 of its fact statement, although Cadbury omits from the materials in support of its cross-motion some of the evidence upon which McGorin relied in drafting his report. See Cadbury SOFX, Ex. B, McGorin Report, at 13-14. That which is furnished fails to establish Cadbury’s argument. For example, the portion of Sonya Johnson’s deposition testimony that was included indicates Johnson’s agreement that she removed WS-23 from an “Eclipse Winterfesh control,” but neither the deposition testimony nor the other materials that were furnished make plain the composition of the “control.” In short, the state of the record with respect to Cadbury’s cross motion requires the Court to make inferences – about gum compositions and laboratory practices – in favor of Cadbury. The summary judgment standards, however, dictate that reasonable inferences run the other way, in favor of Wrigley.

In light of the caution counseled by the Federal Circuit and Cadbury’s burden to demonstrate that Wrigley’s experimental gums contain every limitation of Claims 1 and 2, Cadbury’s cross motion for summary judgment of literal infringement is denied.

2. Validity of the ‘893 Patent

In addition to seeking summary judgment of literal infringement, Cadbury’s motion styles itself as requesting an order of “patent validity” [230]. Cadbury’s memorandum in support of that relief includes two pages of argument, while Wrigley’s cryptic opposition spans barely one-quarter of a page and comprises just three sentences.

Given the legal posture of the case and the content of the briefs, Cadbury’s cross-motion is understood by the Court as a motion for summary judgment with respect to Wrigley’s

counterclaim that the ‘893 patent is invalid.¹¹ Indeed, despite the heading on the motion itself, Cadbury’s memorandum invokes the standard for evaluating a claim of invalidity. See Cadbury Cross-Motion Mem. at 10 (citing *Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 963¹² (Fed. Cir. 2001)). Wrigley’s response memorandum does not indicate confusion on this point: though brief, it evinces an awareness that Cadbury’s motion is in response to Wrigley’s claim that the ‘893 patent is invalid.

Cadbury’s memorandum in support of its cross-motion argues that the legal basis for Wrigley’s claim of invalidity was wiped out by Judge Zagel’s *Markman* ruling. Cadbury’s memorandum also argues that Wrigley provides only conclusory assertions of invalidity, has not pointed to an expert report or a Rule 30(b)(6) witness, and has not articulated a sustainable theory of invalidity. This is the sum total of Wrigley’s opposition:

Cadbury’s Cross-Motion for invalidity relies on the flawed premise that Wrigley does not contest the validity of the ‘893 Patent, or that Wrigley’s invalidity position has been negated by the Court’s claim construction order. ([Wrigley Resp. X] ¶¶ 21-26). Cadbury’s Cross-Motion, however, completely fails to address at least one of Wrigley’s invalidity arguments: Wrigley’s 35 U.S.C. § 102(g) argument. *Id.* at ¶ 23. As such, there are clearly material facts in dispute and Cadbury’s Cross-Motion should be denied.

Wrigley Cross-Motion Mem. at 7.

Wrigley’s argument misapprehends the burdens both with respect to establishing that a patent is invalid and with respect to summary judgment. Patents enjoy a presumption of validity – “[t]he burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.” 35 U.S.C. § 282. The presumption of patent validity “can be

¹¹ The Court’s understanding is fully consistent with (i) Cadbury’s Fourth Amended Answer and Counterclaims [66], which does not seek declaratory judgment that its patent is valid, and (ii) Wrigley’s Reply and Counterclaims to Cadbury’s Fourth Amended Answer and Counterclaim [75], which does assert the invalidity of the ‘893 patent as a counterclaim [*id.* at 25].

¹² The standard that Cadbury invokes is actually reported in 251 F.3d at 962.

overcome only through clear and convincing evidence.” *Eli Lilly*, 251 F.3d at 962. And in order to survive summary judgment, the Federal Rules of Civil Procedure provide that “an opposing [party’s] * * * response must * * * set out specific *facts* showing a genuine issue for trial. If the opposing party does not so respond, summary judgment should, if appropriate, be entered against that party.” Fed. R. Civ. P. 56(e)(2) (emphasis added). As the Seventh Circuit often reminds litigants and district judges, “summary judgment is the ‘put up or shut up’ moment in the life of a case.” *AA Sales & Assocs., Inc. v. Coni-Seal, Inc.*, 550 F.3d 605, 612-13 (7th Cir. 2008).¹³

Mindful of these standards, the Court analyzes the sufficiency of Wrigley’s arguments. Wrigley’s opposition to summary judgment is supported by three sentences which are undergirded by six fact statements. See Wrigley Cross-Motion Mem. at 7; Wrigley Resp. X ¶¶ 21-26. In Wrigley Resp. X. ¶ 21, Cadbury first states that Wrigley never named a Rule 30(b)(6) designee to testify about the basis of Wrigley’s counterclaim; Wrigley’s response points to an interrogatory suggesting that Wrigley *did* in fact name such a designee. This does not actually support the argument that the ‘893 patent is invalid, of course. Neither does Wrigley Resp. X. ¶ 22: there, Cadbury first states that Wrigley did not submit an expert report in support of its contention that the ‘893 patent is invalid, and Wrigley’s response does not dispute this fact statement.

The real action pertains to Wrigley Resp. X. ¶¶ 23-26. In each of these fact statements, Cadbury argues that Wrigley has failed to articulate more than a conclusory theory as to why the ‘893 patent is invalid. Wrigley counters with two responses that it gave to interrogatories that were propounded by Cadbury. Wrigley’s responses are contained in Cadbury SOFX, Ex. H,

¹³ The summary judgment movant’s burden is considerably lighter than that borne by the non-movant: “[W]e find no express or implied requirement in Rule 56 that the moving party support its motion with * * * materials *negating* the opponent’s claim.” *Celotex*, 477 U.S. at 323 (emphasis added).

Plaintiff Wm. Wrigley Jr. Company's January 5, 2006 Supplemental Objections and Answers to Defendant Cadbury Adams USA, LLC's Second Set of Interrogatories (Nos. 11-14) (the "January Interrogatories").¹⁴ The paragraphs of the January Interrogatories that Wrigley cites are Paragraphs 16 and 23. As explained below, Wrigley's interrogatory responses fail to create genuine issues of material fact.

a. January Interrogatories Paragraph 16

Wrigley states in Paragraph 16 that Cadbury failed to disclose the identity of "Cooling Compound 2470" in Table V of the '893 patent and that the '893 patent therefore fails to satisfy the "written description" and "best mode" requirements of 35 U.S.C. § 112. The pertinent statutory provision provides:

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, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

35 U.S.C. § 112. The provision contains three requirements: a patentee must explain what the invention is, how to make it, and the best mode for carrying it out. *Univ. of Rochester v. G.D. Searle & Co., Inc.*, 358 F.3d 916, 921 (Fed. Cir. 2004) (these are "[i]n common parlance, the 'written description requirement,' the 'enablement requirement,' and the 'best mode requirement'").

The written description requirement is distinct from the enablement requirement. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). To satisfy the written description requirement, "the applicant must * * * convey with reasonable clarity to those skilled

¹⁴ Wrigley incorrectly contends that Exhibit H contains its responses to Interrogatory No. 16 and No. 23. In reality, the material that Wrigley cites is found in *paragraphs* 16 and 23. Both of these paragraphs come, as Cadbury correctly contends, in response to Interrogatory No. 14. Exhibit H does not contain an Interrogatory No. 16 or an Interrogatory No. 23.

in the art that, as of the filing date sought, he or she was in possession of the *invention*. The invention is, for purposes of the ‘written description’ inquiry, *whatever is now claimed.*” *Id.*; see also *Univ. of Rochester*, 358 F.3d at 923. Although compliance with the written description requirement is generally a factual issue (*Univ. of Rochester*, 358 F.3d at 927), the burden is on the person contesting the validity of the patent to show by clear and convincing evidence that one of ordinary skill in the art would not have known what was claimed by the patent. *Vas-Cath*, 935 F.2d at 1563; *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 772 F.2d 1570, 1573-74 (Fed. Cir. 1985) (“A party asserting invalidity based on 35 U.S.C. § 112 bears no less burden and no fewer responsibilities than any other patent challenger.”). Neither Wrigley’s brief nor its response to Cadbury’s interrogatories even *argues* that one of ordinary skill in the art would not have known that Cadbury was in possession of the invention in question. Wrigley has not referred the Court to case law that suggests that the omission of a single ingredient – *any* single ingredient, for Wrigley has also failed to explain to the Court the importance, if any, of “Cooling Compound 2470” – invalidates a patent as a matter of law under the written description requirement.

Wrigley’s argument related to the best mode requirement is similarly deficient. Wrigley states in its response to Cadbury’s interrogatories that the failure to disclose the identity of “Cooling Compound 2470” “evidences a failure to disclose the best mode contemplated by the inventors for carrying out the invention of the ‘893 Patent,” thereby invalidating Claims 12-18 of the patent. January Interrogatories ¶ 16. The Federal Circuit has explained how the best mode requirement analysis proceeds: “The first prong is subjective and focuses on the inventor’s state of mind at the time the application is filed; the second prong is objective and depends on the scope of the claimed invention and the level of skill in the relevant art.” *Pfizer, Inc. v. Teva Pharm. USA, Inc.*, 518 F.3d 1353, 1364 (Fed. Cir. 2008) (quotation marks omitted). Again,

Wrigley presents nothing more than Cadbury's failure to disclose the named ingredient – Wrigley does not offer evidence of Cadbury's state of mind or evidence related to whether as an objective matter one "of ordinary skill in the art" could "practice the best mode of the invention." *Bayer AG v. Schein Pharm., Inc.*, 301 F.3d 1306, 1320 (Fed. Cir. 2002). Therefore, Wrigley has not satisfied its summary judgment burden.

Wrigley also argues in Paragraph 16 that the '893 patent "is replete with mistakes and omissions which render all the claims of the '893 Patent invalid under §§ 101 and/or 112." January Interrogatories ¶ 16. The interrogatory response cites to some deposition testimony, but Wrigley did not furnish that testimony to the Court with its opposition. *United States v. Dunkel*, 927 F.2d 955, 955 (7th Cir. 1991) ("Judges are not like pigs, hunting for truffles buried in briefs."). In any event, not every error automatically invalidates a patent. See, e.g., *Yoon Ja Kim v. ConAgra Foods, Inc.*, 465 F.3d 1312, 1325-26 (Fed. Cir. 2006).

The rest of Paragraph 16 consists of generalities and conclusions that might satisfy the liberal pleading requirements of Federal Rule of Civil Procedure 8(a), but which do not contain facts or meaningful legal argument. The allegations cannot survive summary judgment: "We repeatedly have made clear that perfunctory and undeveloped arguments, and arguments that are unsupported by pertinent authority, are waived (even where those arguments raise constitutional issues)." *United States v. Hook*, 471 F.3d 766, 775 (7th Cir. 2006) (quoting *United States v. Lanzotti*, 205 F.3d 951, 957 (7th Cir. 2005)); see also *Gant v. United States*, 417 F.3d 1328, 1331 (Fed. Cir. 2005) (courts need not accept legal conclusions that are couched as factual allegations); *PC Connector Solutions LLC v. SmartDisk Corp.*, 406 F.3d 1359, 1364 (Fed. Cir. 2005) (infringement arguments based on "conclusory statements" "do not raise any genuine issues of material fact"); *Loubser v. United States*, 606 F. Supp. 2d 897, 915 (N.D. Ind. 2009)

(waiver principle for conclusory statements applies on a summary judgment motion); *Bryant v. Gardner*, 587 F. Supp. 2d 951, 964 n.6 (N.D. Ill. 2008) (same).

b. January Interrogatories Paragraph 23

Wrigley also relies on Paragraph 23 of the January Interrogatories in an effort to show genuine issues of material fact. In this paragraph, Wrigley contends that “[t]he ‘893 patent is invalid for failing to satisfy the conditions for patentability under 35 U.S.C. § 102(g).” The Federal Circuit teaches that Section 102(g) “operates to ensure that a patent is awarded only to the ‘first’ inventor in law.” *Apotex USA, Inc. v. Merck & Co., Inc.*, 254 F.3d 1031, 1035 (Fed. Cir. 2001). The provision “provides that a patent is invalid if ‘before such person’s invention thereof, the invention was made in this country by another inventor.’” *Z4 Techs., Inc. v. Microsoft Corp.*, 507 F.3d 1340, 1352 (Fed. Cir. 2007) (citing the United States Code). If a patentee’s invention *was* previously made by another, then the patent will be invalidated unless the earlier inventor “abandoned, suppressed, or concealed” the earlier invention. *Apotex*, 254 F.3d at 1035. Again, however, when a patent has already issued, a challenger is required to show by clear and convincing evidence that the earlier invention was made and “constituted an actual reduction to practice of the invention claimed” in the more recent patent. *Z4 Techs.*, 507 F.3d at 1352. Determining when an invention was reduced to practice is a question of law that depends on factual findings. *Cooper v. Goldfarb*, 154 F.3d 1321, 1327 (Fed. Cir. 1998). “In order to establish an actual reduction to practice, the inventor must prove that: (1) he constructed an embodiment or performed a process that met all the limitations * * *; and (2) he determined that the invention would work for its intended purpose.” *Id.*

Under the burden shifting standard that the Federal Circuit articulated in *Apotex*, Cadbury does not need to offer any of its own evidence until Wrigley offers evidence that its earlier

invention “meet[s] the limitations of the claims-at-issue.” *Dow Chem. Co. v. Astro-Valcour, Inc.*, 267 F.3d 1334, 1339 (Fed. Cir. 2001). Yet, Wrigley offers only its assertion (in response to an interrogatory) that Wrigley collaborated with Wilkinson-Sword in the 1970s and 1980s and “extensively *experimented* with a number of cooling agents including WS-3 in various chewing gums and hard candies.” January Interrogatories ¶ 23 (emphasis added).

In sum, it was Wrigley’s burden, not Cadbury’s, to show that there was a genuine issue of material fact appropriate for resolution at trial. As the Supreme Court famously observed in *Matsushita*, the non-moving party “must do more than simply show that there is some metaphysical doubt as to the material facts.” 475 U.S. at 586. Because Wrigley has furnished the Court with almost no argument and not a single legal authority, it has failed to meet that standard and is not entitled to proceed further with its invalidity claim. Cadbury’s motion for summary judgment on Wrigley’s counterclaim of invalidity of the ‘893 patent is granted.

III. CONCLUSION

For the reasons stated herein, Cadbury’s Motion for Summary Judgment of Patent Invalidity is granted, Wrigley’s Motion for Partial Summary Judgment of Non-Infringement [209] is granted, and Cadbury’s Cross-Motion for Summary Judgment of Literal Infringement [230] is granted in part and denied in part.



Dated: June 26, 2009

Robert M. Dow, Jr.
United States District Judge