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The Dow Chemical Company P.O. BOX 1967 2040 Dow Center Midland, MI 48641			HOCK, ELLEN SUZANNE	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* STEPHANIE M. WHITED, TROY M. TAMBLING,  
MRIDULA KAPUR, SARAH E. PATTERSON,  
DANE CHANG, and WILLIAM J. MICHIE

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Appeal 2019-004244  
Application 14/762,484  
Technology Center 1700

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Before ROMULO H. DELMENDO, MICHAEL G. McMANUS, and  
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

CASHION, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), the Appellant appeals from a Final Office Action, dated June 8, 2018, rejecting claims 1–5 and 7–21. We have jurisdiction under 35 U.S.C. § 6. An oral hearing was held on May 11, 2020.<sup>1</sup>

We AFFIRM.

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<sup>1</sup> A written transcript of the oral hearing (hereinafter “Oral Hearing Transcript” or “Tr.”) was entered into the record on May 19, 2020.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. A composition comprising the following components:

A) a first composition, wherein the first composition comprises a first ethylene-based polymer and a second ethylene-based polymer, and wherein the ratio of the “high load melt index (I21) of the first composition” to the “high load melt index (I21) of the first ethylene-based polymer” is from 40 to 120, and wherein the first composition has a density greater than 0.940 g/cm<sup>3</sup>; and

B) one or more azide compounds present in an amount greater than, or equal to, 50 ppm, based on the weight of the first composition.

The Appellant<sup>2</sup> requests review of the Examiner’s rejection of claims 1–5 and 7–21 under pre-AIA 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under pre-AIA 35 U.S.C. § 103(a) as obvious over Michie (WO 2006/065651 A2, published June 22, 2006). Appeal Br. 8, 10; Final Act. 3.

Appellant argues independent claims 1, 20, and 21 together and relies on these arguments to address the patentability of the remaining dependent claims. Appeal Br. 8, 10. We select claim 1 as representative of the subject matter on appeal and decide the appeal as to all grounds of rejection based on the arguments Appellant makes in support of the patentability of claim 1.

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<sup>2</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. The Appellant identifies the real party in interest as Dow Global Technologies LLC. Appeal Br. 2.

OPINION

After review of the respective positions the Appellant and the Examiner present, we REVERSE the Examiner's rejection of claims 1–5 and 7–21 under 35 U.S.C. § 102 (b) for the reasons Appellant presents in the Appeal and Reply Briefs. However, we AFFIRM the Examiner's rejection of claims 1–5 and 7–21 under 35 U.S.C. § 103(a) for the reasons the Examiner provides in the Final Action and the Answer. We add the following for emphasis.

*Rejection under 35 U.S.C. § 102(b) (Claim 1)*

Claim 1 recites a composition comprising a first composition, wherein the first composition comprises a first ethylene-based polymer and a second ethylene-based polymer, and wherein the ratio of the “high load melt index (I21) of the first composition” to the “high load melt index (I21) of the first ethylene-based polymer” (herein after referred to as “ratio of I21 melt indices”) is from 40 to 120.

The Examiner determines that Michie discloses a composition satisfying all of the limitations of claim 1 and thus, concludes the reference anticipates the claim. Final Act. 3. Regarding the recitation noted above, the Examiner relies on Michie's description of the composition's properties to calculate a ratio of I21 melt indices of 0.08 to 7500 or of 0.08 to 375, depending on the specific properties used for the calculations. *Id.* The Examiner's calculated ratio completely encompasses the claimed ratio of 40–120.

Appellant contends that Michie does not expressly teach the claimed ratio of I21 melt indices. Appeal Br. 8–9. Appellant further contends that Michie does not inherently disclose this claimed ratio of I21 melt indices.

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*Id.* at 9. With respect to inherency, Appellant asserts that the Examiner's calculated ratio of I21 melt indices is not sufficient to establish that Michie inherently teaches the claimed ratio of I21 melt indices. *Id.* That is, Appellant argues that Michie does not describe the claimed range for the disputed ratio of I21 melt indices with sufficient specificity.

Appellant's arguments identify error in the Examiner's finding of anticipation.

Anticipation requires a showing that each limitation of a claim is found in a single reference, either expressly or inherently. *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1369 (Fed. Cir. 2005). When a patent claims a range, as in this case, that range is anticipated by a prior art reference if the reference discloses a point within the range. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782 (Fed. Cir. 1985). If the prior art discloses its own range, rather than a specific point, then the prior art is only anticipatory if it describes the claimed range with sufficient specificity such that a reasonable fact finder could conclude that there is no reasonable difference in how the invention operates over the ranges. *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991, 999 (Fed. Cir. 2006).

Moreover, the fact that a prior art reference may disclose a very broad range that encompasses or overlaps the claimed range, does not necessarily mean that the prior art anticipates the claimed range. *Atofina*, 441 F.3d at 999. Rather, to anticipate a claimed range, the prior art must disclose the claimed range with "sufficient specificity." *Atofina*, 441 F.3d at 999 (holding that "[g]iven the considerable difference between the claimed range and the range in the prior art, no reasonable fact finder could conclude that

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the prior art describes the claimed range with sufficient specificity to anticipate this limitation of the claim”).

The Examiner does not direct us to any portion of Michie that discloses a specific data point or example that falls within the claimed range for the ratio of I21 melt indices. *See generally* Final Act.

We also do not find the Examiner’s calculations for the ratio of I21 melt indices at pages 6 and 7 of the Answer establish that Michie discloses a ratio of I21 melt indices with sufficient specificity to anticipate the claimed ratio of I21 melt indices. Here, although the prior art calculated range encompasses the claimed range for the ratio of I21 melt indices, the claimed range is narrower than the prior art range and Michie does not specifically disclose a narrow range that falls within the claimed range. *See Atofina*, 441 F.3d at 1000 (“the disclosure of a range . . . does not constitute a specific disclosure of the endpoints of that range”). *See also ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1345 (Fed. Cir. 2012) (“We explained [in *Atofina*] that the prior art’s teaching of a broad genus (i.e., broad temperature range) does not disclose every species within that genus.”).

Moreover, given the considerable difference between the claimed range of 40–120 and the prior art range of 0.08 to 7500, or even of 0.08 to 375, the Examiner has failed to direct us to persuasive evidence in the record or provide an adequate technical reasoning as to why the claimed narrow range is disclosed with sufficient specificity in Michie such that a reasonable fact finder could conclude that the prior art anticipates the claim. *Atofina*, 441 F.3d at 999. That is, the Examiner points to no data in Michie that would lead to the claimed range.

Accordingly, we reverse the Examiner's prior art rejection of claims 1–5 and 7–21 under pre-AIA 35 U.S.C. § 102 (b) for the reasons the Appellant presents and we give above.

*Rejection under 35 U.S.C. § 103(a) (Claim 1)*

The Examiner relies on the same findings presented for the anticipation rejection. Final Act. 3. The Examiner concludes that the Examiner's calculated ranges for Michie's ratio of I21 melt indices significantly overlaps the claimed range for the ratio of I21 melt indices. *Id.*

Appellant argues that the Examiner has not established that a ratio of I21 melt indices is recognized by one skilled in the art as a result-effective variable. Appeal Br. 11. According to Appellant, Michie does not disclose this ratio and the Examiner provides no motivation as to why it would be obvious to optimize a broad calculated ratio from 0.08–7500 for Michie to achieve the claimed ratio of 40 to 120. *Id.* Appellant further asserts that the Examiner provides no motivation to optimize the Michie's specified I21 ranges or the calculated I21 and/or calculated ratio ranges to achieve Appellant's claimed ratio. *Id.* Thus, Appellant argues that, absent impermissible hindsight, the Examiner has not established a prima facie case of obviousness. *Id.*

Appellant's arguments are not persuasive of reversible error.

Where a claim range overlaps or is fully encompassed by a prior art range, a prima facie case of obviousness exists. *In re Peterson*, 315 F.3d 1325, 1329–30 (Fed. Cir. 2003) (“Selecting a narrow range from within a somewhat broader range disclosed in a prior art reference is no less obvious than identifying a range that simply overlaps a disclosed range. In fact, when, as here, the claimed ranges are completely encompassed by the prior art, the conclusion is even more compelling than in cases of mere overlap.”).

Appellant does not dispute the Examiner's calculations for Michie's ratio of I21 melt indices or that the Examiner's calculated ratio of I21 melt indices encompasses the claimed range for the ratio of I21 melt indices. *See generally* Appeal Br. Therefore, the burden has shifted to Appellants to show that the claimed invention would not have been obvious. *Peterson*, 315 F.3d at 1330.

To overcome the prima facie case of obviousness, Appellant argues that the Declaration from co-inventor Stephanie M. Whited<sup>3</sup> (hereinafter "Declaration" or "Decl.") shows evidence of the criticality of the claimed ratio ranges. Appeal Br. 11.

When evidence of secondary considerations is submitted, we begin anew and evaluate the rebuttal evidence along with the evidence upon which the conclusion of obviousness was based. *In re Rinehart*, 531 F.2d 1048, 1052 (CCPA 1976). The burden of establishing unexpected results rests on the Appellant. Appellant may meet this burden by establishing that the difference between the claimed invention and the closest prior art was an unexpected difference. *See In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972). The unexpected results must be established by factual evidence; attorney statements are insufficient to establish unexpected results. *See In re Geisler*, 116 F.3d 1465, 1470–71 (Fed. Cir. 1997). Further, a showing of unexpected results supported by factual evidence must be reasonably commensurate in scope with the degree of protection sought by the claims on appeal. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035 (CCPA 1980).

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<sup>3</sup> The Declaration under 37 C.F.R. § 1.132 dated February 27, 2018 was entered into the record by the Examiner in the Final Office Action dated June 8, 2018.

The Declaration relies on the Comparative and Inventive Examples disclosed in the Specification. Decl. ¶ 3; Spec. 25 (Table 3, showing the composition of the resins tested), 26 (Table 4, showing the properties of the resins tested), Figure 1. The Declaration also presents data for additional Comparative and Inventive Samples. Decl. ¶ 4, Table A1 and Figure A1.

Declarant states that Table 4 of the Specification shows that Comparative Examples A–C have a ratio of I21 melt indices of less than 40 that results in either an undesirable inner pipe appearance (Comparative Examples B and C) or the need for greater amount of specific energy to form a pipe (Comparative Example A). Decl. ¶ 3. Declarant also states that Table A1 and Figure A1 show that the gel rating reaches undesirable levels for ratios of I21 melt indices below 40. Decl. ¶ 4. Appellant discloses a desirability to minimize the presence of gel. Spec. 12.

First, it is not clear that Appellant has compared the claimed invention against the closest prior art (Michie).<sup>4</sup> Further, the evidence presented in the Specification and the Declaration compares a limited number of inventive resins having a ratio of I21 melt indices within the claimed range against Comparative Examples having a ratio of less than 40. Appellant and Declarant do not explain why the limited number of inventive resins tested is representative of the broad scope of resins claimed. In addition, Declarant states that the gel rating worsens as the ratio increases above 120. Decl. ¶ 4.

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<sup>4</sup> At the oral hearing, Appellant argued that Comparative Example B in the Specification “is similar to what is found in the Michie reference. It’s not exactly the same rates because it’s hard to reproduce the resin exactly the same, but they are very, very close.” Tr. 11. Thus, Appellant has not adequately established that the single Comparative Example B is representative of Michie’s compositions.

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Declarant appears to rely solely on an extrapolation of data from Figure A1 to support this statement and does not direct us to any objective evidence in support of this statement. Appellant's attorney arguments cannot take the place of evidence. *See In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Payne*, 606 F.2d 303, 315 (CCPA 1979).

We also note that, like Appellant, Michie seeks to minimize the gel content in the resins. Michie 7, 15.

Thus, on this record, Appellant has not adequately explained why the evidence relied upon would have been unexpected by one of ordinary skill in the art or is reasonably commensurate in the scope with the claims.

Accordingly, we affirm the Examiner's prior art rejection of claims 1–5 and 7–21 under pre-AIA 35 U.S.C. § 103(a) for the reasons the Examiner presents and we give above.

### CONCLUSION

Because the affirmed rejection reaches all the claims presented for review on appeal, our decision is an affirmance.

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–5, 7–21	102(b)	Michie		1–5, 7–21
1–5, 7–21	103(a)	Michie	1–5, 7–21	
<b>Overall Outcome</b>			<b>1–5, 7–21</b>	

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED