

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DR. SQUATCH, LLC,
Petitioner,

v.

THE PROCTER & GAMBLE COMPANY,
Patent Owner.

IPR2024-01174
Patent 11,497,706 B2

Before JOHN G. NEW, SHERIDAN K. SNEDDEN, and
SUSAN L. C. MITCHELL, *Administrative Patent Judges*.

MITCHELL, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Dr. Squatch, LLC (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–8 and 10–23 of U.S. Patent No. 11,497,706 B2 (Ex. 1001, “the ’706 patent”). Petition (“Pet.”), Paper 1. The Procter & Gamble Company (“Patent Owner”) filed a Preliminary Response identifying itself as the owner of the ’706 patent. Preliminary Response (“Prelim. Resp.”), Paper 8. On November 15, 2024, we issued an Order granting Petitioner’s request for additional briefing regarding whether we should exercise our discretion to deny the Petition under §325(d). Paper 9. In response to our Order, Petitioner filed a Reply to the Patent Owner Preliminary Response (Paper 10, “Reply”), and Patent Owner filed a corresponding Sur-reply (Paper 11, “Sur-reply”).

To institute an *inter partes* review, we must determine that the information presented in the Petition shows “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). The Supreme Court has held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). After considering the information presented by the parties, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one of claims 1–8 and 10–23 of the ’706 patent is unpatentable.

B. Real Parties-in-Interest

Petitioner identifies Dr. Squatch, LLC, as its real party-in-interest.

Pet. 1. Patent Owner identifies The Procter & Gamble Company as its real party-in-interest. Paper 5, 1.

C. Related Matters

The parties indicate that the '703 patent is involved in *The Procter & Gamble Company v. Dr. Squatch LLC*, Case No. 2-24-cv-04711 (C.D. Cal.), filed November 29, 2022. Pet. 1; Paper 5, 1. Petitioner has also filed petitions for *inter partes* review of the following patents: IPR2024-01104 challenging U.S. Patent No. 11,540,999; IPR2024-01105 challenging U.S. Patent No. 10,966,915; and IPR2024-01173 challenging U.S. Patent No. 10,905,647. Paper 5, 1.

D. The '706 Patent (Ex. 1001)

The '706 patent is titled “Antiperspirant and Deodorant Compositions.” Ex. 1001, code (54). The '706 patent is directed to antiperspirant and deodorant compositions and methods of making the compositions. *Id.* at 1:16–17. More specifically, the '706 patent is directed to formulating, in response to consumer demands, an aluminum-free, natural fragrance deodorant that provides low irritation, while maintaining sufficient odor protection. *Id.* at 1:42–44.

The '706 patent explains that

[c]onsumers are also seeking more natural products complete with fragrances that are mostly natural or essential oil based. They are further seeking products with lower irritation than they have experienced with baking soda based products. The challenge with formulating with the natural and essential oil fragrances is that they can be less stable in the presence of heat and extreme pH (either high or low). And products formulated

with baking soda, which has a relatively high pH and high water solubility, can increase irritation, even for consumers with moderate sweat rates. Highly water soluble alkaline powders contribute negatively towards natural or essential oil stability as well, especially in hot process[es] needed to melt waxes. And high water soluble powders can also lead to gritty product, as the water soluble powders can agglomerate when exposed to moisture released from powders during the hot batch process.

Id. at 1:26–41.

The '706 patent further states that the

inventors of the present invention have found, surprisingly, that the combination of piroctone olamine and other antimicrobials can provide significant antimicrobial activity against two of the most common underarm odor bacteria *C. mucofaciens* and *S. epidermidis*, which results in consumer odor protection on par or greater than some of the commonly used commercial deodorants available today.

Ex. 1001, 1:49–56; *see id.* at 12:21–31 (describing regulatory problems with using a sufficient amount of only one antimicrobial). To maintain the efficacy of piroctone olamine in the presence of iron and other impurities, the '706 patent states that combining chelators and piroctone olamine in an anhydrous formulation or in particular ratios “can provide significantly higher levels of anti-fungal activity than either material alone.” *Id.* at 1:57–64, 7:48–55 (stating a chelator can reduce the amount of piroctone olamine bonding with the iron impurity).

The '706 patent also observes that antimicrobials may be able to reduce microbes on the skin, but not affect microbes within hair follicles that may contribute to malodor. Ex. 1001, 1:65–2:1. To solve this problem, “[t]he inventors of the present invention have found that piroctone olamine and other antimicrobial powders, if used at a size that can fit into a hair follicle, can deliver surprisingly superior antimicrobial activity.” *Id.* at

1:65–2:4. “It is believed that antimicrobial powders may provide a better deposition and have more longevity on the skin than antimicrobials delivered in a different form.” *Id.* at 10:58–60; *see id.* at 10:65–11:18.

According to the ’706 patent, “a deodorant stick having at least about 25% of a liquid triglyceride and structurants that have a melting point of greater than about 50° C. can result in a deodorant stick with a hardness from about 70 mm*10 to about 140 mm*10.” *Id.* at 14:48–51. The ’706 patent asserts that “[s]uch a deodorant stick is able to comprise consumer-perceived natural ingredients, while offering a pleasant consumer experience in terms of its hardness.” *Id.* at 14:51–54.

The ’706 patent describes that the antiperspirant/deodorant compositions “can contain a primary structurant, an antiperspirant active, a perfume, and additional chassis ingredient(s) . . . in the form of a solid stick.” *Id.* at 13:64–14:31. The ’706 patent defines a “solid structurant” as “any material known or otherwise effective in providing suspending, gelling, viscosifying, solidifying, and/or thickening properties to the composition or which otherwise provide structure to the final product form.” *Id.* at 15:32–36. The ’706 patent describes a deodorant stick as

comprising at least 25% of a liquid triglyceride; a primary antimicrobial having a water solubility of at most about 90 g/L at 25° C; a fragrance composition comprising at least about 50% natural oils, essential oils, or a combination thereof; and a primary structurant with a melting point of at least 50° C.; said deodorant stick being free of an aluminum salt; and said deodorant stick having a hardness from about 70 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

Id. at 2:12–21.

E. Relevant Prosecution History

The '706 patent's filing date as application No. 17/124,565 ("the '565 application") is December 17, 2020. Ex. 1001, codes (21), (22). The '565 application is listed as a continuation of U.S. Patent Application No. 16/021,931 that issued as U.S. Patent No. 10,905,647 B2, which claims priority to provisional applications No. 62/647,111, filed March 23, 2018, and No. 62/527,180, filed June 30, 2017. *Id.* at codes (60), (63), 1:7–11.

On March 1, 2022, the Examiner rejected claims on the basis of nonstatutory double patenting. Ex. 1033, 1–7; *see* Ex. 2001. In response, Applicant filed a terminal disclaimer resulting in allowance. Ex. 1033, 8–21.

F. The Challenged Claims

Petitioner challenges claims 1–8 and 10–23. Pet. 1. Claims 1, 16, and 20 are independent. Claim 1 is representative and is reproduced below:

1. A deodorant stick comprising:
 - at least 25% by weight liquid triglyceride and a primary antimicrobial;
 - said deodorant stick being free of an aluminum salt.

Ex. 1001, 26:57–60.

G. Evidence

Petitioner relies upon information that includes the following.

Ex. 1003, Lesniak et al., US 11,433,018 B2, issued September 6, 2022 ("Lesniak").

Ex. 1004, Phinney et al., US 9,314,412 B2, issued April 19, 2016 ("Phinney").

Ex. 1005, John Henderson Lamb, M.D., *Sodium Bicarbonate: An Excellent Deodorant*, THE JOURNAL OF INVESTIGATIVE DERMATOLOGY 7(3) 131–33 (1946) (“Lamb”).

Ex. 1006, Bianchi et al., US 6,048,518 B2, issued April 11, 2000 (“Bianchi ’518”).

Ex. 1007, Wayback Machine archives, captured May 26, 2016, November 23, 2016, and November 1, 2015 respectively for: <https://www.nativecos.com>, <https://www.nativecos.com/product/deodorant/>, and <https://www.nativecos.com> (“Native”).

Ex. 1008, Bianchi, US 2007/0166254 A1, published July 19, 2007 (“Bianchi ’254”).

Ex. 1009, Wayback Machine archive, captured January 26, 2017, for <http://soapdelinews.com/2016/11/easy-homemade-deodorantrecipe.html> (“Easy Homemade”).

Ex. 1056, Sturgis et al., US 2019/0000734 A1, published Jan. 3, 2019 (“Sturgis”).

Ex. 1057, Anconi et al., US 2016/0089321 A1, published March 31, 2016 (“Anconi”).

Ex. 1058, Mihaela Stoia, et al., *Selected Evidence-Based Health Benefits of Topically Applied Sunflower Oil*, 10 APPLIED SCI. REPS. 45–49 (2015) (“Stoia”).

Ex. 1059, Declaration of Vinod Stephen Pinto (“Squatch”).

Petitioner also relies on the Declaration of Bozena B. Michniak-Kohn, Ph.D. (Ex. 1002) to support its contentions.

H. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–8 and 10–23 would have been unpatentable on the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
I	1, 2, 5–7, 10–13, 15	102 or 103	Lesniak
II	3, 14	103	Lesniak, Phinney
III	4	103	Lesniak, Phinney, Lamb
IV	8	103	Lesniak, Bianchi ’518
V	16–23	103	Lesniak, Phinney, Bianchi ’254, and Anconi
VI	1, 5, 7, 8, 10–12, 15	103	Native, Bianchi ’254
VII	2–4, 6, 13, 14	103	Native, Bianchi ’254, Easy Homemade
VIII	16–23	103	Native, Bianchi ’254, Easy Homemade, Anconi, and Stoia
IX	16–23	103	Squatch, Sturgis

I. Claim Construction

The challenged claims “should be read in light of the Specification, as it would be interpreted by one of ordinary skill in the art.” *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010). Thus, we generally give claim terms their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning ‘is the meaning that the term would have to a person of ordinary skill in the art in question.’”); *see also* 37 C.F.R. § 42.100(b) (stating that claims are construed in IPRs according to the same standard as used in federal court).

Petitioner does not argue that any claim terms require express construction. *See generally* Pet. Patent Owner asserts that “reasons exist for

¹ Because the ’706 patent has an earliest possible effective filing date after March 16, 2013, it is subject to the post-grant review provisions of the America Invents Act. *See* The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (“AIA”) § (3)(n)(1)(A) (2011).

denial of institution that do not require addressing the construction of claim terms at this time.” Prelim. Resp. 7.

We determine that no express construction of any claim term is necessary to determine whether to institute *inter partes* review. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

J. Level of Ordinary Skill in the Art

Petitioner proposes that a person of ordinary skill in the art (“POSA” or “POSITA”) at the time of the invention “would have (1) at least a B.S. or equivalent degree; and (2) at least two years of experience in cosmetics formulations.” Pet. 17 (citing Ex. 1002 ¶¶ 27–29). Patent Owner does not dispute Petitioner’s proposal about the POSA’s qualifications at this stage of the proceeding. Prelim. Resp. 7.

For this Decision, we adopt and apply Petitioner’s proposal above, which does not appear to be inconsistent with the level of skill reflected in the asserted prior art.

II. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 325(D)

Patent Owner argues that the Petition should be denied under 35 U.S.C. § 325(d). Prelim. Resp. 11–25. In determining whether to deny institution under § 325(d), we use

the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of [the] first part of the framework is satisfied, whether

the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 8 (PTAB Feb. 13, 2020) (precedential).

The *Becton, Dickinson* factors provide useful insight into how to apply the *Advanced Bionics* framework under 35 U.S.C. § 325(d). *Id.* at 9 (referencing *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8, 17–18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph)).

Under § 325(d), the art and arguments must have been previously presented to the Office during proceedings, such as examination of the underlying patent application, pertaining to the challenged patent. *Advanced Bionics*, Paper 6, 7. Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (“IDS”), in the prosecution history of the challenged patent. *Id.* at 7–8.

A. Whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office

Under the first part of the *Advanced Bionics* framework, we consider “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.” *Id.* at 8. We evaluate *Becton, Dickinson* factors (a), (b), and (d) to determine whether Petitioner has demonstrated that the same or substantially the same art or arguments were not presented to the Office. *Id.* at 10. Those factors are:

(a) the similarities and material differences between the asserted art and the prior art involved during examination;

- (b) the cumulative nature of the asserted art and the prior art evaluated during examination; and
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art.

Becton, Dickinson, Paper 8 at 17–18.

Here, Petitioner concedes that a version of Lesniak, Phinney, and Sturgis were of record during the prosecution of the '706 Patent, but Petitioner contends that Lesniak was “not applied by the examiner or otherwise addressed during prosecution of the '706 Patent. All other applied references were not considered during prosecution.” Pet. 6, 10; Reply 2.

Petitioner also asserts that in the prosecution of a related application, US Patent Application No. 17/961,089 (“the '089 Application”), which is from a subsequent application in the patent family of the '706 patent, the same Examiner recognized the applicability of Lesniak, which she had allegedly erroneously failed to do during prosecution of the '706 patent. Pet. 10.

Specifically, Petitioner states:

[I]n an Office Action dated July 3, 2023, the examiner rejected claims of the '089 Application over Lesniak on both anticipation and obviousness grounds. Ex. 1034, 5–15. In doing so, the examiner concluded that Lesniak disclosed each feature of independent claim 1 of the '706 Patent. The examiner also found Lesniak disclosed other features found in the dependent claims of the '706 Patent, such as the deodorant stick having an antimicrobial with a water solubility below a threshold (claims 13 and 14 of the '706 Patent), and the deodorant stick composition not containing baking soda (claim 6 of the '706 Patent) or synthetic fragrance (claim 7 of the '706 Patent). *Id.*

Pet. 10–11. Petitioner also concluded that despite amendments to the claims in the '089 Application, including a hardness limitation with a range that is

identical to the claimed range in the '706 patent, the Examiner maintained the rejection of the claims in view of Lesniak. Pet. 11. Petitioner also asserts that the Examiner found the substitution of magnesium hydroxide for Lesniak's zinc oxide to be obvious. *Id.*

Patent Owner responds that Lesniak and Phinney, which Petitioner asserts in Grounds I–V, “were cited on the face of the '706 patent and were evaluated by the Office during prosecution.” Prelim. Resp. 13. Patent owner further asserts that “[d]uring prosecution of the '706 patent, Lesniak and Phinney appear on Information Disclosure Statements signed by the Examiner where she attests that ‘ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH.’ Lesniak and Phinney were thus previously presented to the Examiner, and Petitioner has ‘the added burden of overcoming the deference’ owed to the Examiner’s consideration of those references.” *Id.* at 15.

Petitioner responds:

Moreover, [Patent Owner] does not attempt to show that prior art combined with Lesniak and Phinney in Grounds 3–5 was considered, much less applied, during prosecution. Nor does [Patent Owner] make any § 325(d) showing whatsoever with respect to Grounds 6–9, which do not rely on Lesniak. Institution on any of those Grounds requires instituting on all Grounds, moot[ing] [Patent Owner’s] § 325(d) arguments.

Reply 3.

Patent Owner replies that the Examiner got it right during the prosecution of the '706 patent—Lesniak is about sunscreen and diaper cream, *not deodorant*—and was appropriately not applied to challenge the claims in the '706 patent. Sur-Reply 2. Patent Owner further asserts:

[T]he Lesniak reference was in front of the Examiner for years during prosecution of many related applications. In fact

the same Examiner expressly distinguished Lesniak during prosecution of the parent of the '706 patent—the '647 patent—which is being challenged by Petitioner in a co-pending IPR petition in Case No. IPR2024-01173. During the prosecution, the Examiner found that the '647 claims were not anticipated or obvious over Lesniak. (Ex. 2008 at 7.) Specifically, after Applicant submitted a post-allowance IDS identifying the reference, the Examiner reviewed it and issued another Notice of Allowance, explaining that “[t]he claims are distinguishable from Lesniak... because Lesniak is directed towards a sunscreen composition that requires the presence of the sunscreen agent Zinc Oxide, whereas the instant claims are drawn to a solid deodorant composition that require the presence of an antimicrobial agent.” (Id.)

Sur-Reply 2.

We determine that the first part of the *Advanced Bionics* framework is satisfied. Although the Examiner did not specifically apply Lesniak, Phinney, or Sturgis to the grounds of rejection for '706 patent application, the Examiner considered these references as evidenced on the face of the '706 patent indicating these were cited references, as well as by the Information Disclosure Statement that listed these three references. *See* Ex. 1001, code (56); Ex. 2001, 287, 297, 304. Various combinations of these references are asserted in six of the nine grounds before us in this proceeding. Therefore, we determine that same or substantially the same art previously was presented to the Office.

We turn now to whether Petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims when it considered Lesniak, Phinney, and Sturgis.

B. Whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims

Under the second part of the *Advanced Bionics* framework, we consider “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics*, Paper 6, 8. “An example of a material error may include misapprehending or overlooking specific teachings of the relevant prior art where those teachings impact patentability of the challenged claims.” *Id.* at 8 n.9. We evaluate *Becton, Dickinson* factors (c), (e), and (f) to determine whether Petitioner has demonstrated material error. *Id.* at 10. Those factors are:

(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; . . . (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18.

As noted above, Petitioner asserts that the Examiner recognized the applicability of Lesniak to the claims of the ’706 in a subsequent prosecution of the ’089 Application in the patent family by recognizing that “Lesniak disclosed each feature of independent claim 1 of the ’706 patent.” *See* Pet. 11 (citing Ex. 1034, 5–15). Petitioner also asserts that the Examiner further found that many of the features in the dependent claims were taught by Lesniak. *Id.* Even with the addition of limitations, such as the hardness range also set forth in the claims of the ’706 patent, the Examiner maintained the rejection over Lesniak, and “expressly found the substitution

of magnesium hydroxide for Lesniak's zinc oxide obvious." *Id.* at 11 (citing Ex. 1034, 30).

Patent Owner responds:

The Petition does not explicitly address any material error the Examiner allegedly committed. Instead, the Petition provides only superficial statements that Lesniak and Phinney were 'not applied . . . or otherwise addressed during prosecution. This is not enough.

Prelim. Resp. 17.

Petitioner replies that the Examiner erred in failing to apply Lesniak to the claims of the '706 patent as evidenced by later prosecution of the '089 Application. Reply 3–5. Petitioner asserts that pending claim 1 of the '089 Application contained both limitations of claim 1 of the '706 patent—at least about 25% by weight liquid triglyceride and a primary antimicrobial, as well as said deodorant stick being free of an aluminum salt—and the Examiner twice rejected this claim of the '089 patent over Lesniak. *Id.* at 4 (citing Ex. 1077, 11).

Petitioner also asserts that the Examiner rejected Patent Owner's exact argument asserted here that Lesniak is distinguishable because it "is about sunscreen and diaper cream, *not deodorant*." Reply 4 (citing Prelim. Resp. 16). Petitioner states:

[T]he Examiner alluded to Lesniak's express disclosure that its compositions can be used as antiperspirants. Ex. 1077, 7–8. And the Examiner cited the '089 application's own disclosure that antiperspirants are equivalent to deodorants. *Id.* The Examiner further dismissed [Patent Owner] theory that Lesniak's compositions could not be antiperspirants because they lack aluminum (allegedly required by FDA regulations). As the Examiner explained, the '089 application itself discloses antiperspirant actives other than aluminum, such as zirconium.

Reply 5.

Patent Owner responds that the Examiner made no material error in expressly distinguishing Lesniak during prosecution of the '647 patent challenged in IPR2024-01173, a parent of the '706 patent, stating the claims were distinguishable from Lesniak “*because Lesniak is directed towards a sunscreen composition that requires the presence of the sunscreen agent Zinc Oxide, whereas the instant claims are drawn to a solid deodorant composition that require the present of an antimicrobial agent.*” Sur-Reply at 2 (emphasis in original) (citing Ex. 2008, 7).

C. Discussion

We are persuaded on the record before us that Petitioner has shown sufficiently that the Examiner erred in failing to apply Lesniak to the claims of the '706 patent. Review of the prosecution history of the '089 Application is instruction. In that prosecution history, the Examiner recognized that Lesniak teaches at least all of the limitations of the deodorant stick of claim 1—at least about 25% by weight liquid triglyceride and a primary antimicrobial; said deodorant stick being free of an aluminum salt. *See* Ex. 1077, 2, 5.

In response to the Examiner’s rejection of pending claims involving Lesniak, Patent Owner argued:

First, Lesniak does not disclose deodorant compositions. Lesniak focuses on different types of compositions, such as sunscreens and diaper creams, as evidence by its use of zinc oxide in every inventive example. Zinc oxide is generally understood by one of ordinary skill in the art to be used in sunscreens and diaper rash compositions. And while Lesniak mentions antiperspirants in passing, one of ordinary skill in the art would understand that to be considered an antiperspirant in the US, an aluminum salt must be used – all of the 18 active ingredients allowed by the FDA to achieve sweat reduction are a form of aluminum salt. The present invention explicitly states

that it is free of an aluminum salt. Thus, even if Lesniak can be read to disclose an antiperspirant (which it does not enable), it does not read on or disclose the deodorants of the present invention, which exclude the very ingredient that would be required for Lesniak to disclose an antiperspirant.

Ex. 1077, 14–15.

In rejecting these arguments, the Examiner responded with what Lesniak teaches. *See Id.* at 4–5. The Examiner found that Lesniak teaches a non-greasy, anhydrous, personal care composition in stick form with 20 weight percent zinc oxide, 53 weight percent caprylic/capric triglyceride in paragraph 39, and natural fragrances. *Id.* at 4. The Examiner also notes that zinc oxide is an antimicrobial agent having deodorant properties, and the composition does not teach that it contains an aluminum salt. *Id.*

The Examiner further rejects Patent Owner’s arguments concerning the focus of Lesniak on sunscreens and diaper creams. *See Ex. 1077*, 7–8. The Examiner notes that “the instant specification discloses antiperspirants and/or deodorants on page 18 discloses them to equivalent and page 22 discloses additional antiperspirants include zirconium salts,” and finds “the standards for obviousness are distinct from FDA regulatory requirements.” *Id.* at 8.

We are persuaded here based on the teachings of Lesniak and the Examiner’s findings regarding Lesniak in the prosecution history of the ’089 Application that Petitioner has shown sufficiently that Lesniak teaches the limitations of at least claim 1 of the ’706 patent. *See Ex. 1002 ¶¶ 56–66* (explaining how Lesniak maps to claim 1). Hence, we are persuaded that Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art in allowing at least claim 1 of the ’706 patent over Lesniak.

Accordingly, we determine that Petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims.

D. Conclusion

For the reasons discussed above, we decline to exercise our discretion under § 325(d) to deny the Petition.

III. ANALYSIS

A. Introduction

“In an *inter partes* review, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). Moreover, a petitioner should not “place the burden on [the Board] to sift through information presented by the Petitioners, determine where each element [of the challenged claims] is found in [the cited references], and identify any differences between the claimed subject matter and the teachings of [the cited references].” *Google Inc. v. EveryMD.com LLC*, IPR2014-00347, Paper 9 at 25 (PTAB May 22, 2014).

To show anticipation under § 102, each and every claim element, arranged as in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359 (Fed. Cir. 2008). The prior art need not, however, use the same words as the claims in order to find

anticipation. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009). It is also permissible to take into account not only the literal teachings of the prior art reference, but also the inferences an ordinarily skilled person would draw from the reference. *Eli Lilly and Co. v. Los Angeles Biomedical Res. Inst. at Harbor-UCLA Med. Ctr.*, 849 F.3d 1073, 1074–75 (Fed. Cir. 2017); *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). A reference may also anticipate a claim even if it does not expressly teach all the limitations arranged or combined as in the claim, “if a person of skill in the art, reading the reference, would ‘at once envisage’ the claimed arrangement or combination.” *Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1068 (Fed. Cir. 2017) (quoting *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015)).

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness, if any. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In analyzing the obviousness of a combination of prior art elements, it can be important to identify a reason that would have prompted one of skill in the art “to combine . . . known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418. A precise teaching directed to the

specific subject matter of a challenged claim is not necessary to establish obviousness. *Id.* Rather, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420.

Accordingly, a party that petitions the Board for a determination of unpatentability based on obviousness must show that “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (internal quotation marks omitted). “Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant’s disclosure.” *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988).

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.” *KSR*, 550 U.S. at 418; *see In re Translogic Tech, Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). In *KSR*, the Supreme Court also stated that an invention may be found obvious if trying a course of conduct would have been obvious to a POSITA:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

550 U.S. at 421. “KSR affirmed the logical inverse of this statement by stating that § 103 bars patentability unless ‘the improvement is more than the predictable use of prior art elements according to their established functions.’” *In re Kubin*, 561 F.3d 1351, 1359–60 (Fed. Cir. 2009) (citing *KSR*, 550 U.S. at 417).

We analyze the asserted grounds of unpatentability in accordance with these principles to determine whether Petitioner has met its burden to establish a reasonable likelihood of success at trial.

B. Summary of the Cited Prior Art

1. Lesniak (Ex. 1003)

Lesniak is titled “NON-GREASY PERSONAL CARE COMPOSITIONS.” Ex. 1003, code (54). Lesniak provides an anhydrous personal care composition, comprising

(a) at least one ester, wherein said at least one ester is selected from one or more of the following groups: (i) triglycerides, (ii) diglycerides, (iii) monoglycerides, (iv) monoesters of dials, and (v) diesters of dials, and wherein a total concentration of said at least one ester is 45 to 60 weight %, based on the total weight of the composition; (b) a first wax having a melting point of 35° C. to 72° C. present in an amount of 5 to 25 weight %, based on the total weight of the composition; (c) a second wax having a melting point of 73° C. to 90° C. present in an amount of 0.5 to 15 weight % based on the total weight of the composition; (d) at least one plant oil having a saponification value of 150 to 275 mg KOH/g, wherein a total concentration of said at least one plant oil is from 5 to 35 weight %, based on the total weight of the composition.

Id. at 5:32–48. Lesniak describes that “[o]ptionally, the at least one ester is a combination of caprylic triglyceride and capric triglyceride” in ranges from 50–60 weight %, based on the total weight of the composition. *Id.* at 2:38–

39, 3:42–44. “Optionally, the composition further comprises zinc oxide . . . present in a concentration of 10 to 30 weight %.” *Id.*, 3:39–42. Lesniak describes that the composition may be in the form of a stick. *Id.* at 4:22. According to Lesniak, the compositions possess “good micro-robustness, . . . reduced greasiness and an improved after-feel (such as reduced tackiness and drag) on the skin as compared to other anhydrous compositions” and “are also physically stable at high and low temperatures.” *Id.* at 5:50–54.

Lesniak discloses a desire to “to formulate such compositions from all-natural ingredients (i.e. ‘100% natural’ compositions).” *Id.* at 5:29–31. Lesniak discloses that “the term ‘natural compositions’ indicates that the composition is formulated from ingredients which are extracted from the earth or sea, derived from plants, or synthesized by other organisms.” *Id.*, 4:61–64. Lesniak discloses that the composition may comprise “essential oils which may be used as natural fragrances.” *Id.*, 8:38.

2. *Phinney (Ex. 1004)*

Phinney is titled “DEODORANT FORMULATION.” Ex. 1004, code (54). Phinney relates to a deodorant “formulation and preparation thereof with natural ingredients in the absence of heavy metal complexes and/or petroleum based or related compounds.” *Id.* at 1:7–9. Phinney discloses that “a mixture of the hydroxides of zinc and magnesium could provide long lasting protection against odour due to perspiration . . . and are dispersible in aerosols, moisturizing creams, sticks, sprays and roll-on type applicators.” *Id.* at 1:17–22.

Phinney explains that zinc and aluminum oxide are “very unreactive against perspiration odour due to insolubility and low hydrolysis rate.” *Id.* at 2:35–36. According to Phinney, “magnesium hydroxide, . . . has low solubility and therefore does not ‘wash away’ under heavy perspiration” and

thus “provides 16–20 hour protection and more for a broad cross section of people.” *Id.* at 5:47–51. Phinney discloses an embodiment of a specific formulation prepared as a solid stick that “includes magnesium oxide in an amount of between 1% and 2.5% by weight and zinc oxide in an amount of between 0.5% and 1.5% by weight.” *Id.* at 6:32–34, 6:12, 8:46–57 (claim 1).

3. *Lamb (Ex. 1005)*

Lamb is an article titled “SODIUMBICARBONATE: AN EXCELLENT DEODORANT” that was published in *The Journal of Investigative Dermatology*. Ex. 1005, 131. Lamb describes a study that evaluated the effectiveness of baking soda as an underarm deodorant in 90 patients. Ex. 1005, 131–33. Lamb hypothesizes that the perspiration’s free fatty acids, which possess a disagreeable odor, form a less malodorous sodium salt in the presence of sodium bicarbonate. *Id.*, 133. Based on the results of the study, Lamb concludes that “bicarbonate of soda is a valuable underarm deodorant for common daily usage.” *Id.* Lamb observed that “[n]o furunculosis,” or boils, “developed in over 90 cases which have used bicarbonate of soda over periods of from four weeks to a year’s duration.” *Id.*

4. *Bianchi ’518 (Ex. 1006)*

Bianchi ’518 is titled “LOW RESIDUE SOLID ANTIPERSPIRANT.” Ex. 1006, code (54). Bianchi ’518 “relates to antiperspirant sticks, substantially free of water and long chain fatty alcohols, which provide the user with excellent antiperspirant efficacy, reduced residue when the composition is first applied to the skin, reduced

residue after dry down, high temperature stability, and excellent cosmetics and aesthetics. *Id.* at 1:8–13.

Bianchi ’518 discloses that the antiperspirant composition possesses a specification of “Penetration-ASTM D-1321@ 100/77/5 10–16.” *Id.* at 2:57–58. Bianchi ’518 explains that

[o]ne important physical parameter affecting consumer acceptance of suspensoid antiperspirant sticks of the invention is hardness as measured by needle penetration. Typical compositions of the invention will range in hardness from about 7.0 to about 14.0 mm as shown by the above mentioned needle penetration test. Products outside this range will typically generate low consumer acceptance ratings.

Id. at 6:23–29.

5. *Native (Ex. 1007)*

Native is a printed publication from a website advertising a deodorant product sold in 2016. Ex. 1007, 5–8, 11–12, 14–18. Native is advertised as a “Deodorant That Isn’t A Chemistry Experiment,” which contains “NATURAL INGREDIENTS” and is “ALUMINUM-FREE.” *Id.* at 5. Native lists each ingredient for the Native deodorant stick product, including, *inter alia*, shea butter, beeswax, baking soda, and stearyl alcohol. *Id.* at 6, 11.

The picture on page 5 of Native, reproduced below, illustrates a deodorant product. *Id.* at 5.



The picture of the Native deodorant product, reproduced above, illustrates the deodorant stick in a supine position with the cap removed. *Id.*

6. *Bianchi '254 (Ex. 1008)*

Bianchi '254 is titled “ANTIPERSPIRANT STICK COMPOSITIONS.” Ex. 1008, code (54). Bianchi '254 discloses “antiperspirant stick compositions comprising specified amounts of antiperspirant active; carrier oil comprising volatile silicone oil and non-volatile masking oil; structurant comprising fatty alcohol and cosmetically acceptable wax having a melting point of 75 to 95° C., a portion of wax comprises polyethylene in specified amounts.” *Id.* at code (57). Bianchi '254 addresses

a need for non-whitening fatty alcohol-containing antiperspirant sticks, particularly sticks containing fatty alcohol at levels of 12% by weight or above, more particularly, 15 wt % or above. Also desired are non-whitening fatty alcohol-containing sticks that have desirable antiperspirant payouts, while providing a ‘clean’, non-sticky feel. There also remains a need for a non-whitening fatty-alcohol containing stick that provides desirable payout as well as being thermally stable and resistant to dome collapse at temperatures of 50° C.

Id. ¶ 10. Table 5 of Bianchi '254 provides eight different formulations of antiperspirant sticks with each of their respective components and amounts listed. *Id.* ¶ 131.

Bianchi '254 explains that the “[t]he hardness of the sticks can be measured in a needle penetration test.” *Id.* ¶ 26. Bianchi '254 describes the method for measuring stick hardness using a “brass/steel tapered needle (DIN 51-579)” depth on six locations of the stick, “with the hardness values being reported as an average of the six measurements.” *Id.* ¶ 117.

7. *Easy Homemade (Ex. 1009)*

Easy Homemade is a printed publication of a blog post titled “Easy Homemade Deodorant Recipe with just 3-Ingredients.” Ex. 1009, 5. Easy Homemade describes the blogger’s first experience with natural deodorant, but falling “victim to the burning fiery rash you get after using deodorant with baking soda.” *Id.* at 6. Easy Homemade describes that the blogger discovered that she “could swap the baking soda with magnesium hydroxide - basically the same thing as Milk of Magnesia - and it worked just as well.” *Id.* The Easy Homemade blogger describes melting “two natural deodorants” that are aluminum-free, and making a “[h]uge difference” in each deodorants’ performance by adding “arrowroot powder and magnesium hydroxide to them.” *Id.* at 7. Easy Homemade provides a deodorant recipe and lists “2.15 oz. natural aluminum free deodorant (base) of choice[,] 1 oz. arrowroot powder[,] .5 oz. magnesium hydroxide[,]” to which one may “[a]dd essential oils if desired.” *Id.* at 7–8.

C. *The Lesniak Grounds (Grounds I–V)*

1. *Petitioner’s Contentions*

Petitioner asserts that claims 1, 2, 5–7, 10–13 and 15 are either anticipated by or would have been obvious over Lesniak; that claims 3 and 14 would have been obvious over Lesniak and Phinney; that claim 4 would have been obvious over Lesniak, Phinney, and Lamb; that claims 8 would

have been obvious over Lesniak and Bianchi '518; and that claims 16–23 would have been obvious over Lesniak, Phinney, Bianchi '254, and Anconi. Pet. 5. Petitioner asserts that Lesniak teaches the majority of the limitations of these claims, *see* Pet. 18–23, with Phinney teaching magnesium hydroxide as an effective deodorant with enhanced effectiveness when used with zinc oxide, *see* Pet. 23, with Lamb teaching baking soda as an effective antimicrobial in a deodorant stick, *see* Pet. 27, with Bianchi '518 teaching the claimed hardness range of 7.0 mm to about 14.0mm (equivalent to about 70 mm*10 to about 140 mm*10), as measured by penetration with an ASTM-D 1321 needle, *see* Pet. 30, and with Bianchi '254 teaching stearyl alcohol as a widely used structurant of particular interest for deodorants and Anconi teaching the use of triethyl citrate as an antimicrobial, *see* Pet. 33–34.

Petitioner provides detailed claim charts for each of these grounds explaining how each claim limitation is disclosed in the asserted references and how its assertions are supported by the testimony of Dr. Michniak-Kohn. *See* Pet. 18–23 (Ground I), 23–26 (Ground II), Pet. 27–29 (Ground III), Pet. 29–33 (Ground IV), Pet. 33–40; Ex. 1002 ¶¶ 56–134.

2. Patent Owner's Contentions

At this point in the proceeding, Patent Owner does not dispute Petitioner's characterization of or prior art status of Lesniak, Phinney, Lamb, Bianchi '518, Bianchi '254, Anconi, or the other references that Petitioner cites. *See generally* Prelim. Resp.

Patent Owner contends that persons of ordinary skill in the art would not have been motivated to make the combinations of art in Grounds II through V. *See* Prelim. Resp. 18–26. Notably, Patent Owner does not provide a response to Petitioner's Ground I except to request discretionary

denial under 35 U.S.C. § 325(d), which we have addressed. Prelim. Resp. 11–18; *see* Section II.

Specifically, Patent Owner contends that Petitioner fails to demonstrate there is a reasonable likelihood it will prevail on the merits of Grounds II through V allegedly because (1) the Petition fails to adequately explain why persons of ordinary skill in the art would have been motivated to make the asserted combinations of Lesniak, Phinney, Lamb, and Bianchi ’518, (2) the Petition fails to adequately explain how the combination meets the hardness and antimicrobial limitations of the challenged claims, and (3) how these changes would have affected the other properties of Lesniak that the Petitioner relies upon to teach all of the claims limitations. Prelim. Resp. 19.

Patent Owner asserts that a POSA would not have been motivated to combine Lesniak with any of the references of the combinations in Grounds II through V because Lesniak “is actually directed to sunscreen and diaper creams, *not deodorant sticks*. Lesniak does not describe any deodorant compositions, and only mentions antiperspirants in passing, without connection to the subject matter of the reference.” Prelim. Resp. 20 (citing Ex. 1003, 4:25–26, 8:64–65, 10:31, 14:3–6; Tables 2–6; Claims 1, 12, 14, 19).

Patent Owner asserts that this distinction of Lesniak is especially damaging to Petitioner’s combination of Lesniak’s zinc oxide with Phinney’s magnesium hydroxide in Ground II and V. Prelim. Resp. 20. Patent Owner contends that Lesniak and Phinney describe “entirely different uses for their metal oxides/hydroxides,” and a POSA would not have a reason to combine these disparate teachings. Prelim. Resp. 21. In fact, Patent Owner asserts, Lesniak has optimized amounts of zinc oxide to

reduce an undesired “whitening” effect making it less likely that a POSA would introduce Phinney’s magnesium hydroxide into the optimized composition. *Id.* Patent Owner further asserts:

Lesniak’s zinc oxide is included in its sunscreen and diaper cream products as a protective barrier—*i. e.*, to protect the skin from sun and other irritants, and in the case of the diaper cream to help prevent diaper rash. . . . Lesniak does not discuss odor protection at all, let alone describe the use of zinc oxide for odor protection.

Prelim. Resp. 21 (citing Ex. 1003, claim 13; Ex. 2003; Ex. 2004).

As to Ground III, Patent Owner asserts that a POSA would not combine Lesniak and Phinney with Lamb’s teaching of using baking soda as an antimicrobial because the Petition asserts that baking soda in antiperspirant sticks could cause skin irritation and should be avoided.

Prelim. Resp. 22. Patent Owner concludes:

Petitioner makes no real effort to reconcile its pro-baking soda argument in Ground 3 with its anti-baking soda argument in Ground 6. Instead, Petitioner and its expert remarkably claim that a POSA would have both been motivated to *add* baking soda to the Lesniak-Phinney combination because it creates an “excellent” deodorant, yet *remove* baking soda in the Ground 7 combination because of the associated “skin irritation.” (*Id.* at 27–28, 50–51.) Both things cannot be true.

Prelim. Resp. 22–23.

Patent Owner also challenges whether a POSA would have a reasonable expectation of success in combining Lesniak with the hardness range in Bianchi ’518 in Ground IV. *Id.* at 22. Patent Owner asserts that Bianchi ’518’s disclosed hardness range is typical for its compositions, which include aluminum or mixed aluminum salts for its antiperspirant formulations forbidden by the challenged claims, and “does not disclose or otherwise suggest that it is typical for any and all antiperspirant

compositions in existence, regardless of the type and amount of ingredients used, to have a hardness within that range.” Prelim. Resp. 23. Patent Owner concludes that the Petition “fails to explain which parameters in Lesniak’s formula the POSA would have been motivated to change in order to achieve the hardness Bianchi ’518 desires, nor does it address how changes to hardness would have affected the other properties of Lesniak that Petitioner relies on to meet other claimed limitations.” *Id.* at 25.

3. Discussion

Having considered the parties’ positions and evidence of record, summarized above, we determine that the information presented in the Petition establishes that Petitioner has shown sufficiently a reasonable likelihood of succeeding with respect to at least claims 1, 3, 4, and 8 challenged in Grounds I through IV.²

We are persuaded, based on the current record, that persons of ordinary skill in the art would have been motivated to make the different combinations of Lesniak, Phinney, Lamb, Bianchi ’518, Bianchi ’254 and Anconi for Grounds I through IV to arrive at the deodorant stick of at least claims 1, 3, 4, and 8 with a reasonable expectation of success. Below, we discuss how Petitioner has shown a reasonable likelihood of success that the teachings of Lesniak for claim 1 and the various combinations of Grounds II through IV would render obvious claims 3, 4, and 8, representative claims for these grounds.

² Patent Owner does not address the combination set forth in Ground V, which adds the teachings of Bianchi ’254 and Anconi to the teachings of Lesniak and Phinney, except to challenge the combination of Lesniak and Phinney. We address Patent Owner’s challenge to the Lesniak/Phinney combination with our analysis of claim 3.

a) Claim 1 (Ground I)

Petitioner notes that Lesniak teaches natural anhydrous personal care compositions, including a deodorant or antiperspirant, which Lesniak seeks to make more palatable to consumers. Pet. 18 (citing Ex. 1003, 1:16–35, 4:22, 4:61–67, 5:5–32, 10:27, 10:32–33). As Petitioner asserts:

Lesniak explains that such compositions may comprise, e.g.:

- about 25 wt% of a liquid triglyceride, such as caprylic/capric triglyceride (id., 2:38-39, 9:45-46);
- about 8 to 19 wt% of a primary structurant, such as beeswax (id., 1:39-54, 2:5-7, 2:24-25); and
- at least one antimicrobial, such as zinc oxide (id., 3:39-4:21, 8:31-9:59).

The compositions described in Lesniak do not contain aluminum salts, baking soda, or synthetic fragrances. Id., 3:50-4:21, 8:37-42.

Pet. 18; Ex. 1002 ¶¶ 61–66. Petitioner also provides a detailed claim chart as to how Lesniak anticipates or renders obvious claim 1. *See* Pet. 19–20.

Patent Owner does not challenge Petitioner’s assertions as to how Lesniak teaches each of the limitations of claim 1. We find that the record here supports Petitioner’s assertions as to claim 1. Therefore, we determine that Petitioner has sufficiently demonstrated a reasonable likelihood of prevailing in showing claim 1 to be unpatentable over Lesniak.

b) Claim 3 (Ground II)

Petitioner asserts that a POSA would combine the teachings of Lesniak with Phinney’s teaching of magnesium hydroxide as an antimicrobial in a deodorant stick in addition to zinc oxide. Pet. 23–26. By combining these references of record in the manner proposed by the Petitioner, we are persuaded that those of ordinary skill in the art would have

been motivated to combine the teachings of Lesniak and Phinney to meet each limitation of claim 2. Patent Owner does not substantively challenge Petitioner's contentions with regard to how the teachings of the individual references are applied to meet each limitation of claim 2, but whether a POSA would have a motivation to combine these teachings at all. Prelim. Resp. 25–26.

We disagree, and we note that Petitioner does, indeed, articulate a rational motivation to combine, supported by Dr. Michniak-Kohn's testimony, stating that Lesniak and Phinney are in the same field of endeavor as the '706 patent—personal care compositions, including deodorant and/or antiperspirant sticks, that contain known antimicrobials and focus on the use of natural ingredients. Pet. 25 (citing Ex. 1001, Abstract, 1:26–44, 14:32–60; 17:58–12, 18:65–26:36; Ex. 1003, Abstract, Title, 1:16–35, 3:39, 4:22, 4:61–67; 5:5–31, 8:43–46, 9:45, 10:27–33; Ex. 1004, Abstract, Title, 1:5–9, 5:52–60, 6:1–34, 8:40–44; Ex. 1002 ¶ 80).

Petitioner points to Phinney's teaching that that “a mixture of the hydroxides of zinc and magnesium could provide long lasting protection against odour due to perspiration,” versus using zinc oxide alone, which was less effective “due to insolubility and low hydrolysis rate to a hydroxide form that could show some activity.” Pet. 25–26 (citing Ex. 1004, 1:12–22, 2:33–37; 5:64–66, 5:48–49; Ex. 1002 ¶ 82); *see* Ex. 1002 ¶ 77.

We do not find Patent Owner's argument well-taken that zinc oxide was used for different purposes in Lesniak and Phinney, and thus, a POSA would not have had a reason to combine the teachings. *See* Prelim. Resp. 20–21. Lesniak not only describes its compositions may optionally be a sunscreen or a diaper cream, but also an antiperspirant or a lip balm. Ex. 1003, 4:23–26, 10:27–30. Contrary to Patent Owner's protestations,

Lesniak does discuss the antimicrobial activity of its compositions that include zinc oxide.

Lesniak begins by decrying the lack of robustness of various natural personal care compositions against microbial attack, and states that “[i]t would be desirable to provide a natural personal care composition which is micro-robust and which is non-greasy,” in addition to avoiding leaving a white residue on the skin following application. Ex. 1003, 1:16–35. Lesniak also reports that two sunscreen formulations that have a water activity of less than 0.6 and are 20 weight percent of zinc oxide do not support microbial growth. *Id.* at 12:10–13:19. Thus, Lesniak is not only concerned about skin protection, but also the antimicrobial effects of its formulations.

Dr. Michniak-Kohn testifies that “a POSA would have been motivated to incorporate magnesium hydroxide into Lesniak’s composition following Phinney’s guidance, as this combination would improve odor protection while maintaining the ‘natural’ composition intended by Lesniak.” Ex. 1002 ¶ 77. Dr. Michniak-Kohn also testifies that “a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, as simple design choices.” *Id.* ¶ 79. We credit Dr. Michniak-Kohn’s testimony here as supported by the record before us at this stage of the proceeding.

On the record before us, we determine that Petitioner has shown sufficiently a reason to combine the teachings of Lesniak and Phinney to arrive at claim 3.

c) Claim 4 (Ground III)

Petitioner asserts that neither Lesniak nor Phinney expressly teach baking soda as an antimicrobial, but Lamb does. Pet. 27 (citing Ex. 1005,

132). Petitioner points to Lamb’s teaching that baking soda is an “excellent deodorant” that “lasts through the entire day” and “a valuable underarm deodorant for common daily usage.” Pet. 27–28 (quoting Ex. 1005, 132–133). Petitioner concludes that it would have been obvious to include Lamb’s teaching of using baking soda as a deodorant to the teachings of Lesniak and Phinney. *Id.*

Patent Owner questions why a POSA would add the baking soda from Lamb as a deodorant when it is a skin irritant. *See* Prelim. Resp. 22. Patent Owner states:

Petitioner makes no real effort to reconcile its pro-baking soda argument in Ground 3 with its anti-baking soda argument in Ground 6.³ Instead, Petitioner and its expert remarkably claim that a POSA would have both been motivated to *add* baking soda to the Lesniak-Phinney combination because it creates an “excellent” deodorant, yet *remove* baking soda in the Ground 7 combination because of the associated “skin irritation.” (*Id.* at 27–28, 50–51).

Prelim. Resp. 22–23.

We disagree with Patent Owner’s characterization set forth above. Petitioner provides sufficient explanation as to why a POSA would have reason to combine baking soda as a deodorant with the teachings of Lesniak and Phinney, as well as why a POSA may choose to exclude baking soda. *Compare* Pet. 27–28, *with* Pet. 50–51.

Petitioner expressly recognizes that baking soda may be a skin irritant for some users. *See* Pet. 29 (citing Ex. 1002 ¶ 45). But, Petitioner asserts,

³ We assume Patent Owner is referencing Ground 7 here. Ground 6 involves claims that include baking soda, while Ground 7 involves claims that require the deodorant stick to be “substantially free of baking soda,” which is the antimicrobial used in Native’s composition. *See* Pet. 40–55.

a POSA would have been motivated to add baking soda as a secondary antimicrobial to the deodorant sticks disclosed by Lesniak in view of Phinney because baking soda was known to react with acidic compounds responsible for malodor to form non-volatile salts and could provide enhanced efficacy against axillary malodor. And a POSA would have been motivated to use less baking soda than magnesium hydroxide due to baking soda's known skin irritation issues.

Pet. 29 (citing Ex. 105, 132; 1002 ¶¶ 91).

In Ground 7, Petitioner again notes that “a POSA would have known, however, that deodorants containing baking soda (Native's antimicrobial) could cause skin irritation for some users (or at the very least the alternative was a preference for some consumers).” Pet. 50 (citing Ex. 1009, 6). Therefore, Petitioner recognizes that some consumers may prefer an alternative to baking soda for effective odor control in a deodorant.

Petitioner persuasively shows on the record before us with support from its declarant, Dr. Michniak-Kohn, that a POSA would have balanced the need for effective odor protection that baking soda affords with the skin irritation aspects in arriving at the claimed combinations in Grounds 3 and 7. *See* Pet. 27–28, 50–51; Ex. 1002 ¶¶ 87, 91.

On the record before us, we determine that Petitioner has shown sufficiently a reason to combine the teachings of Lesniak, Phinney, and Lamb to arrive at claim 4.

d) Claim 8 (Ground IV)

As set forth above, we determine on the record before us that Lesniak teaches the limitations of claim 1. *See* Section II.C.3.a). Claim 8 depends from claim 1 and adds a hardness limitation. *See* Ex. 1001, 27:23–25. Petitioner notes that Lesniak does not expressly teach hardness as measured by penetration within an ASTM-D 1321 needle test as required by claim 8,

but that Bianchi '518 discloses a hardness range by needle penetration. Pet. 30. Specifically, Petitioner states: “Bianchi '518 teaches that the claimed hardness range of about 7.0 mm to about 14.0 mm (equivalent to about 70 mm*10 to about 140 mm*10), as measured by penetration with an ASTM-D 1321 needle, was ‘typical[],’ and products outside of the range were known to generate low consumer acceptance ratings.” *Id.* at 30 (citing Ex. 1006, 2:56–58, 6:23–29).

We are persuaded that those of ordinary skill in the art would have found the combination of these references in the manner proposed by Petitioner teaches each limitation of claim 8. Patent Owner does not substantively challenge Petitioner’s contentions with regard to how the teachings of the individual references are applied to meet each limitation of claim 8, but rather, challenges whether a POSA would have a motivation to combine these teachings at all. Prelim. Resp. 23–25.

We disagree, and we note that Petitioner does, indeed, articulate a rational motivation to combine supported by Dr. Michniak-Kohn’s testimony, stating that both Lesniak and Bianchi are in the same field as the '706 patent, which all relate to personal care compositions, including deodorant and/or antiperspirant sticks. Pet. 32 (citing Ex. 1001, Abstract, 18:65–26:36; Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43–46, 9:45, 10:27; Ex. 1006, Abstract, Title, 1:8–35, 2:57–58, 6:23–29. Ex. 1002 ¶¶ 97).

As Petitioner points out, Lesniak discloses formulating deodorant sticks that have a desirable “skin feel,” prompting a POSA to review a publication like Bianchi '518 to determine consumer acceptable hardness ranges in formulating a stick composition. Pet. 31 (citing Ex. 1003, 1:16–35; Ex. 1002 ¶¶ 93–95). As Dr. Michniak-Kohn testifies, testimony which we credit based on the record before us, “by the time of the filing of

the '706 Patent, a POSA would have known that hardness was an 'important physical parameter affecting consumer acceptance,' and would have looked to achieve hardness levels that were taught in the field to achieve consumer acceptance," such as Bianchi '518. Ex. 1002 ¶ 93.

Although Bianchi '518 describes typical hardness levels of suspensoid antiperspirant sticks as they relate to "the invention," there is nothing in Bianchi '518 that would limit the application of preferred hardness levels only to the formulations of Bianchi '518. *See* Ex. 1006, 6:23–29; *see generally* Ex. 1006. Contrary to Patent Owner's assertions about a dearth of explanation by Petitioner as to how Lesniak would be modified to achieve the hardness disclosed in Bianchi '518, Petitioner explains how the hardness of Lesniak's deodorant stick could be adjusted to achieve the hardness taught by Bianchi '518. Relying on Dr. Michniak-Kohn's testimony, we find that Petitioner sufficiently explains on this record how this would be done, as follows.

A POSA would have readily understood how to adjust the hardness of the stick, using Lesniak's ingredients, inasmuch as a POSA would have known that adjusting the amount of structurant (using less if the deodorant was too hard, and vice-versa) could achieve the target hardness. For instance, Lesniak describes formulating a deodorant stick with 8% to 19% of a primary structurant, such as beeswax, and also optionally including 3% to 15% of a secondary structurant, such as sunflower seed wax and/or hydrogenated castor oil. A POSA would have understood that the hardness could be adjusted by altering the amount of the primary structurant and/or by incorporating secondary structurants.

Pet. 31–32 (citing Ex. 1003, 9:45–54; 1:39–2:30, 3:43–4:21, 5:32–48; Ex. 1002 ¶ 96).

Dr. Michniak-Kohn further states:

[A] POSA would know that a stick composition could be made less hard by reducing the relative amount of the structurant relative to, typically, the carrier oil component (i.e., less structurant and more carrier oil). Also, the ratio of the primary structurant to the secondary structurant could be used to control hardness, where one leads to a harder stick and the other leads to a softer stick. A structurant with a lower melting point tends to be softer than a structurant with a higher melting point.

Ex. 1002 ¶ 96 (citing Ex. 1014 ¶¶ 28–29 (defining structurant in the same manner as the ’647 Patent and stating that the “structurant material contributes to the stick form with the desired . . . hardness”); *see also id.* ¶ 3 (“Using a large amount of waxy structurant may not be necessarily effective since it may result in an overly hard structure.”)).

On the record before us, including Dr. Michniak-Kohn’s testimony as supported by evidence cited in that testimony, we determine that Petitioner has shown sufficiently a reason to combine the teachings of Lesniak with the hardness disclosure of Bianchi ’518.

4. Conclusion

For the foregoing reasons, we determine that Petitioner has shown a reasonable likelihood of prevailing on showing that claims 1, 3, 4, and 8 of the ’706 patent are unpatentable. Accordingly, we institute an *inter partes* review of claims 1–8 and 10–23 of the ’706 patent.

D. The Native Grounds (Grounds VI–VIII)

1. Parties’ Contentions

Petitioner presents three grounds that rely on Native to teach the majority of the limitations of the asserted claims. *See* Pet. 40–62. For Ground VI, Petitioner asserts that claims 1, 5, 7, 8, 10–12, and 15 of the ’706 patent would have been obvious over Native and Bianchi ’254. Pet. 40–50.

For Ground VII, Petitioner asserts that claims 2–4, 6, 13, and 14 would have been obvious over Native, Bianchi ’254, and Easy Homemade. Pet. 50–55. For Ground VIII, Petitioner asserts that claims 16–23 would have been obvious over Native, Bianchi ’254, Easy Homemade, Anconi, and Stoia. Pet. 63–66.

Petitioner states that “Native discloses features of deodorant stick compositions claimed in the ’706 Patent; however, it does not expressly teach the percentage of each ingredient used, including the percentage of liquid triglyceride (carrier oil).” Pet. 40–41. Petitioner relies on Bianchi ’254 to teach the appropriate concentrations of the ingredients of the deodorant stick such as the percentages of liquid triglyceride, a carrier oil, and structurants, *see id.* at 42, and to teach the required harness range, *see id.* Petitioner relies on Easy Homemade for teaching a deodorant stick substantially free of baking soda that comprises magnesium hydroxide as the antimicrobial with a water solubility of at most about 50 or 90g/L at 25° C. Pet. 50–51. Finally, Petitioner relies on Anconi to teach triethyl citrate as an alternative antibacterial with deodorant properties, and Stoia to teach sunflower seed oil as an emollient with “positive skin effects.” Pet. 56–57.

Petitioner provides detailed claim charts for each of these grounds explaining how each claim limitation is disclosed in the asserted references and how its assertions are supported by the testimony of Dr. Michniak-Kohn. *See* Pet. 40–50 (Ground VI), 50–55 (Ground VII), Pet. 55–62 (Ground VIII); Ex. 1002 ¶¶ 135–218.

2. Patent Owner’s Contentions

At this point in the proceeding, Patent Owner does not dispute Petitioner’s characterization of or prior art status of Native, Bianchi ’254, Easy Homemade, Anconi, Stoia, or the other references that Petitioner cites.

See generally Prelim. Resp. Patent Owner contends that persons of ordinary skill in the art would not have been motivated to make the combinations of art in Grounds VI through VIII. *See* Prelim. Resp. 26–32.

Specifically, Patent Owner contends that Petitioner fails to demonstrate there is a reasonable likelihood it will prevail on the merits of Grounds VI through VIII because (1) a POSA seeking to develop a *natural* deodorant stick would not have been motivated to look to Bianchi ’254, which describes and claims antiperspirant sticks that *contain aluminum*, *see* Prelim. Resp. 27–30; (2) Petitioner fails to show that a POSA would have had a reasonable expectation of success in its attempts to implement Bianchi ’254’s hardness range in Native’s formula, *see* Prelim. Resp. 29–30; and (3) Petitioner fails to show why a POSA would have looked to Easy Homemade, a hobbyist’s homemade soap blog, or why a POSA would have modified the successful Native product at all, *see* Prelim. Resp. 30–32.

We will address each of Patent Owner’s arguments in turn.

3. Discussion

Petitioner asserts that Native’s natural, aluminum-free deodorant stick is comprised of the following ingredients—caprylic/capric triglyceride, baking soda, stearyl alcohol, oleyl glycerol-3 beeswax, and jojoba esters—although the percentage of each ingredient is not disclosed. Pet. 41 (citing Ex. 1007, 11); Ex. 1002 ¶ 137. Dr. Michniak-Kohn testifies that “[i]n the absence of express teachings on these points, a POSA would have looked to other publications in the field with suitable weight percentage examples.” Ex. 1002 ¶ 137; *see* Pet. 41.

Dr. Michniak-Kohn notes that Native’s primary structurant is a fatty alcohol as in Bianchi ’254’s antiperspirant stick compositions. Ex. 1002 ¶ 138. Dr. Michniak-Kohn concludes that “[w]hen formulating a natural,

aluminum-free deodorant stick based on the composition in Native, a POSA would have looked at publications describing other stick compositions, like Bianchi '254, for information regarding the amount of ingredients.” *Id.* ¶ 139. We credit Dr. Michniak-Kohn’s testimony on the record before us as consistent with the record evidence.

As Petitioner notes, both Native and Bianchi '254 are in the same field as the '647 patent—personal care compositions, including deodorants and/or antiperspirants. Pet. 43 (citing Ex. 1001, Abstract, 18:65–26:36; Ex. 1007, 5–8, 11; Ex. 1008, Abstract, ¶¶ 10–21; Ex. 1002, ¶142). There is nothing in the record that we have found to distinguish natural, aluminum-free deodorants from antiperspirants containing aluminum in such a way that ingredients of one would not be used for the same purpose in the other. Dr. Michniak-Kohn persuasively asserts on the record before us that when looking at particular ingredients of a formulation, a POSA would look to other references in the same field—personal care compositions, including deodorants and/or antiperspirants—to determine how much of each ingredient should be used.

We find that Petitioner has shown sufficiently on the record before us that a POSA would have had a reasonable expectation of success in their attempts to implement Bianchi '254’s hardness range in Native’s formula. As we have stated earlier, we credit Dr. Michniak-Kohn’s testimony that regarding how a POSA would have understood how to adjust hardness using the structurants in a composition. *See* Ex. 1002 ¶ 158; *see* Pet. 53 (stating a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, structurants, and carrier oils, as simple design choices) (quoting Ex. 1002 ¶ 171–172).

We also find on the record before us that Petitioner has shown sufficiently a reason to combine Native and Bianchi '254 with Easy Homemade. Dr. Michniak-Kohn testifies:

[A] POSA would have appreciated that such websites [like Easy Homemade] from independent formulators striving for more natural options present an indication of consumer preferences, which a POSA would desire to meet in formulating new commercial products. Easy Homemade was widely accessible, being part of a series of related “Soap Deli News” articles dedicated to deodorant formulations with significant engagement from individuals globally.

Ex. 1002 ¶ 167 (citing Ex. 1009; Exs. 1016–1018).

Dr. Michniak-Kohn further testifies:

[A] POSA would have known that deodorants containing baking soda could cause skin irritation for some users and Easy Homemade confirms what a POSA would have known—namely, that magnesium hydroxide was a known substitute for baking soda that avoided skin irritation. Ex. 1009, 6, 9. A POSA would have looked to publications in the field of deodorants describing known and, preferably, natural antimicrobials that were effective and which were not known to cause skin irritation. And a POSA would seek to understand consumer demands in the field (not being suitably met by existing offerings) for guidance on new products.

Ex. 1002 ¶ 168.

On the record before us, we credit Dr. Michniak-Kohn’s testimony as consistent with the evidence of record before us as this stage of the proceeding. Even though Native is a successful product, it contains baking soda, which is a known skin irritant for which Easy Homemade provides a solution. Petitioner has also shown sufficiently on the record before us that a POSA would be concerned about consumer preferences and would consult blogs such as Easy Homemade to determine those preferences.

4. *Conclusion*

On the record before us at this point in the proceeding, we do not find Patent Owner's assertions about Ground V through VII to be well-taken.

E. *Squatch Ground (Ground IX)*

Petitioner asserts in its last ground, Ground IX, that claims 16–23 would have been obvious over Squatch and Sturgis. Petitioner asserts that

Squatch is a website excerpt disclosing known aluminum-free deodorant formulations that comprise caprylic/capric triglyceride, arrowroot powder, stearyl alcohol, and magnesium hydroxide. Squatch published on a well-known website, which received over 12.5 million views in November 2020.

Pet. 63.

Patent Owner questions whether the photos of three different Dr. Squatch deodorants in the Squatch reference ever appeared on Dr. Squatch's publicly-accessible website because the Squatch reference does not include any screenshots of the webpage. Prelim. Resp. 32–34. Therefore, Patent Owner questions whether Dr. Squatch qualifies as a printed publication. *Id.*

Patent Owner also questions the particularity with which Petitioner explains a POSA's motivation to combine Squatch, which Petitioner asserts teaches all of the ingredients of claims 16 through 23, with Sturgis for guidance on the amounts for those ingredients. Prelim. Resp. 35.

These issues will be fully vetted during the trial, which we have decided to institute based on the Lesniak grounds. We will make our final determination on these issues on the full record of the proceeding.

IV. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that claims 1, 3, 4, and 8 of the '706 patent are unpatentable. We therefore institute trial on all challenged claims under the grounds raised in the Petition. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (indicating that a decision whether to institute an *inter partes* review “require[s] a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”); 37 C.F.R. § 42.108(a). At this stage of the proceeding, we have not made a final determination with respect to the patentability of any of the challenged claims.

Any argument not raised in a timely Patent Owner Response to the Petition, or as permitted in another manner during trial, shall be deemed waived even if asserted in the Preliminary Response. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1380–81 (Fed. Cir. 2016) (holding Patent Owner waived an argument addressed in the Preliminary Response by not raising the same argument in the Patent Owner Response). In addition, nothing in this Decision authorizes Petitioner to supplement information advanced in the Petition in a manner not permitted by the Board’s Rules.

V. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted as to claims 1–8 and 10–23 of the '706 patent based on the unpatentability challenges presented in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision.

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