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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* CELINE FARCET and BERTRAND LION

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Appeal 2018-000650  
Application 14/116,015  
Technology Center 1600

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Before TAWEN CHANG, TIMOTHY G. MAJORS, and  
RACHEL H. TOWNSEND, *Administrative Patent Judges*.

MAJORS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant<sup>1</sup> submits this appeal under 35 U.S.C. § 134 involving claims to a diblock or triblock polymer, and cosmetic compositions including the polymer. The Examiner rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> Appellant identifies the Real Party in Interest as L'OREAL. Appeal Br. 2.

## STATEMENT OF THE CASE

According to the Specification, Appellant's invention "relates to novel block polymers, and also to the cosmetic compositions comprising them." Spec. 1:4–5. "The objective of the present invention is to provide block polymers with low sensitivity to fatty substances, in particular to food oils and to sebum." *Id.* at 1:13–14; *see also id.* at 1:25–26 ("The polymers according to the invention are preferably film-forming polymers which have low sensitivity to food oils or are insensitive thereto, and therefore capable of being advantageously used in make-up compositions.").

The Specification states that "the presence of certain monomers within the same block, linked to a particular configuration of the polymer (succession of blocks), can make it possible to achieve this objective." *Id.* at 1:15–17. "[T]he present invention is therefore a diblock or triblock polymer of AB, ABA or BAB structure, comprising at least one block A which comprises isobutyl acrylate and acrylic acid." *Id.* at 1:19–21.

Claims 1–3, 5–16, and 19–23 are on appeal. Claim 1, the only independent claim, is illustrative, and reads:

1. A diblock or triblock polymer of AB, ABA or BAB structure, comprising at least one block A which comprises isobutyl acrylate and acrylic acid, wherein the isobutyl acrylate and acrylic acid mixture represents 50% to 100% by weight of the total weight of said block A and wherein the blocks A in the triblock polymer of ABA are identical to each other and the blocks B in the triblock polymer of BAB are identical to each other, wherein, in the block A, the isobutyl acrylate represents 75% to 99.5% by weight of the total weight of the isobutyl acrylate and acrylic acid mixture; and the acrylic acid represents

0.5% to 25% by weight of the total weight of the isobutyl acrylate and acrylic acid mixture.

Appeal Br. 11 (Claims App'x).

The claims stand rejected<sup>2</sup> under 35 U.S.C. § 103(a) as obvious over Boupat,<sup>3</sup> Adam,<sup>4</sup> and Mougin.<sup>5</sup> Final Act. 6–9; Ans. 2–8.

## DISCUSSION

### *Issue*

The issue is whether a preponderance of the evidence cited by the Examiner supports the conclusion that claims 1–3, 5–16, and 19–23 would have been obvious over the combination of Boupat, Adam, and Mougin.

Appellant argues the claims are nonobvious over the combined art. Appeal Br. 7–8. Appellant does not, however, provide separate argument as to any of the claims on appeal. *Id.* Accordingly, our analysis focuses on independent claim 1 and, on this record, the patentability of the remaining claims rises or falls with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

### *Findings of Fact*

The Examiner's findings of fact and reasoning in support of the rejection are provided at pages 6–8 of the Final Rejection and pages 3–8 of

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<sup>2</sup> The Examiner withdrew the double patenting and § 112 rejections entered in the Final Rejection dated Dec. 1, 2016 ("Final Act."). See Mar. 9, 2017 Adv. Act. 2; see also Ans. 2 mailed Aug. 22, 2017.

<sup>3</sup> Boupat et al., US 7,632,905 B2, issued Dec. 15, 2009.

<sup>4</sup> Adam et al., US 2002/0198347 A1, published Dec. 26, 2002.

<sup>5</sup> Mougin, US 6,805,872 B2, issued Oct. 19, 2004.

the Examiner's Answer. The below findings are cited for emphasis and as a convenient reference to the prior art.

FF 1. Bopat "relates to a linear ethylenic block copolymer comprising in each block at least one ionic hydrophilic unit." Bopat Abst. Bopat also "relates to a cosmetic or pharmaceutical composition comprising such a copolymer, and also to a cosmetic process for making up or caring for keratin materials using the said composition." *Id.*<sup>6</sup> Bopat teaches that such polymers "have satisfactory mechanical properties," such as elasticity, and may provide "good adhesion without having a tacky feel." *Id.* at 2:33–36. Bopat discloses that such polymers "find a most particular application in the cosmetics field, especially in haircare or in makeup." *Id.* at 2:37–38. Moreover, "[w]hen they are used in nail varnishes, these polymers form a deposit that adheres satisfactorily to the nail without, however, being easily worn away." *Id.* at 2:39–41.

FF 2. According to Bopat, "[t]he block polymer . . . is a linear block ethylenic polymer, which is advantageously film-forming," and Bopat teaches that a block polymer "means a polymer comprising at least 2 different successive blocks, i.e., blocks of different chemical nature." *Id.* at 2:43–50. Bopat discloses that the polymers "may be diblock polymers of the AB type; or triblock polymers of the ABA, BAB or ABC type with C different from A and B." *Id.* at 14:17–19.

FF 3. Bopat teaches that "[a]mong the anionic hydrophilic monomers that are more particularly preferred [for each block], mention

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<sup>6</sup> Appellant notes that the Bopat and Mougine references are commonly owned by Appellant, L'Oreal. Appeal Br. 7–8, n.1 and n.2.

may be made especially of acrylic acid,” as well as other monomers. *Id.* at 5:14–31. Boupat further teaches that “[t]he ionic hydrophilic monomers are present in each block in a proportion of from 2% to 100% by weight . . . , better still from 5% to 50% by weight or even from 8% to 30% by weight, relative to the weight of the block.” *Id.* at 3:15–19.

FF 4. Boupat teaches that “[b]esides the ionic hydrophilic monomers, the blocks . . . may comprise one or more additional monomers chosen from nonionic hydrophilic monomers and hydrophobic monomers, and mixtures thereof,” which “additional monomers may be identical or different from one block to another.” *Id.* at 8:20–26. According to Boupat, “[p]referably, the hydrophobic monomers may be present in proportion of from 0 to 98% by weight . . . and better still from 3% to 92% by weight, relative to the weight of the block, in at least one block, or even in each block.” *Id.* at 8:36–40. Boupat teaches that, “among the additional monomers (especially hydrophobic monomers) that are more particularly preferred, alone or as a mixture,” is “isobutyl acrylate (-24° C. [glass transition temperature, Tg]),” as well as other potential hydrophobic monomers. *Id.* at 11:58–12:17; *see also id.* at 12:25–29 (“Preferably, the copolymers . . . may comprise at least one block comprising monomers chosen from n-hexyl methacrylate (-5° C.), ethyl acrylate (-24° C.), isobutyl acrylate (-24° C.), n-butyl acrylate (-54° C.) . . .”).

FF 5. Adam relates to block ethylenic copolymers comprising unsaturated hydrophilic and hydrophobic monomers, chosen to provide favorable surface-active properties to the polymer. *Id.* Abst.; *see also id.* ¶ 62 (disclosing use of the block copolymers “as adhesion promoters”).

Adam describes surface-active block copolymers comprising at least one hydrophilic block and at least one hydrophobic block. *See, e.g.*, Adam Abst., ¶¶ 44–53.

FF 6. Adam discloses that the block copolymers “can be simply diblocks, with a hydrophobic block and a hydrophilic block, or even triblocks.” *Id.* ¶ 45. Adam discloses that “the most preferred hydrophilic monomers are acrylic acid (AA), [and] acrylamide (AM),” among others. *Id.* ¶ 51. Adam identifies “isobutyl acrylate” as among the preferred hydrophobic monomers. *Id.* ¶¶ 52–53; *see also id.* ¶¶ 131–140 (Example 7, describing a diblock polymer comprising an 80/20 ratio of butyl acrylate to acrylic acid).

FF 7. Mougine relates to block ethylenic copolymers and their use in cosmetics. Mougine Abst. Mougine describes, for example, diblock (AB) or triblock (ABA or BAB) copolymers, which may be optimized by inclusion of rigid and flexible blocks (having different respective glass transition temperatures), to provide polymer films with favorable elastic properties (e.g., tensile recovery). *Id.*; *see also id.* at 1:61–2:20, 2:4:45–55.

### *Analysis*

#### Claim 1

The Examiner finds that claim 1 would have been obvious over Boupat, Adam, and Mougine. Final Act. 6–8. More specifically, the Examiner finds that Boupat teaches cosmetic compositions comprising linear, ethylenic block copolymers of, for example, the AB (diblock) or ABA (triblock) type. *Id.* at 6. According to the Examiner, Boupat teaches that the A block may comprise an ionic hydrophilic monomer, particularly

acrylic acid, in an amount from 2–100% of the block. *Id.* at 6–7. The Examiner further finds that Boupat teaches that, besides the ionic hydrophilic monomers, the block may comprise “additional monomers,” such as hydrophobic monomers in an amount of 0–98% by weight of the block. *Id.* at 7. And, the Examiner finds, Boupat discloses isobutyl acrylate as one such hydrophobic monomer. *Id.*

Further, regarding the claimed composition of the A block (weight percent and relative amounts of isobutyl acrylate and acrylic acid), the Examiner reasons that such composition would have been obvious in view of the overlapping monomers and ranges for such monomers in each block suggested in Boupat. Final Act. 8; *see also* Ans. 4 (“where the claimed ranges ‘overlap or lie inside ranges disclosed by the prior art’ a prima facie case of obviousness exists. MPEP § 2144.05”).

Also, the Examiner reasons, it would have been obvious to optimize the amounts of isobutyl acrylate and acrylic acid monomers in the blocks of Boupat in view of Adam. Final Act. 8. According to the Examiner, Adam teaches that the amount of hydrophobic and hydrophilic monomers used in the polymer are result-effective variables relative to the polymer’s surface active properties, such as promoting adhesion, and allowing a large variation in glass transition temperatures. *Id.* at 8–9; *see also* Ans. 5–6 (“Adam provides several examples of said copolymers comprising n-butyl acrylate and acrylic acid with the weight ratio ranging from 80/20 to 20/80, respectively, identifying thereby the composition of hydrophobic and hydrophilic monomers as result effective variables.”), (“Adam teaches the use of said block copolymers with controlled compositions of acrylic acid

and isobutyl acrylates as adhesion promoters, and/or as wetting agents or hydrophilizing agents . . .”).

The Examiner cites Mougin as teaching that the combination of ethylenic polymer blocks (AB, ABA, or BAB type) with different glass transition temperatures provides favorable elastic characteristics in cosmetics, such as non-stick systems. Ans. 6; Final Act. 9. From this, the Examiner further reasons it would have been obvious to optimize the hydrophobic and hydrophilic monomers in Boupat (particularly isobutyl acrylate monomers and acrylic acid monomers) to provide a combination of polymer blocks with different transition temperatures and, thus, advantageous cosmetic properties. Ans. 6; Final Act. 9.

On this record, we agree with the Examiner’s conclusion that claim 1 would have been prima facie obvious over Boupat, Adam, and Mougin. Boupat teaches, *inter alia*, diblock copolymers of the AB type, and their use in cosmetic compositions. FF 1–2. Boupat further identifies acrylic acid as a preferred ionic hydrophilic monomer for use in each block, and suggests that additional hydrophobic monomers including isobutyl acrylate may be used in each block. FF 3–4.

Moreover, Boupat teaches that each block may include amounts of the respective monomers that encompass or overlap amounts recited in claim 1. *See 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.”).<sup>7</sup> Claim 1 recites an A block including between 50–100% of an acrylic acid and isobutyl acrylate mixture, and indicates that the respective proportion of acrylic acid to isobutyl acrylate in the mixture is 0.5–25% to 75–99.5%. Boupat, however, identifies a range for the ionic hydrophilic monomer (e.g., acrylic acid) in each block of 2–100% by weight, and more preferably 8–30%. FF 3. And Boupat teaches that, “[b]esides the ionic hydrophilic monomers,” each block may include between 0–98%, and more preferably 3–92% by weight, of a hydrophobic monomer such as isobutyl acrylate. FF 4.

Although Boupat discloses several potential monomers and broad ranges for the weight percentages of such monomers in the respective blocks, we conclude that the record here still points to obviousness. First, Boupat’s polymers are designed and used for the same types of compositions to which the claims and Appellant’s invention are directed—cosmetics, and particularly compositions for treating keratin materials including “skin, the lips, the eyelashes, the nails and/or the hair.” Spec. 15:2–4; claim 14; FF 1 (relating to disclosures in Boupat about designing cosmetic compositions with favorable elasticity, adherence, and low tackiness). That the claimed

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<sup>7</sup> MPEP 2144.05(II)(A) (“Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.”). “The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . [I]n such a situation, the applicant must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990).

polymers and those in Boupat are designed for, and being put to, essentially the same uses adds further support to the Examiner's conclusion of obviousness. *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) (holding that where "the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."); *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) ("[D]isclos[ing] a multitude of effective combinations does not render any particular formulation less obvious. This is especially true because the claimed composition is used for the identical purpose taught by the prior art.").

Second, the Examiner cites evidence and provides technical reasoning in support of the Examiner's determination that the amounts of hydrophilic and hydrophobic monomers in the block copolymer are result effective variables that would predictably be optimized for properties such as adherence and elasticity. Final Act. 8–9; Ans. 5–7. For example, the Examiner reasons the skilled artisan would have varied the proportion of hydrophilic and hydrophobic monomers in Boupat's blocks in view of Adam (citing, e.g., Adam's teaching of an 80/20 ratio of hydrophilic to hydrophobic monomers) with an expectation of making the polymers more favorable adhesion promoters for cosmetics. Ans. 5–6. Appellant provides no persuasive argument or evidence to show why the Examiner's reasoning on these points is flawed.

Appellant argues "Boupat does not explicitly disclose a block polymer that comprises at least one block which comprises isobutyl acrylate and acrylic acid," and that "[t]here is no specific example in Boupat" of such a

polymer. Appeal Br. 7. This argument is unpersuasive because, when obviousness is the issue, the prior art must be considered for all that it teaches and suggests—not just what is explicitly combined or described in working examples.<sup>8</sup> *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (“[I]n a section 103 inquiry, the fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered.”) (Internal quotation marks omitted). As explained above, Boupat expressly identifies acrylic acid and isobutyl acrylate as among the preferred ionic hydrophilic monomers and hydrophobic monomers, respectively, for inclusion in the blocks of the copolymer. FF 1–4.

Appellant also argues that “Boupat is not concerned with problems addressed by the present invention,” in particular cosmetics with “low sensitivities to fatty substances.” Appeal Br. 7. We remain unpersuaded because whatever problem may have motivated the inventors here need not be the same as the reasons offered to explain why the skilled artisan would have modified or combined the prior art. As the Supreme Court has held, “neither the particular motivation nor the avowed purpose of the patentee controls” the obviousness inquiry. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007) (“What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.”). As noted

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<sup>8</sup> It also appears that Boupat does exemplify diblock copolymers where at least one block comprises acrylic acid and butyl acrylate, even if not including isobutyl acrylate specifically. *See, e.g.*, Boupat 24:10–16 (Example 1).

above, given the overlapping nature of Boupat's disclosure with the scope of the claims, and based on the further reasons cited by the Examiner, we conclude that claim 1 would have been obvious on this record.

Even if Adam suggests that the monomeric amounts of hydrophilic and hydrophobic components are result effective variables, Appellant contends Adam's properties are not those of concern in Boupat or with regard to the claimed invention. Appeal Br. 8. This argument fails, however, to persuasively rebut the Examiner's determination on this record that a skilled artisan would have considered Adam's teachings as being pertinent to designing polymers with favorable surface-active properties, such as improved adhesion, for use in cosmetics such as nail varnish compositions which need to adhere to the nail surface (see e.g., Boupat 2:39–14 (“When they are used in nail varnishes, these polymers form a deposit that adheres satisfactorily to the nail without, however, being easily worn away.”)), and optimized the amounts of acrylic acid and isobutyl acrylate accordingly. *See* Final Act. 8–9; Ans. 7–8.<sup>9</sup>

Finally, Appellant contends “the results achievable by the present invention are unexpected and surprising, as demonstrated by examples in the specification.” Appeal Br. 8. According to Appellant, the films formed with Examples 1 and 2 provided a better wear property (less, or non-tacky 3 hours after exposure to a fatty substance) versus a comparative example

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<sup>9</sup> Appellant did not file a Reply Brief in response to the Examiner's positions as further explained in the Answer.

(Example 3), which Appellant asserts “does not include the isobutyl acrylate.”<sup>10</sup> *Id.*

Appellant’s argument and evidence on alleged unexpected results, when considered together with the evidence of obviousness is not sufficient to establish the non-obviousness of claim 1 on this record for at least the following reasons. First, the cited examples are not commensurate in scope with the breadth of claim 1. *In re Lindner*, 457 F.2d 506, 508 (CCPA 1972) (“It is well established that the objective evidence of nonobviousness must be commensurate in scope with the claims.”). Examples 1 and 2 each include at least one block with isobutyl acrylate and acrylic acid, but the proportion of each in such block (i.e., block A) is approximately 83% isobutyl acrylate to 17% acrylic by weight. *See, e.g.*, Spec. 17:7–18:8 (describing a block comprising 25/5 isobutyl acrylate/acrylic acid). Claim 1 encompasses a block having between 50–100% of a mixture of isobutyl acrylate and acrylic acid and, within such a mixture, as little as 0.5% acrylic acid. Appellant does not provide persuasive evidence to demonstrate that the results observed with the two cited examples would be expected over the entire breadth of claim 1. Similarly, the cited examples provide a specific combination of monomers in the “B” portion of the diblock or triblock (isobornyl acrylate/isobornyl methacrylate). Spec. 17–18 (Examples 1 and 2). But claim 1 does not recite any particular monomer or monomer

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<sup>10</sup> Contrary to Appellant’s assertion, it appears Example 3 (comparative) *does* include isobutyl acrylate, but it *does not* include acrylic acid. Spec. 19:1–9 (describing a diblock polymer with “a secondary block (42 isobutyl acrylate)” and a “main block (29/29 isobornyl acrylate/isobornyl methacrylate)”).

combination required in block B. Thus, we do not find the evidence sufficient to demonstrate that one of ordinary skill in the art would reasonably discern a trend from the two examples such that it would allow him to reasonably extend the probative value of the data therefrom.

Second, Appellant’s counsel characterizes the results of Examples 1 and 2 as “unexpected and surprising.” Appeal Br. 8. Counsel’s argument is, however, not evidence. *See In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *Meitzner v. Mindick*, 549 F.2d 775, 782 (CCPA 1977) (stating that “[a]rgument of counsel cannot take the place of evidence lacking in the record”). And the Specification, although describing the results as “good” or “better” relative to the comparative compound in certain compositions, neither states nor explains why such results differed to the degree that they were surprising or unexpected. Spec. 19–20 (Examples 4–7).

### *Conclusion of Law*

For the reasons above, we find that the preponderance of the evidence on this record supports the Examiner’s conclusion that claim 1 would have been obvious over Boupat, Adam, and Mougine. Claims 2, 3, 5–16, and 19–23 have not been argued separately and therefore fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

### SUMMARY

We affirm the rejection for obviousness on appeal.

<b>Claim(s) Rejected</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–3, 5–16, and 19–23	§ 103 Boupat, Adam, Mougine	1–3, 5–16, and 19–23	

Appeal 2018-000650  
Application 14/116,015

TIME PERIOD FOR RESPONSE

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

AFFIRMED