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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VOLKER WENDEL, HELMUTH VÖLLMAR, HOLGER TÜRK,
MARKUS BUCHMANN, VALERIE ANDRE,
MATTHIAS LAUBENDER, CLAUDIA WOOD, and ANDREE DRAGON

Appeal 2017-010300
Application 12/991,009
Technology Center 1600

Before MICHELLE N. ANKENBRAND, *Acting Vice Chief Administrative Patent Judge*, BEVERLY A. FRANKLIN, and CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

ANKENBRAND, *Acting Vice Chief Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's decision² finally rejecting claims 1, 4–11, 16, 19–23, 25–27, 29, and 30. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellant identifies BASF SE as the real party in interest. Appeal Brief, filed December 2, 2016 (“Br.”) 1.

² Final Action, mailed July 15, 2016 (“Final Act.”).

STATEMENT OF THE CASE

Background

The subject matter on appeal relates to cosmetic preparations comprising water-dispersible polyurethanes as a means for modifying the rheological properties of the preparations. Specification, filed November 4, 2010 (“Spec.”) 1:5–7. According to the Specification, it was known in the art to modify a cosmetic preparation to increase its viscosity or thicken the composition. *Id.* at 2:1–6. Many water-dispersible polyurethane thickeners existed, but had disadvantages when used in cosmetic preparations. *Id.* at 2:7–14. For example, many known polyurethane-containing thickeners were sensitive to salt, surfactants, or mixtures thereof and, as a result, were less useful as viscosity-imparting agents in shampoo and cosmetic preparations. *Id.* at 2:16–27. In particular, adding a salt to a polyurethane thickener was known to drastically decrease the viscosity of the polyurethane. *Id.* at 2:21–22. As a result, finding salt-stable thickeners with good texture and pleasant feel for use in cosmetic preparations “ha[d] proven extremely difficult.” *Id.* at 2:27–30

Appellant purports to improve upon the known polyurethane thickeners by providing “a cosmetic preparation comprising a water-dispersible polyurethane (PU) with an essentially linear backbone composed of alternating hydrophilic and hydrophobic sections” that have increased viscosity, are stable, convey a soft, non-greasy and non-sticky feel to the touch, and are cosmetically and dermatologically acceptable. *Id.* at 4:27–39.

Of the appealed claims, claims 1 and 22 are independent. Claim 1 is representative of the subject matter on appeal, and reproduced below:

1. A cosmetic preparation comprising a mixture of water-dispersible- polyurethanes (PU) with an essentially linear backbone composed of alternating hydrophilic sections S and P, and hydrophobic sections T and D, where the polyurethanes include;

- a. the two, hydrophobic terminal sections (T) that are branched or unbranched alkyl radicals comprising from 8 to 20 carbon atoms,
- b. at least two of the hydrophilic sections (S) adjoins each of the terminal section T,
- c. at least two of the hydrophobic sections (D) adjoins each section S on at least one side, and
- d. at least one hydrophilic section (P), where if more than one section P is present at least one hydrophobic section D separates sections P, and

the mixture of polyurethanes with sections S, P, T and D further includes at least three hydrophilic sections, and the ratio of the molecular weights of each hydrophilic section S to the molecular weight of each hydrophilic section P is from 1:3.4 to 1:80, the at least two hydrophobic sections D are aliphatic diisocyanate radicals and the at least one hydrophilic section P is a polyether radical with a number-average molecular weight of at least 1500 g/mol, and

the mixture includes polyurethanes with sections T that are both branched, and polyurethanes with terminal sections T that are both linear or polyurethanes with one branched terminal section T and one linear terminal section T, wherein

the cosmetic preparation further comprises at least 50% by weight water, and the mixture of polyurethanes is present in the preparation from 0.1 % to 1.5% by weight.

Br. 21 (Claims App'x). Claim 22 is directed to a similar cosmetic preparation comprising a mixture of water-dispersible polyurethanes.

Id. at 23.

The Rejections

The Examiner maintains the following rejections on appeal:

1. Claims 1, 4–9, 16, 19–23, 26, 27, 29, and 30 are rejected under 35 U.S.C. § 103(a) as unpatentable over Bigorra Llosas,³ in view of König⁴;
 2. Claim 10 is rejected under 35 U.S.C. § 103(a) as unpatentable over Bigorra Llosas, in view of König and Jacquet⁵;
 3. Claim 11 is rejected under 35 U.S.C. § 103(a) as unpatentable over Bigorra Llosas, in view of König and Nojiri⁶; and
 5. Claim 25 is rejected under 35 U.S.C. § 103(a) as unpatentable over Bigorra Llosas, in view of König and Borbely.⁷
- Final Act. 3–8; Examiner’s Answer, mailed May 5, 2017 (“Ans.”) 2.⁸

OPINION

After having considered the evidence presented in this Appeal and each of Appellant’s contentions, we are not persuaded that Appellant identifies reversible error with respect to the Examiner’s rejections. We affirm the Examiner’s rejections for the reasons expressed in the Final Action, the Answer, and explained below.

³ Bigorra Llosas, US 2004/0028742 A1, published Feb. 12, 2004.

⁴ König, US 5,612,408, issued Mar. 18, 1997.

⁵ Jacquet, US 4,826,681, issued May 2, 1989.

⁶ Nojiri, US 2004/0228894 A1, published Nov. 18, 2004.

⁷ Borbely, US 2008/0070993 A1, published Mar. 20, 2008.

⁸ The Examiner withdraws a provisional obviousness-type double patenting rejection of claims 1, 4–11, 16, 19–23, 25–27, 29, and 30 over the claims of copending Application No. 12/991,302. Ans. 2.

*Rejections 1–3 – Obviousness over Bigorra Llosas, König,
and Additional References*

Appellant “requests that the Board collectively address the section 103(a) rejection[s] of claims 1, 4, 5–11, 16, 19, 20, 22, 23, 26, 29, and 30 over Bigorra Llosas and König.” Br. 5. We limit our discussion to claim 1, which we select as representative of the group. Claims 4, 5–11, 16, 19, 20, 22, 23, 26, 29, and 30 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv). Appellant also presents arguments for the patentability of claim 27 over Bigorra Llosas and König, *id.* at 15–16, which we address separately.

Claim 1

Claim 1 requires, *inter alia*, “a cosmetic preparation comprising a mixture of water-dispersible polyurethanes with an essentially linear backbone composed of alternating hydrophilic sections S and P, and hydrophobic section T and D” that include “two, hydrophobic terminal sections (T) that are branched or unbranched alkyl radicals comprising from 8 to 20 carbon atoms” “at least two hydrophilic section (S)” adjoining each of the terminal sections, “at least two hydrophobic sections (D)” adjoining each section S on one side, and “at least one hydrophilic section (P)” where “the ratio of the molecular weights of each hydrophilic section S to the molecular weight of each hydrophilic section P is from 1:3.4 to 1:80.” Br. 21 (Claims App’x). As is relevant to this appeal, the Examiner finds that Bigorra Llosas discloses cosmetic preparations comprising thickening agents that are water-dispersible polyurethanes within the scope of Appellant’s claims. Final Act. 3. In particular, as to the above-recited limitations of claim 1, the Examiner points to Bigorra Llosas’s Example 3 and finds that Example 3 discloses a polyurethane composition having the arrangement of

sections T, S, D, and P that claim 1 requires. *Id.*; Ans. 3–4. For the identity of sections T, S, D, and P, the Examiner finds that Example 3 discloses terminal cetyl alcohol groups that correspond to hydrophobic sections T, two hydrophilic spacer sections S that each comprise 50 ethylene oxide units and that adjoin the T sections, polyethylene glycol (“PEG”) 6000 (a hydrophilic polyether section P), and two tetramethylxylene diisocyanates (hydrophobic section D). Final Act. 3.

The Examiner acknowledges that the cetyl alcohol groups in Example 3 that correspond to hydrophobic sections T are not branched alkyl radicals, but finds that Bigorra Llosas teaches that its terminal sections may comprise a branched iso-alkyl radical, such as a 2-ethylhexyl or isostearyl group, in place of the cetyl group. *Id.* at 4 (citing Bigorra Llosas ¶ 23). The Examiner also finds that Bigorra Llosas teaches using a mixture of alcohols to form the terminal sections, which result in a mixture of polyurethanes as recited in claim 1. *Id.* The Examiner finds that these teachings would have led the skilled artisan to a polyurethane falling within the scope of claim 1. *Id.* at 3–4.

As to the molecular weights ratio range recited in claim 1, the Examiner finds that Bigorra Llosas’s Example 3 discloses a ratio of molecular weights of each hydrophilic section S to each hydrophilic section P of about 1:3.0, which the Examiner recognizes “is somewhat below the 1:3.4 ratio” recited in claim 1. *Id.* at 4, 5. However, the Examiner finds that the broader teachings of Bigorra Llosas describe preferred polyethylene glycols with degrees of condensation from 100–250. *Id.* (citing Bigorra Llosas ¶ 27). Thus, the Examiner reasons that using a PEG with a degree of condensation of 200 for the P section would have resulted in a ratio S:P of

approximately 1:4, which falls within the scope of claim 1. *Id.*⁹ The Examiner concludes that it would have been obvious to modify Bigorra Llosas's Example 3 to comprise a ratio of molecular weights as recited in claim 1 because Bigorra Llosas discloses that polyethylene glycols resulting in such a range are preferred. *Id.* at 6.

Appellant's arguments focus on the Examiner's findings as to Bigorra Llosas's disclosure. *See* Br. 7 ("the Board need only focus on the complete teachings of Bigorra Llosas" for purposes of the appeal). Appellant contends that "the dispositive issue on appeal" is whether Bigorra Llosas's disclosed genus of polyurethanes teaches or suggests the sub-genus directed to a mixture of polyurethanes" that claim 1 requires. *Id.* at 8. According to Appellant, the fact that Bigorra Llosas's polyurethane of formula (I) encompasses the claimed subgenus of polyurethanes is not sufficient by itself to establish a prima facie case of obviousness. *Id.* (citing *In re Baird*, 16 F.3d 380, 382 (Fed. Cir. 1994)).

Appellant's argument is not persuasive. The Examiner does not conclude that the recited polyurethanes would have been obvious because

⁹ The Examiner makes additional findings with respect to the remaining limitations of claim 1. *See* Final Act. 5. In particular, the Examiner explains that Bigorra Llosas does not explicitly disclose using an aliphatic diisocyanate, but finds that König teaches a polyurethane-based thickener comprising an aliphatic diisocyanate, such as hexamethylene diisocyanate. *Id.* at 5 (citing König, Abstract, Example 1). The Examiner concludes that it would have been obvious to modify Bigorra Llosas to comprise an aliphatic diisocyanate as König discloses because doing so would have been substituting a known equivalent for the same purpose, i.e., making a polyurethane based cosmetic thickener. *Id.* Appellant does not dispute the Examiner's findings in this regard. *See* Br. 7 (agreeing that modifying Bigorra Llosas's polyurethane with König's diisocyanate "is proper under section 103(a)").

Bigorra Llosas discloses a prior art genus of polyurethanes of formula (I). Rather, the Examiner's rejection focuses on the polyurethane composition in Bigorra Llosas's Example 3 (which Appellant concedes has a similar structure to the recited polyurethanes), and how and why a person of ordinary skill in the art would have modified that polyurethane in view of Bigorra Llosas's additional disclosure (and König) to arrive at the recited polyurethanes. *See* Final Act. 3–6; Ans. 3–9; *see also* Br. 7 (admitting that Bigorra Llosas's polyurethanes are composed of alternating hydrophobic and hydrophilic sections and may comprise two terminal groups).

Moreover, we find Appellant's reliance on *In re Baird* misplaced. In *Baird*, the Federal Circuit determined that “[a] disclosure of millions of compounds does not render obvious a claim to three compounds, particularly when the disclosure indicates a preference leading away from the claimed compounds.” *Baird*, 16 F.3d at 383. Appellant's claim 1, however, is not so narrow. For example, claim 1 is directed to a mixture of water-dispersible polyurethanes that include at least two terminal sections that can have a number of suitable branched and/or unbranched alkyl radicals (i.e., any branched or unbranched alkyl radical having 8 to 20 carbon atoms).

Appellant also argues that the Examiner erred in finding that a skilled artisan would have used 2-ethylhexyl alcohol (the one branched alcohol Appellant contends Bigorra Llosas discloses) in place of cetyl alcohol for the terminal sections of the polyurethane. Br. 9–10. Specifically, Appellant contends that merely listing 2-ethylhexyl alcohol along with fourteen other fatty alcohols that may comprise the terminal sections is not sufficient to have led a person of ordinary skill in the art to select 2-ethylhexyl alcohol. *Id.* at 8, 10.

We disagree. Here, Appellant concedes Bigorra Llosas “teaches that the terminal section can include a branched alkyl radical . . . such as a 2-ethylhexyl group in place of the [preferred] cetyl group.” *Id.* at 7–8; *see* Bigorra Llosas ¶ 23 (disclosing 2-ethylhexyl alcohol and isostearyl alcohol as two “[t]ypical examples of suitable fatty alcohols”). Nevertheless, Appellant argues that Bigorra Llosas would not have led a person of ordinary skill in the art to utilize 2-ethylhexyl alcohol “instead of one of the other fourteen linear, fatty alcohols listed.” Br. 9.

Although Bigorra Llosas suggests a number of possible alcohols for the terminal sections of its polyurethane, the mere fact that it “discloses a multitude of effective combinations does not render any particular formulation less obvious.” *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989). Rather, we must evaluate all disclosures therein for what they would have fairly suggested to one of ordinary skill in the art. *See In re Boe*, 355 F.2d 961, 965 (CCPA 1966); *see also In re Corkill*, 771 F.2d 1496, 1500 (Fed. Cir. 1985) (affirming obviousness rejection in light of prior art teaching that “hydrated zeolites will work” in detergent formulations, even though “the inventors selected the zeolites of the claims from among ‘thousands’ of compounds”). After having reviewed Bigorra Llosas’s disclosure, we agree with the Examiner that the ordinarily skilled artisan seeking to prepare a polyurethane thickener reasonably would have been led to utilize any of the alcohols Bigorra Llosas discloses, including a branched fatty alcohol, and would have reasonably expected success in achieving a viable polyurethane. *See* Ans. 3–6; Bigorra Llosas ¶ 23.

Appellant argues that in addition to selecting a branched alcohol, one of ordinary skill in the art would have had to select an ethylene oxide adduct for section S to arrive at the claimed cosmetic preparation. Br. 10.

According to Appellant, the Examiner selects the ethoxylate adduct of 2-ethylhexyl alcohol “without any direction in Bigorra Llosas.” *Id.* at 11.

Appellant’s argument is not persuasive because it does not address the Examiner’s rejection. Specifically, the Examiner’s rejection is based, in part, on modifying the terminal sections of the polyurethane disclosed in Bigorra Llosas’s Example 3 by replacing the cetyl alcohol with 2-ethylhexyl alcohol or isostearyl alcohol. *See* Final Act. 3–4. As the Examiner finds, and Appellant does not dispute, Example 3 already includes hydrophilic spacer sections S that each comprise 50 ethylene oxide units. *Id.*; *see* Bigorra Llosas ¶ 158. Thus, contrary to Appellant’s argument, the Examiner does not select the ethoxylate adduct of 2-ethylhexyl alcohol without any direction in Bigorra Llosas.

Appellant further argues that the Examiner erred in rejecting claim 1 because Bigorra Llosas does not teach or suggest a mixture of polyurethanes. Br. 11–12. As with the branched alcohol argument we address above, Appellant contends that the Examiner “account[s] for the term ‘mixture of polyurethanes’” in claim 1 “by relying upon the generic disclosure of Bigorra Llosas, paragraph 23, which refers to ‘technical mixtures thereof’ of the fifteen listed fatty alcohols.” *Id.* at 12. Appellant also argues that Bigorra Llosas’s example polyurethanes “should dominate the section 103(a) inquiry” and that Bigorra Llosas’s Table 1 discloses ten cosmetic preparations, none of which contains a mixture of polyurethanes.

Appellant's argument is not persuasive because, as we explain above, the mere fact that Bigorra Llosas "discloses a multitude of effective combinations does not render any particular formulation less obvious." *Merck*, 874 F.2d at 807 (Fed. Cir. 1989). Further, although Bigorra Llosas exemplifies cosmetic preparations containing a single polyurethane, Bigorra Llosas's disclosure is not limited to its preferred embodiments or examples. *Id.* Instead, we must evaluate all the disclosures therein for what they would have fairly suggested to one of ordinary skill in the art. *In re Boe*, 355 F.2d 961, 965 (CCPA 1966). Here, as Appellant admits, Bigorra Llosas explicitly discloses using mixtures of fatty alcohols to form the terminal sections, which will result in a mixture of polyurethanes, as the Examiner finds. Final Act. 4 (explaining that the mixture of 2-ethylhexyl alcohol or isostearyl alcohol with cetyl alcohol to form the composition will result in a mixture of polyurethanes); Ans. 9.

Appellant argues that the Examiner's conclusion that it would have been prima facie obvious to modify Bigorra Llosas's Example 3 to comprise a ratio of molecular weights encompassing the recited ratio is "conclusory." Br. 12–13. Appellant also argues that, if anything, Bigorra Llosas suggests to use a lower molecular weight PEG because, following Example 3 as the Examiner has modified it to use two 50 ethylene oxide units and PEG-6000, the molecular weight is already 10,400, which is larger than "the expressly stated molecular weight limit of 10,000 for the entire polyurethane." *Id.* at 14.

We disagree, and find that the Examiner provides adequate reasons why a person of ordinary skill in the art would have a reason to use a molecular weights ratio within the recited range. Specifically, the Examiner

points to the broader teachings of Bigorra Llosas that preferred polyethylene glycols may have a degree of condensation between 1 and 250, and finds that a PEG with a degree of condensation of 200—which is within Bigorra Llosas’s preferred range—falls within the scope of the claims. *Id.* Further, as the Examiner finds, and Appellant does not dispute, Bigorra Llosas’s teachings are not limited to 50 ethylene oxide units, as Appellant’s argument suggests and, therefore, provide an express reason to alter the number of ethylene oxide units. Ans. 6–7.

Appellant argues that the mixture of polyurethanes the claim compositions require “exhibit substantially improved results for thickening performance at differen[t] salt concentrations” and “substantial improvement[s] for thickening performance at elevated temperatures over a period of time.” Br. 17–18. Appellant supports that argument with the Declaration of Dr. Holger Türk, filed with the Office on July 31, 2012 (“Türk Declaration” or “Türk Decl.”). Dr. Türk explains that he tested two polyurethanes that differed only in the structure of the terminal hydrophobic sections T. Türk Decl. ¶ 6. One polyurethane, which Appellant describes as the “inventive polyurethane” (Br. 18), was prepared utilizing “a mixture of an ethoxylated linear C₁₆/C₁₈ fatty alcohol and an ethoxylated Iso-C13 alcohol.” Türk Decl. ¶ 7. The second polyurethane, which Appellant describes as the “prior art polyurethane” (Br. 18), was prepared utilizing “an ethoxylated linear C16/C18 fatty alcohol.” Türk Decl. ¶ 8. Dr. Türk then used the two polyurethanes to make oil-water dispersion fluids and tested the thickening properties (i.e., viscosity) of each fluid in the presence of different salt concentrations. *Id.* ¶¶ 9–11, 15. Dr. Türk found that, under the same salt concentrations, fluids including the polyurethane with linear

terminal groups performed worse as thickeners (i.e., had lower viscosities) than fluids including the polyurethane with branched terminal groups. *Id.* ¶¶ 12–14. Dr. Türk further found that the thickening performance of the polyurethane with branched terminal groups was apparent at elevated temperature and over time, whereas the thickening performance of the polyurethane with linear terminal groups was not measurable after two weeks. *Id.* ¶¶ 16–18. Dr. Türk states that his observed results were unexpected. *Id.* ¶¶ 14, 19.

When an Appellant submits evidence of secondary considerations, we evaluate the rebuttal evidence, including the evidence of secondary considerations, along with the evidence upon which the Examiner based the conclusion of prima facie obviousness. *In re Rinehart*, 531 F.2d 1048, 1052 (CCPA 1976). The burden rests with Appellant to establish that the alleged unexpected results associated with the claimed invention are, in fact, unexpected, as well as commensurate in scope with the claimed subject matter. *See, e.g., In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972).

The Türk Declaration includes data showing the viscosities of fluids that include one of the two polyurethanes Dr. Türk prepared—both the initial viscosities and the viscosities at specific time intervals over the course of twelve months. Türk Decl. ¶¶ 12, 13, 16, 17. As the Examiner finds, however, it is not clear that the alleged “inventive composition” is within the scope of the claims because Appellant and Dr. Türk do not set forth the complete structures of the two compositions. Ans. 11.

Further, the data in the Türk Declaration are not commensurate in scope with Appellant’s claims, which encompass a broad scope of T, S, P, and D sections. *Id.* at 12–15. And Appellant does not provide any

explanation why a person of ordinary skill in the art would have accepted the limited showing in the Türk Declaration as evidence of unexpected results sufficient to outweigh the Examiner's evidence of obviousness. *See, e.g., In re Harris*, 409 F.3d 1339, 1344 (Fed. Cir. 2005) (“Even assuming that the results were unexpected, Harris needed to show results covering the scope of the claimed range. Alternatively Harris needed to narrow the claims.”); *In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978) (“Establishing that one (or a small number of) species gives unexpected results is inadequate proof, for ‘it is the view of this court that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.’”) (quoting *In re Tiffin*, 448 F.2d 791, 792 (CCPA 1971)).

Accordingly, we affirm the Examiner's rejection of representative claim 1, as well as the Examiner's rejection of claims 4, 5–11, 16, 19, 20, 22, 23, 26, 29, and 30 under 35 U.S.C. § 103(a) over the combination of Bigorra Llosas and König.

Claim 27

Claim 27 depends from claim 22 and further requires, among other things, a cosmetic preparation “where the two hydrophilic sections S are 3 to 20 ethylene oxide unit radicals.” Br. 23. The Examiner finds Bigorra Llosas discloses that the total number of ethylene oxide units that form adducts (the S sections) with the fatty alcohol to produce the terminal sections T may be anywhere from 1–100, which encompasses the range of ethylene oxide units that claim 27 recites. Final Act. 5.

Referring to its arguments for claim 1, Appellant contends that the “recitation of 3 to 20 ethylene oxide unit radicals requires the Office to

provide additional support for a fifth selection of a sized ethoxylate adduct of a branched fatty alcohol.” Br. 15. Appellant, however, notes that Bigorra Llosas discloses adducts with “1 to 50, preferably 10 to 30 and more particularly 15 to 25 mol ethylene oxide units.” *Id.* (quoting Bigorra Llosas ¶ 23); *see also* Bigorra Llosas ¶¶ 5, 19 (explaining that the fatty alcohols and/or ethylene oxide adducts can be present from 1–100 units). Thus, Appellant admits that Bigorra Llosas discloses a range of ethylene oxide units that overlaps the recited range and, therefore, renders the recited obvious in the absence of criticality (e.g., unexpected results relative to the prior art range). *See In re Peterson*, 315 F.3d 1325, 1329–30 (Fed. Cir. 2003); *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311 (Fed. Cir. 2006). As we explain above, however, Appellant’s evidence of unexpected results are not commensurate in scope with the claims, including claim 27. Accordingly, we also affirm the Examiner’s rejection of claim 27 under 35 U.S.C. § 103(a) over the combination of Bigorra Llosas and König.

Rejection 4 – Obviousness over Bigorra Llosas, König, and Borbely

Claim 25 recites the cosmetic preparation of claim 22 “further comprising alpha-hydroxycarboxylic acids [“AHA”] and beta-hydroxycarboxylic acids [“BHA”], and the pH of the preparation is from 4 to 5.5.” Br. 23 (Claims App’x). The Examiner finds Bigorra Llosas teaches that its composition may comprise an additive to adjust the pH, and may comprise a hydroxycarboxylic acid, such as citric acid (an AHA). Final Act. 7 (citing Bigorra Llosas ¶¶ 112, 128). As is relevant to this appeal, the Examiner acknowledges that Bigorra Llosas does not expressly disclose a pH within the range recited in the claim. *Id.* The Examiner concludes that it would have been obvious to an ordinarily skilled artisan to

vary the pH to arrive at an amount within the claimed range based on Bigorra Llosas's teaching that one can add a pH adjuster to the composition and "because it is not inventive to discover optimum or workable ranges by routine experimentation." *Id.* at 8 (quoting *In re Aller*, 220 F.2d 454, 456 (CCPA 1955)).

Appellant argues that Bigorra Llosas does not teach or suggest that any cosmetic composition comprising a polyurethane of formula (I) that discloses a pH. Br. 16. Appellant further contends that the Examiner does not identify any composition that Bigorra Llosas or Borbely teaches that includes both AHA and BHA and has a pH from 4 to 5.5. *Id.* at 17.

Appellant's arguments do not persuade us of error in the Examiner's rejection. The Examiner's rejection need not point to an express teaching of the recited pH values. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) ("[T]he [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."). Here, Bigorra Llosas expressly discloses using a pH adjuster. Bigorra Llosas ¶ 128. Thus, Bigorra Llosas teaches that pH is a variable that may be adjusted to achieve a suitable result. Although Bigorra Llosas does not disclose any particular pH value, we agree with the Examiner that it would have been within the level of skill of an ordinary artisan and routine to obtain pH values providing optimal performance for a particular cosmetic composition. Accordingly, we affirm the Examiner's rejection of claim 25 under 35 U.S.C. § 103(a) over the combination of Bigorra Llosas, König, and Borbely.

Appeal 2017-010300
Application 12/991,009

DECISION/ORDER

The Examiner's rejections of claims 1, 4–11, 16, 19–23, 25–27, 29, and 30 under 35 U.S.C. § 103(a) are affirmed.

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