

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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**Dr. Squatch LLC**

*Petitioner*

v.

**The Procter & Gamble Company**

*Patent Owner*

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Case IPR2024-01174

U.S. Patent No. 11,497,706

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**PATENT OWNER'S RESPONSE**

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## **EXHIBIT LIST**

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex. 2001           | Full File History of the '706 Patent                                                                                                                                                                                                                                                                                                                                                                                                      |
| Ex. 2002           | <i>Reserved</i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ex. 2003           | Mayo Clinic, <i>Zinc Oxide (Topical Application Route)</i> , <a href="https://www.mayoclinic.org/drugs-supplements/zinc-oxide-topical-application-route/description/drg-20075525">https://www.mayoclinic.org/drugs-supplements/zinc-oxide-topical-application-route/description/drg-20075525</a>                                                                                                                                          |
| Ex. 2004           | Wayback Machine, Mayo Clinic, <i>Zinc Oxide (Topical Application Route)</i> , <a href="https://web.archive.org/web/20150102193922/https://www.mayoclinic.org/drugs-supplements/zinc-oxide-topical-application-route/side-effects/drg-20075525?p=1">https://web.archive.org/web/20150102193922/https://www.mayoclinic.org/drugs-supplements/zinc-oxide-topical-application-route/side-effects/drg-20075525?p=1</a> (archived Jan. 2, 2015) |
| Ex. 2005           | <i>Reserved</i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ex. 2006           | <i>Reserved</i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ex. 2007           | International Publ. No. WO 99/21528                                                                                                                                                                                                                                                                                                                                                                                                       |
| Ex. 2008           | Notice of Allowance for the '647 Patent                                                                                                                                                                                                                                                                                                                                                                                                   |
| Ex. 2009           | <i>Reserved</i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ex. 2010           | <i>Reserved</i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ex. 2011           | Declaration of Robert Lochhead, Ph.D.                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ex. 2012           | Deposition Transcript of Dr. Michniak-Kohn (April 17, 2025)                                                                                                                                                                                                                                                                                                                                                                               |
| Ex. 2013           | CeraVe, <i>Products Formulated with Zinc Oxide</i> , available at <a href="https://www.cerave.com/skincare/zinc-oxide#:~:text=Zinc%20oxide%20sunscreen%20works%20by,active%20ingredients%20in%20chemical%20sunscreens">https://www.cerave.com/skincare/zinc-oxide#:~:text=Zinc%20oxide%20sunscreen%20works%20by,active%20ingredients%20in%20chemical%20sunscreens</a> (last accessed May 1, 2025).                                        |

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex. 2014 | Nivea, <i>Deodorants vs. Antiperspirant: What's the Difference?</i> , available at <a href="https://www.nivea.in/advice/deodorant-vs-antiperspirant">https://www.nivea.in/advice/deodorant-vs-antiperspirant</a> (last accessed May 1, 2025).                                                                                                                                                                                                                                                                                                        |
| Ex. 2015 | Dove, <i>What's The Difference Between Deodorant &amp; Antiperspirant?</i> , available at <a href="https://www.dove.com/us/en/stories/tips-and-how-to/sweating-tips/antiperspirant-vs-deodorant-what-is-the-difference.html#:~:text=The%20key%20difference%20is%20the,you%20fresh%20throughout%20the%20day">https://www.dove.com/us/en/stories/tips-and-how-to/sweating-tips/antiperspirant-vs-deodorant-what-is-the-difference.html#:~:text=The%20key%20difference%20is%20the,you%20fresh%20throughout%20the%20day</a> (last accessed May 1, 2025). |
| Ex. 2016 | Secret, <i>What is the difference between an antiperspirant and a deodorant?</i> , available at <a href="https://secret.com/en-us/articles/antiperspirants-vs-deodorants-whats-the-difference">https://secret.com/en-us/articles/antiperspirants-vs-deodorants-whats-the-difference</a> (last accessed May 1, 2025).                                                                                                                                                                                                                                 |
| Ex. 2017 | Dr. Squatch, <i>WTF Is The Difference Between Antiperspirant and Deodorant?</i> , available at <a href="https://www.drsquatch.com/blogs/all-blog-posts/antiperspirant-and-deodorant">https://www.drsquatch.com/blogs/all-blog-posts/antiperspirant-and-deodorant</a> (last accessed May 1, 2025).                                                                                                                                                                                                                                                    |
| Ex. 2018 | ASTM D-1321 Needle Penetration Test Standard (1996)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ex. 2019 | DIN 51 579 Needle Penetration Test Standard (1965)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Ex. 2020 | <i>Curriculum vitae</i> of Dr. Robert Lochhead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

***All emphasis has been added and all internal citations have been omitted unless otherwise indicated.***

## I. INTRODUCTION

P&G identified a gap in the market: Modern consumers sought natural, aluminum-free, silicone-free deodorants with an underarm-friendly feel. However, then-available, natural deodorants were too hard, too brittle, and/or too greasy, leading to consumer discomfort and frustration. P&G spent years carefully developing its aluminum-free formulations to meet consumer-desired properties as to drag, glide, hardness, skin-feel, and irritation, ultimately inventing and creating the deodorant stick described and claimed in U.S. Patent No. 11,497,706 (“the ’706 Patent”).

Petitioner Dr. Squatch seeks to cash in on P&G’s success at meeting consumer needs in the natural aluminum-free deodorant space, advancing two tracks of invalidity challenges centered around deficient and non-enabling primary references Lesniak and Native, and a third invalidity challenge based on references Squatch and Sturgis that are not even prior art.

Petitioner’s Lesniak-based grounds suffer from several defects:

- *First*, Lesniak does not disclose the “deodorant stick” required by the limiting preamble of all claims because the reference is explicitly tailored to high zinc-oxide concentration sunscreens and diaper creams; its passing reference to an “antiperspirant” would be of no moment to a POSA.

- *Second*, if Lesniak’s “antiperspirant” is considered, it dooms Petitioner’s Lesniak-based challenges because a POSA would have understood an “antiperspirant” to contain aluminum and aluminum is explicitly excluded from the compositions of the ’706 Patent.
- *Third*, Lesniak cannot enable any purported deodorant stick due to its conceded stability issues.
- *Fourth*, Petitioner does not provide a sufficient motivation to pluck magnesium hydroxide out of Phinney’s multi-ingredient invention and combine it with Lesniak, because Petitioner fails to (i) sufficiently explain *why* a POSA would have been motivated to reformulate Lesniak in the first place; (ii) justify its hindsight-based magnesium hydroxide plucking; and (iii) provide any support for *how* a POSA would have made this proffered combination with any reasonable expectation of success.
- *Fifth*, Petitioner does not provide sufficient reasoning as to why a POSA would have been motivated to combine the teachings of Lesniak regarding natural compositions with the teachings of Bianchi-518 or Bianchi-254 relating to non-natural compositions containing 20-50% volatile silicones (such as cyclomethicone or siloxanes). Petitioner fails to provide sufficient reasoning as to why

a POSA would have been motivated to combine the teachings of Lesniak regarding natural compositions with the teachings of Bianchi-518 or Bianchi-254 relating to non-natural compositions containing 20-50% volatile silicones (such as cyclomethicone or siloxanes), which are not natural ingredients.

- *Sixth*, as to the dependent claim reciting the hardness limitation, Petitioner did not provide *any reference whatsoever* that discloses any stick composition—sunscreen, antiperspirant, deodorant, or otherwise—within the hardness range claimed by the '706 Patent. Petitioner's attempt to rely on Bianchi-518 for this limitation is based on a fundamental misapprehension of the different hardness test used in Bianchi-518 (using a 100-g needle penetration weight) as compared to that used in the '706 Patent (using a 50-g needle penetration weight); in fact, Bianchi-518's disclosed hardness range is *significantly harder* than the claimed hardness range of the '706 Patent dependent claim. This failing is compounded because Petitioner does not provide any reason why a POSA would have reformulated Lesniak's compositions to incorporate Bianchi-518's (inapt) hardness values to reach the limitations of the claims, in view

of the fact that Bianchi-518's much harder stick is specific to aluminum- and silicone-based sticks.

- And, *seventh*, for other claim limitations, Petitioner neglects to explain why a POSA would have been motivated to completely reformulate Lesniak to include/remove certain ingredients with any reasonable expectation of success, specifically relating to baking soda, triethyl citrate, and starches.

Petitioner's Native-based grounds fare no better:

- Petitioner admits Native is a list of ingredients for a natural, aluminum-free deodorant stick that received rave reviews, and offers no reason a POSA would seek to modify Native at all, let alone combine Native with any of the secondary references upon which Petitioner relies. As one example, Petitioner fails to meet its burden to show that a POSA seeking to modify Native's natural ingredients (for some reason that has not been shown) would look to Bianchi-254's aluminum-containing and volatile silicone-based antiperspirant.
- A POSA would not have looked to the aluminum- and silicone-containing Bianchi-254, nor would the POSA have been motivated

to implement Bianchi-254's purported teachings, when seeking to formulate a natural, aluminum-free deodorant.

- Petitioner again fails to provide *any reference* that discloses the claimed hardness range: Native does not mention hardness, and Petitioner's combination with Bianchi-254 suffers from the same deficiencies as Bianchi-518 in Petitioner's Lesniak-based combinations, including that Bianchi-254's hardness values are *significantly harder* than those of the '706 Patent's claim 8, given the use of a 100-g needle assembly testing method in Bianchi-254, versus the '706 Patent's 50-g needle assembly testing method.
- Petitioner does not provide sufficient motivation to combine Native with the teachings of the Easy Homemade blog, failing to explain *why* a POSA would have looked to, or even found, the informal blogpost in the first instance to completely reformulate Native's successful commercial deodorant product, or *how* a POSA would have actually done so with any reasonable expectation of success.
- And for additional claim limitations involving baking soda, triethyl citrate, and sunflower seed oil, Petitioner's challenges evidence the same cherry-picking and hindsight bias as its Lesniak-based challenges.

Finally, Petitioner's Squatch-Sturgis combination should not be considered because neither reference qualifies as prior art.

For all of the these reasons, explained in greater detail below, P&G respectfully requests a determination that the claims of the '706 Patent are not unpatentable.

## **II. THE '706 PATENT**

### **A. Overview of the '706 Patent**

The '706 Patent is directed to novel and inventive “antiperspirant and deodorant compositions and methods relating thereto.” ('706 at 1:15-17.) The inventors discovered that then-available aluminum-free, natural deodorant sticks had significant drawbacks, namely that they were too hard, too greasy, and did not provide the desired consistency and feel sought by consumers. The patent notes that “[m]any antiperspirant and deodorants use actives that are astringent metallic salts, or in particular, aluminum salts.” (*Id.* at 1:21-22.) And while aluminum “is highly effective as an active,” consumers have been increasingly interested in more natural formulations “that do not contain aluminum.” (*Id.* at 1:22-25.) Some products use baking soda as an alternative to aluminum, but the '706 Patent explains consumers may seek “products with lower irritation than they have experienced with baking soda based products.” (*Id.* 1:26-30.) The inventors thus recognized “a continuing

challenge to formulate a non-aluminum, natural fragrance deodorant that provides low irritation while maintaining sufficient odor protection.” (*Id.* at 1:42-44.)

Certain deodorant compositions described and claimed in the ’706 Patent have a stick hardness “from about 70 mm\*10 to about 140 mm\*10, as measured by penetration with ASTM D-1321 needle.” (*Id.* at cl. 8.) The specification explains that “[b]ecause achieving a sufficient softness in a deodorant stick with natural ingredients can be a challenge, it can be beneficial to formulate with higher amounts of liquids such as liquid triglyceride.” (*Id.* at 14:57-60.) So “[r]ather than using waxes or other high melting structurants,” the claimed compositions of the ’706 Patent “comprise [certain] levels of liquid triglycerides,” *e.g.*, “at least about 25% by weight” or more. (*Id.* at 14:61-15:10; *id.* at cls. 1, 12, 15, 16, 18.)

The patent further outlines a test for stick hardness, explaining “[t]he penetration test is a physical test method that provides a measure of the firmness of waxy solids and extremely thick creams and pastes with penetration values not greater than 250 when using a needle for D1321.” (*Id.* at 21:51-55.) The patent’s hardness test is “based on”—but not identical to—the American Society for Testing and Materials Methods D-5, D1321 and D217 and DIN 51 579. (*Id.* at 21:54-58.)

Specifically, a test method that “[e]nsure[s] the total weight of the shaft and needle is  $50 \pm 0.2$  grams when the shaft is in free fall.” (*Id.* at 21:55-23:2.)

The inventors discovered that “[p]roviding a deodorant stick having at least 25% of a liquid triglyceride and structurants having a melting point greater than about 50 degrees 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.) With these specific features along with others described and claimed in the ’706 Patent, “[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; *see* Ex. 2011 at ¶¶ 21-27.)

## **B. Claim Construction**

Claim terms are to be construed in accordance with the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). But “[o]nly terms which are in controversy need to be construed, and then only to the extent necessary to resolve the controversy and material to the decision.” *Facebook, Inc. v. Sound View Innovations, LLC*, IPR2017-01005, Paper No. 13 at 6 (PTAB Sept. 1, 2017).

Here, the preamble reciting “a deodorant stick” is limiting. While each of Petitioner’s challenges fail for other independent reasons, Petitioner’s Lesniak-based

challenges also fail because Lesniak does not disclose a “deodorant stick” for the reasons discussed below.

A preamble limits the invention if “it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). A preamble may “act as a necessary component of the claimed invention” where, as here, “limitations in the body of the claim rely upon and derive antecedent basis from the preamble.” *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003); *see also Bio-Rad Labs., Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1371 (Fed. Cir. 2020). The Federal Circuit “ha[s] repeatedly held a preamble limiting when it serves as antecedent basis for a term appearing in the body of a claim.” *In re Fought*, 941 F.3d 1175, 1178 (Fed. Cir. 2019) (citing cases).

The preamble of the ’706 Patent’s independent claims 1, 16, and 20 recite “A deodorant stick comprising.” Later limitations in those claims rely on the preamble’s recitation of “a deodorant stick” for antecedent basis, claiming “said stick being free of an aluminum salt”:

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

16. A deodorant stick comprising:  
a. at least about 25% by weight liquid triglyceride;  
b. a starch;  
c. stearyl alcohol;  
d. magnesium hydroxide;  
e. beeswax;  
f. shea butter;  
g. coconut oil;  
h. triethyl citrate;  
i. jojoba seed oil; and  
j. sunflower seed oil;  
said deodorant stick being free of an aluminum salt.

20. A deodorant stick comprising:  
a. at least about 25% by weight liquid triglyceride;  
b. stearyl alcohol;  
c. magnesium hydroxide;  
d. beeswax;  
e. shea butter;  
f. coconut oil;  
g. triethyl citrate;  
h. jojoba seed oil; and  
i. sunflower seed oil;  
said deodorant stick being free of an aluminum salt.

Dependent claims also rely on the preamble to define the invention and provide antecedent basis, reciting for example in the body of claim 6 “*the deodorant stick* is substantially free of baking soda,” in claim 7 “*the deodorant stick* is substantially free of a synthetic fragrance,” in claim 8 “*the deodorant stick* has a [claimed] hardness,” and in claim 9 “*the deodorant* comprises piroctone olamine and magnesium hydroxide and magnesium carbonate hydroxide.” (’706.).

The Board and the Federal Circuit have found the preamble limiting in similar situations. *See, e.g., Shoes by Firebug LLC v. Stride Rite Children’s Group, LLC*, 962 F.3d 1362 (Fed. Cir. 2020) (finding the preamble, “[a]n internally illuminated textile footwear comprises,” limited the invention to “textile footwear” where the

claim later relied on the preamble’s use of “footwear” for antecedent basis, reciting “the illumination system being housed within the footwear”); *C.W. Zumbiel Co., Inc. v. Kappos*, 702 F.3d 1371, 1385 (Fed. Cir. 2012) (“containers” are a limitation where claim body relied on preamble’s recitation of “a plurality of containers,” stating “the preamble constitutes a limitation when the claim(s) depend on it for antecedent basis”); *Palo Alto Networks, Inc. v. BT Ams., Inc.*, 2024 WL 4709942, at \*8-9 (P.T.A.B. 2024). So too here. Each claim’s preamble “deodorant stick” should be construed as a limitation of the claim.

### **C. Person Of Ordinary Skill In The Art**

Petitioner states that a person having ordinary skill in the art (“POSA”) as of the claimed priority date “would have (1) at least a B.S. or equivalent degree; and (2) at least two years of experience in cosmetics formulations.” (Petition at 17.) For purposes of this IPR proceeding only, P&G does not dispute this definition. (Ex. 2011 at ¶¶ 28-30.)

## **III. THE ASSERTED PRIOR ART**

### **A. Lesniak-Based Grounds (Grounds 1-5)**

***Lesniak.*** Lesniak describes and claims “natural” compositions relating to “a sunscreen or a diaper cream” with high zinc oxide content (up to 20% or higher). (See, e.g., Ex. 1003 at cl. 1.) As a POSA would have appreciated, the compositions disclosed in Lesniak are anhydrous, structured, natural compositions comprising a network of crystals which physically trap liquid in their interstices. (Ex. 2011 at ¶

34.) A POSA would have understood that the liquid carrier system in Lesniak, as relied upon by Petitioner, is primarily triglyceride-based. (*Id.*) Lesniak does not disclose deodorant sticks, and mentions antiperspirants only in passing without specifying any form. The reference contains just one example of a composition in the form of a stick (Example 6), and it is a sunscreen stick. (*See* Ex. 1003 at 15:7-45, Table 7.) Nearly all of the compositions disclosed and formulated in Lesniak failed stability testing. (*See id.* at Table 2.)

***Phinney.*** Phinney describes deodorant formulations comprising zinc hydroxide, magnesium hydroxide, and potassium chloride and/or potassium sulfate. (*E.g.*, Ex. 1005 at 4:45-51.) Phinney's stick differs from Lesniak's not only because Phinney is a deodorant whereas Lesniak's is a sunscreen, but also because it employs a different stick technology and different active ingredients. (Ex. 1004 at 4:48-51, cl.1, cl.7.) Phinney is not an anhydrous semisolid with a liquid triglyceride carrier, but rather is a polyol-based sodium stearate gel stick comprising up to 20% water. (*See* Ex. 2011 at ¶ 35.) Whereas Lesniak's active ingredients comprise zinc oxide, Phinney's active ingredients comprise zinc hydroxide and magnesium hydroxide. (Ex. 1004 at 4:48-51, cl.1, cl.7.) Phinney offers no guidance to a POSA on how to adapt any of its teachings to an anhydrous stick with a triglyceride-carrier system, nor how to adapt Lesniak's zinc oxide compositions to Phinney's zinc hydroxide and magnesium hydroxide compositions.

**Bianchi-518.** Bianchi-518 describes and claims aluminum-based antiperspirant compositions with about 30-50% volatile silicones and about 5-30% of an antiperspirant active comprising aluminum salts or complexes. (*E.g.*, Ex. 1006 at 5:10-6:15 (Examples A-U), 2:59-4:7.) The stick technology employed by Bianchi-518 is yet a third type, different from both Lesniak and Phinney. It is an anhydrous, aluminum-containing, silicone-based composition, substantially free of fatty alcohols and including primarily non-natural ingredients. Bianchi-518 discloses a hardness range specific to its particular stick of “7.0 to about 14.0 mm,” based on penetration results as measured using a 100-g weight penetration needle assembly in accordance with the ASTM D-1321 standard test method. (*Id.* at 2:58, 6:23-28; Ex. 2011 at ¶ 36).

**Lamb.** Lamb is an article describing a survey and study of medical students, the author’s family and friends, and the author’s patients where the participants used plain sodium bicarbonate as a single-ingredient deodorant. (Ex. 1005 at 131; Ex. 2011 at ¶ 37.)

**Bianchi-254.** Similar to Bianchi-518, Bianchi-254 describes antiperspirant compositions including from about 20-40% volatile silicone and from 15-30% aluminum salts or complexes. (*See* Ex. 1008 at [0028], cl. 1.) The stick technology is like Bianchi-518, an anhydrous, silicone- and aluminum-containing composition substantially free from long-chain fatty alcohols; it is chemically and structurally

different from the natural compositions of Lesniak and Phinney. Bianchi-254 discloses hardness values for its compositions as measured using a 100-g weight needle assembly penetration testing method, rendering its compositions significantly harder than the claimed compositions of the '706 Patent, which utilizes a 50-g needle penetration testing method for hardness. (Ex. 1008 at [0117], Table 6; Ex. 2011 at ¶ 38.)

**Anconi.** Anconi describes and claims antiperspirant compositions comprising zinc salts. (See Ex. 1057 at Abstract.) Anconi provides a laundry list of optional ingredients that can be included in its compositions to purportedly provide “antibacterial and deodorant properties,” including triethyl citrate. (*Id.* at [0027].) Anconi warns that “[s]ticks and solids are really complex chemical systems requiring a balance of ingredients designed to make the most of several performance factors including payout, slip or lubricity, chemical stability, softening temperature, and of course, efficacy.” (*Id.* at [0052]; Ex. 2011 at ¶ 41.)

## **B. Native-Based Grounds (Grounds 6-8)**

In addition to Bianchi-254 and Anconi described above, the Native-based grounds rely on:

**Native.** Native is a Wayback Machine printout of the former website for the Native company, purporting to describe portions of Native’s aluminum-free, natural deodorant formula from 2016. Native shows numerous positive reviews of the

Native deodorant product as it existed at that time. (Ex. 1007 at 8, 17; Ex. 2011 at ¶ 39.)

***Easy Homemade.*** Easy Homemade is a printout of a blog post by an apparent deodorant hobbyist from the Wayback Machine. (Ex. 1009.) The post reflects information shared by a single layperson, and Petitioner provides no reason it would be relied upon by a POSA. The deodorant recipe shared by the blogger uses a premade, baking-soda-free deodorant base with an undisclosed amount of additional ingredients. (Ex. 2011 at ¶ 40.)

***Stoia.*** Stoia is a report titled “Selected Evidence-Based Health Benefits of Topically Applied Sunflower Oil,” that does not address the use of sunflower seed oil in a deodorant stick. (Ex. 1058.)

### **C. Squatch-Sturgis Ground (Ground 9)**

***Squatch.*** Squatch is an employee declaration purporting to show images of deodorants from the Dr. Squatch website in November 2020. But Squatch does not show a depiction of those products actually on the website at that time. (Ex. 1059 at 2-3.)

***Sturgis.*** Sturgis was filed on June 28, 2018, and published on January 3, 2019. Sturgis later issued as U.S. Patent No. 10,905,647.

#### **IV. PETITIONER’S LESNIAK-BASED GROUNDS ARE UNCONVINCING**

Petitioner’s Lesniak-based grounds do not anticipate or render obvious the challenged claims.

##### **A. Lesniak Does Not Disclose a “Deodorant Stick.” (Grounds 1-5: All Claims 1-23)**

Lesniak does not disclose a “deodorant stick,” as required by the preamble of each independent claim. Lesniak embodies sunscreen and diaper cream compositions containing high concentrations of zinc oxide. Petitioner attempts to bridge this gap by focusing on a single fleeting reference to “antiperspirant” in Lesniak, contending that the mere mention of an “antiperspirant” amounts to a disclosure of the ’706 Patent’s claimed “deodorant stick.” Not so. A POSA would not credit Lesniak as an “antiperspirant” reference with this limited disclosure that is entirely out of place—and contradicted (“antiperspirant”; “not an antiperspirant”)—in the reference as a whole. And in any event, Lesniak does not enable any purported deodorant stick in view of the instability of the sunscreen and diaper cream compositions it does disclose.

##### **1. Lesniak Discloses Sunscreens and Diaper Creams, Not Deodorant Sticks.**

Lesniak is a laundry-list reference disclosing numerous and varied combinations and concentrations of ingredients for “natural” sunscreen and diaper cream compositions.

Lesniak describes twelve different compositions of sunscreens (Compositions 1-12), ten of which Lesniak treats as comparative examples:

| TABLE 2                                |               |               |               |               |               |               |               |               |               |               |               |
|----------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Sunscreens.                            |               |               |               |               |               |               |               |               |               |               |               |
|                                        | Composition#  |               |               |               |               |               |               |               |               |               |               |
|                                        | 1*            | 2*            | 3*            | 4*            | 5*            | 6*            | 7*            | 8             | 9*            | 10*           | 11            |
| Weight %                               |               |               |               |               |               |               |               |               |               |               |               |
| Zinc Oxide                             | 20            | 20            | 20            | 20            | 20            | 20            | 20            | 20            | 20            | 20            | 20            |
| Sunflower oil                          | 57            | 30            | 10            | 10            | 10            | 10            | 10            | 10            | 10            | 10            | 12.5          |
| Caprylic/Capric Triglyceride           | 5             | 35            | 55            | 53            | 53            | 54            | 54            | 53            | 53            | 50            | 52            |
| Beeswax                                | 13            | 15            | 15            | 17            | 17            | 15            | 15            | 15            | 15            | 15            | 13.5          |
| Shea butter                            | 5             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             |
| CastorWax MP80 hydrogenated castor oil | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 2             | 0             | 0             | 2             |
| Tapioca starch                         | 0             | 0             | 0             | 0             | 0             | 0             | 1             | 0             | 0             | 0             | 0             |
| Cetyl Alcohol                          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 2             | 0             | 0             |
| Thickener silica                       | 0             | 0             | 0             | 0             | 0             | 1             | 0             | 0             | 0             | 0             | 0             |
| Natural jelly SP511                    | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 5             | 0             |
| Total                                  | 100           | 100           | 100           | 100           | 100           | 100           | 100           | 100           | 100           | 100           | 100           |
| Freeze/thaw stability                  | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass | F/T 3<br>Pass |
| High temp. stability (49° C.)          | Fail          | Fail          | Fail          | Fail          | Fail          | Fail          | Fail          | Pass          | Fail          | Fail          | Pass          |
| "Whitening" acceptability              | No            | No            | Yes           | Yes           | Yes           | No            | No            | Yes           | No            | No            | Yes           |
| Dispensing acceptability               | No            | No            | No            | No            | No            | No            | No            | Yes           | No            | No            | Yes           |
| Greasiness/after-feel acceptability    | No            | No            | Yes           | Yes           | Yes           | Yes           | Yes           | Yes           | Yes           | No            | Yes           |

\*denotes comparative composition.

| TABLE 3                                        |               |               |
|------------------------------------------------|---------------|---------------|
| Water activity of sunscreen compositions       |               |               |
|                                                | Composition#  |               |
|                                                | 11 (weight %) | 12 (weight %) |
| Zinc Oxide                                     | 20            | 20            |
| Sunflower oil                                  | 12.5          | 12.1          |
| Caprylic/Capric Triglyceride                   | 52            | 52            |
| Beeswax                                        | 13.5          | 13.5          |
| TABLE 3-continued                              |               |               |
| Water activity of sunscreen compositions       |               |               |
|                                                | Composition#  |               |
|                                                | 11 (weight %) | 12 (weight %) |
| CastorWax MP80 hydrogenated castor oil         | 2             | 2             |
| Fragrance (natural lavender vanilla fragrance) | 0             | 0.40          |
| Total                                          | 100           | 100           |
| Water activity                                 |               |               |
| Sample #1                                      | 0.262         | 0.306         |
| Sample #2                                      | 0.265         | 0.309         |
| Sample #3                                      | 0.268         | 0.304         |

(*Id.* at Tables 2, 3.) Lesniak analyzes the Sun Protective Factor (SPF) of its inventive Composition 12, and compares its water resistance to five different commercially available sunscreens. (*Id.* at 13:23-45, Tables 4, 6.)

For diaper creams, Lesniak discloses and analyzes six different diaper cream formulations (Compositions A-F):

| TABLE 5                                |          |      |      |      |       |       |
|----------------------------------------|----------|------|------|------|-------|-------|
| Diaper cream formulations              |          |      |      |      |       |       |
| Composition#                           | A        | B    | C    | D    | E     | F     |
|                                        | Weight % |      |      |      |       |       |
| Zinc Oxide                             | 12       | 12   | 12   | 12   | 12    | 12    |
| Sunflower oil                          | 12.5     | 12.5 | 12.5 | 12.5 | 12.49 | 20.49 |
| Caprylic/Capric Triglyceride           | 60       | 55   | 55   | 52   | 52    | 52    |
| Coconut oil                            | 0        | 0    | 5    | 5    | 5     | 0     |
| Beeswax                                | 13.5     | 13.5 | 13.5 | 13.5 | 13.5  | 13.5  |
| Shea butter                            | 0        | 5    | 0    | 3    | 3     | 0     |
| CastorWax MP80 hydrogenated castor oil | 2        | 2    | 2    | 2    | 2     | 2     |
| Vitamin E                              | 0        | 0    | 0    | 0    | 0.01  | 0.01  |
| Total                                  | 100      | 100  | 100  | 100  | 100   | 100   |

(*Id.* at Table 5.) Lesniak’s claims recite a “personal care composition selected from a sunscreen or a diaper cream,” with later claims also limiting the invention to sunscreens and diaper creams. (*Id.* at cls. 1, 12, 14, 19.)

Each of the Lesniak compositions contain large amounts of zinc oxide (up to 20%), which serves as a protective barrier to protect the skin from the sun or other irritants. (*See, e.g.*, Ex. 1003 at Tables 2-3, cl. 13 (“[W]herein the composition comprises *a sun-protective level of zinc oxide particles*”).) As both a POSA and the common consumer would have understood, zinc oxide is an active ingredient commonly found in sunscreens to prevent sun damage. (*Id.*; *see also* Ex. 2011 at ¶¶ 43-45; Ex. 2013; 21 C.F.R. 352 (FDA Sunscreen Monograph).) And in the case of diaper cream, any POSA or caregiver would have understood that zinc oxide is present in those products to prevent diaper rash. (Ex. 2011 at ¶ 45; Ex. 2003 (“Zinc

oxide topical cream is used to treat and prevent diaper rash. It is also used to protect skin from being irritated and wet caused by diaper use.”); Ex. 2004.)

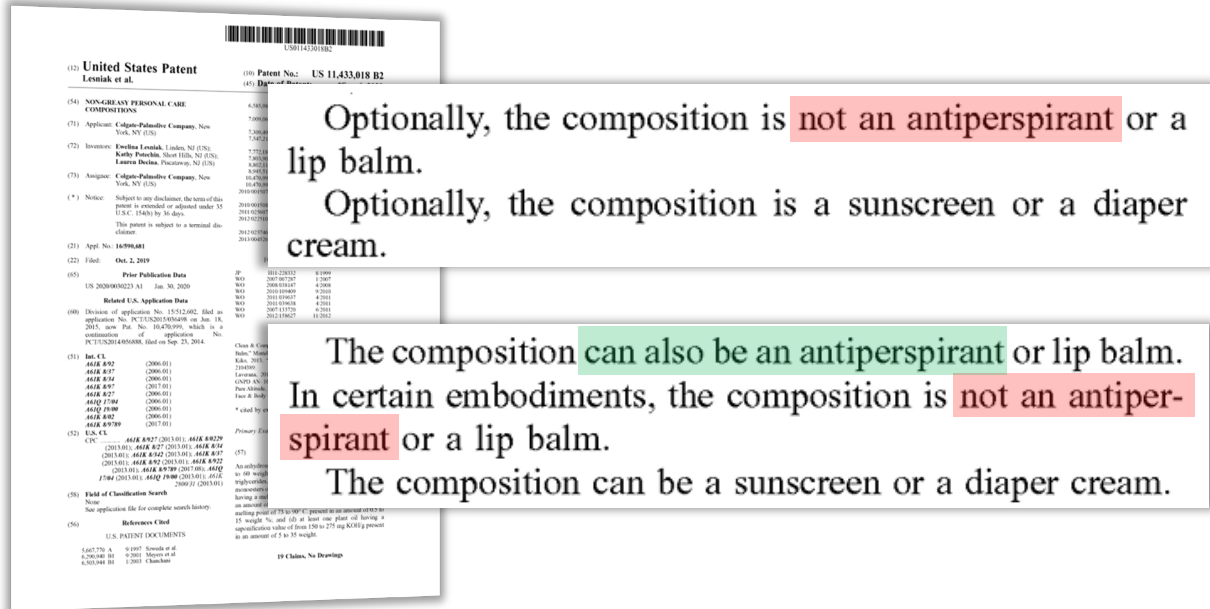
A POSA would have understood that zinc oxide, particularly in the high amounts present in Lesniak, is not commonly used or useful in deodorants. (Ex. 2011 at ¶ 46.) Petitioner’s Phinney reference confirms this, explaining “zinc oxide... [is] *very unreactive against perspiration odour.*” (Ex. 1004 at 2:33-36; *see also id.* at 3:20-21 (noting “the low activity of zinc oxide as a deodorant agent”).) And Petitioner’s expert could not identify a single deodorant that contains the 20% zinc oxide that Lesniak discloses. (Ex. 2012 at 66:21-67:1.)

Lesniak’s stated goals, specification, ingredients, and claims all show that a POSA would have viewed Lesniak as relevant to high zinc oxide concentration sunscreens or diaper cream compositions, not to deodorant sticks as required by the ’706 Patent claims. Lesniak does not mention a “deodorant stick” or “deodorant” even once. Petitioner’s Lesniak-based grounds thus do not invalidate claims 1-23. (Ex. 2011 at ¶¶ 42-47.)

## **2. *Any Alleged Disclosure of an “Antiperspirant” Dooms Petitioner’s Argument***

Acknowledging the lack of a “deodorant stick” disclosure in Lesniak, Petitioner argues that Lesniak’s throwaway sentence regarding an “antiperspirant” teaches the claim limitation. This argument lacks merit.

Lesniak uses the word “antiperspirant” three times, and in two of those times, Lesniak states the composition is “*not* an antiperspirant”:



(Ex. 1003 at 4:23-26, 10:27-29.) Lesniak further does not specify any form of antiperspirant, which can come in a variety of forms, including aerosol sprays, creams, liquids, and gels. These passing references to “antiperspirant” fail to convert Lesniak into something other than a reference about the embodied sunscreens and diaper creams. (Ex. 2011 at ¶ 49.)

Moreover, if a POSA would have considered these words at all, the term “antiperspirant,” to a POSA, means a composition containing aluminum, the

ingredient present in the only antiperspirant actives approved by the FDA.<sup>1</sup> *See* 37 C.F.R. 350. A POSA would have understood that the FDA regulates antiperspirants as drugs and regards deodorants as cosmetics. (*Id.* at ¶ 50.) A POSA would have further understood Lesniak’s disclosure of “antiperspirant” as requiring the use of an antiperspirant active, and the only antiperspirant actives approved by the FDA all contain aluminum. (*Id.*) Indeed, the FDA lists the 18 approved antiperspirant actives in its monograph “Antiperspirant Drug Products for Over-the-Counter Human Use,” and every one comprises aluminum:

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<sup>1</sup> Sensitive to this reality, Petitioner attempts to argue that Lesniak precludes the use of aluminum. (Petition at 20.) This is untrue. Lesniak defines the terms “natural composition” and “natural ingredients” to refer to “ingredients which are extracted from the earth....” (Ex. 1003 at 4:61-67.) Aluminum is necessarily included in this definition, as aluminum is “extracted from the earth,” and is one of the most abundant elements in the earth’s crust. (*See* Ex. 2011 at ¶ 51.)

- (a) Aluminum chloride up to 15 percent, calculated on the hexahydrate form, in an aqueous solution nonaerosol dosage form.
- (b) Aluminum chlorohydrate up to 25 percent.
- (c) Aluminum chlorohydrate polyethylene glycol up to 25 percent.
- (d) Aluminum chlorohydrate propylene glycol up to 25 percent.
- (e) Aluminum dichlorohydrate up to 25 percent.
- (f) Aluminum dichlorohydrate polyethylene glycol up to 25 percent.
- (g) Aluminum dichlorohydrate propylene glycol up to 25 percent.
- (h) Aluminum sesquichlorohydrate up to 25 percent.
- (i) Aluminum sesquichlorohydrate polyethylene glycol up to 25 percent.
- (j) Aluminum sesquichlorohydrate propylene glycol up to 25 percent.
- (k) Aluminum zirconium octachlorohydrate up to 20 percent.
- (l) Aluminum zirconium octachlorohydrate gly up to 20 percent.
- (m) Aluminum zirconium pentachlorohydrate up to 20 percent.
- (n) Aluminum zirconium pentachlorohydrate gly up to 20 percent.
- (o) Aluminum zirconium tetrachlorohydrate up to 20 percent.
- (p) Aluminum zirconium tetrachlorohydrate gly up to 20 percent.
- (q) Aluminum zirconium trichlorohydrate up to 20 percent.
- (r) Aluminum zirconium trichlorohydrate gly up to 20 percent.

21 C.F.R. 350.10.

Here, the FDA-approved antiperspirant actives inform the POSA's knowledge about the scope of Lesniak's disclosure. (Ex. 2011 at ¶ 52.) A POSA would have understood, based on both FDA requirements and as a matter of common knowledge in the field, that Lesniak's "antiperspirant" contains aluminum. (*Id.*) This is standard across the industry:



## WHAT IS AN ANTIPERSPIRANT?

Antiperspirants serve a different purpose compared to deodorants. Their main task is to minimize sweat production and keep you dry. While deodorants only target bacteria to prevent odor, antiperspirants go one step further by temporarily blocking the sweat glands. This is particularly useful for individuals who experience excessive sweating, often referred to as "hyperhidrosis," or for those who want extra protection during physical activity or warm weather.

The magic behind antiperspirants lies in their aluminum compounds, which dissolve into the moisture on your skin. Once dissolved, they form a temporary "plug" over the sweat glands, reducing the amount of sweat that reaches the surface of your skin. This, in turn, helps you stay dry and reduces the moisture that bacteria feed on, effectively reducing odor.

(Ex. 2014.)



## They offer different protection.

Antiperspirants and deodorants will both help to keep you fresh. The key difference is the aluminum in antiperspirants, which helps control the amount that you sweat.

(Ex. 2015.)



## What is the difference between an antiperspirant and a deodorant?

The short answer is the aluminum active ingredient\*. Simply put, antiperspirants have it, and deodorants don't. That's the difference...and if that's all you wanted to know—then you have your answer. But if you'd like to learn more, let's dive a little deeper so you can find the protection that's right for you.

(Ex. 2016.)

Furthermore, the most important difference between antiperspirant is actually one specific ingredient, aluminum. If that stick contains **aluminum**, the product is an antiperspirant. Aluminum is the sweat blocking active ingredient in antiperspirant products, which aims to control or prevent sweat entirely. Metallic salts and aluminum chloride are the active ingredients in antiperspirants. The aluminum in your antiperspirant is activated when you start to sweat. It then gets absorbed into your sweat glands, and forms a plug that blocks sweat from leaving your body. So even though your body is producing sweat it isn't able to reach the surface of the skin.



(Ex. 2017 (Petitioner's website).)

The POSA's understanding of "antiperspirant" to include aluminum is fatal to Petitioner's obviousness argument. Even if the Board accepts Petitioner's argument that Lesniak teaches a "deodorant stick" through its single-instance "antiperspirant" disclosure, Petitioner's claim mapping would fall short as to the aluminum-free requirement of the challenged claims. Put differently, if Lesniak discloses "a deodorant stick in the form of an antiperspirant stick" as Petitioner contends (and Lesniak does not), then that Lesniak stick contains aluminum. (*See* Petition at 19.)

Either way, the Lesniak-based grounds do not disclose each and every element of the claims.<sup>2</sup> (Ex. 2011 at ¶¶ 48-53.)

**3. *Lesniak’s Purported Disclosure of a Deodorant Stick is Non-Enabling.***

For yet an additional reason, Lesniak fails to render obvious the “deodorant stick” limitation: its disclosure is decidedly non-enabling. Petitioner contends “Lesniak discloses a deodorant stick in the form of an antiperspirant stick.” (Petition at 19.) But Lesniak cannot enable an antiperspirant stick, and certainly fails to enable a deodorant stick.

Lesniak never mentions an antiperspirant *stick*,<sup>3</sup> and of course never discloses a *deodorant stick*. (Ex. 2011 at ¶¶ 54-56.) The only “stick” formulation Lesniak expressly teaches is a sunscreen stick:

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<sup>2</sup> If Petitioner contends Lesniak’s sunscreen and diaper cream formulations do not need to be modified before serving as an antiperspirant or deodorant, and in that scenario, would be aluminum-free, that is wrong. As discussed above, a POSA would not have considered Lesniak’s 20% zinc oxide formulas to be an antiperspirant, much less the claimed “deodorant stick.” And Petitioner’s expert could not identify which of Lesniak’s formulations would work as a deodorant or form a deodorant stick. (See Ex. 2012 at 65:2-66:20.)

<sup>3</sup> At the time of the invention, antiperspirants and deodorants were available in different forms, including sprays, creams, liquids, and gels. (Ex. 2011 at ¶ 55; Ex. 1002 at ¶¶ 34, 37.)

| TABLE 7                                   |          |
|-------------------------------------------|----------|
| Sunscreen Stick Formulation               |          |
| Material                                  | Weight % |
| Caprylic/capric triglyceride              | 51       |
| Zinc oxide                                | 20       |
| Beeswax                                   | 13.5     |
| Sunflower seed oil                        | 7.4      |
| Sunflower seed wax                        | 5        |
| Hydrogenated castor oil (Castor Wax MP80) | 3        |
| Vitamin E Acetate                         | 0.1      |

(Ex. 1003 at Table 7; *see also* Ex. 2012 at 75:5-10 (Petitioner’s expert confirming that Table 7 “is the only one that contains the ingredients that Lesniak discloses as creating [a] stick”).

But Lesniak’s single *sunscreen* stick example does not rise to the level of an enabling disclosure of the ’706 Patent’s deodorant stick. For an alleged anticipatory reference to be enabling, that reference alone must “enable one of ordinary skill in the art to make the invention without undue experimentation.” *Bard Peripheral Vascular, Inc. v. W.L. Gore & Assoc., Inc.*, 670 F.3d 1171, 1184 (Fed. Cir. 2012) (quoting *Orion IP, LLC v. Hyundai Motor Am.*, 605 F.3d 967, 975 (Fed. Cir. 2010)). “To render a claim obvious, the prior art, taken as a whole, must enable a skilled artisan to make and use the claimed invention.” *Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1380 (Fed. Cir. 2021); *see also In re Kumar*, 418 F.3d 1361, 1368 (Fed. Cir. 2005). “In the absence of such other supporting evidence to enable a skilled artisan to make the claimed invention, a standalone § 103 reference must enable the portions of its disclosure being relied upon.” *Raytheon*, 999 F.3d at 1381.

Lesniak cannot satisfy these standards because its compositions are riddled with instability problems, and there is no indication that a POSA could have derived from Lesniak *any* stable cosmetic stick (including a sunscreen stick); there is certainly no indication that a POSA could have derived from Lesniak a stable *deodorant* stick. (Ex. 2011 at ¶ 57.)

Lesniak describes a test to assess “[t]he physical stability of each composition,” and presents the results of that testing in Table 2. (*Id.* at 11:7-26.) Lesniak explains that *only two* of eleven non-stick sunscreen compositions were physically stable when stored at 49°C and did not exhibit “separation”:

| TABLE 2                             |              |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------|------|------|------|------|------|------|------|------|------|------|
| Sunscreens.                         |              |      |      |      |      |      |      |      |      |      |      |
|                                     | Composition# |      |      |      |      |      |      |      |      |      |      |
|                                     | 1*           | 2*   | 3*   | 4*   | 5*   | 6*   | 7*   | 8    | 9*   | 10*  | 11   |
|                                     | Weight %     |      |      |      |      |      |      |      |      |      |      |
| Zinc Oxide                          | 20           | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   |
| Sunflower oil                       | 57           | 30   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 12.5 |
| Caprylic/Capric Triglyceride        | 5            | 35   | 55   | 53   | 53   | 54   | 54   | 53   | 53   | 50   | 52   |
| Beeswax                             | 13           | 15   | 15   | 17   | 17   | 15   | 15   | 15   | 15   | 15   | 13.5 |
| Shea butter                         | 5            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| CastorWax MP80                      | 0            | 0    | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 0    | 2    |
| hydrogenated castor oil             |              |      |      |      |      |      |      |      |      |      |      |
| Tapioca starch                      | 0            | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    |
| Cetyl Alcohol                       | 0            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 0    |
| Thickener silica                    | 0            | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    |
| Natural jelly                       | 0            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 5    | 0    |
| SP511                               |              |      |      |      |      |      |      |      |      |      |      |
| Total                               | 100          | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Freeze/thaw stability               | F/T          | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  |
|                                     | 3            | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
|                                     | Pass         | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass |
| High temp. stability (49° C.)       | Fail         | Fail | Fail | Fail | Fail | Fail | Fail | Pass | Fail | Fail | Pass |
| “Whitening” acceptability           | No           | No   | Yes  | Yes  | Yes  | No   | No   | Yes  | No   | No   | Yes  |
| Dispensing acceptability            | No           | No   | No   | No   | No   | No   | No   | Yes  | No   | No   | Yes  |
| Greasiness/after-feel acceptability | No           | No   | Yes  | Yes  | Yes  | Yes  | Yes  | Yes  | Yes  | No   | Yes  |

\*denotes comparative composition.

(*Id.* at Table 2; *see also id.* at 11:17-19 (explaining a “fail” in physical stability “indicat[es] separation into two bulk phases”). As to its only stick—the sunscreen

stick from Table 7—Lesniak is silent on stability. (*See id.* at Table 7; Ex. 2011 at ¶¶ 58-59.)

The instability of Lesniak's formulas is consistent with a POSA's understanding of the complex interactions involved in crystalline semisolids. (Ex. 2011 at ¶ 60.) As a POSA would have understood, Lesniak's structured compositions comprise a network of crystals that physically trap liquid in their interstices. (*Id.*) The texture, stability, and bulk properties of these compositions depend upon their microcrystal morphology—the size, shape, and strength of interaction between the crystals in the fractal network—which varies with the amount and type of liquid component(s) used as the carrier system. (*Id.*) A POSA would have recognized Lesniak utilizes a triglyceride-based carrier system. (*Id.*; Ex. 1003 at Tables 2-3, 5, 7.)

A POSA would have been aware of the morphological crystal changes that could result from alterations in structured compositions, such that even the slightest variation in ingredients of the carrier system or structurants could yield an unstable composition, and if in the form of a stick, an unusable stick. (*Id.* at ¶ 61.) Lesniak itself acknowledges this—its disclosure evidences the inventors' struggle to find stable compositions. (*E.g.*, Ex. 1003 at Table 2.) As the POSA would have known, physical stability upon storage is a widely-recognized requirement for cosmetic products, including deodorant and antiperspirant sticks. (Ex. 2011 at ¶ 61.)

Importantly, Lesniak reveals only *slight differences* in a composition can cause it to go from stable to unstable, exemplifying the fragility of these crystal-network-structured semisolids. (Ex. 2011 at ¶ 62; *see also* Ex. 1003 at 12:1-5.)

Comparing a few of Lesniak's Table 2 compositions is instructive:

| <b>Ingredient</b>                    | <b>Unstable<br/>Comp. 4</b> | <b>Unstable<br/>Comp. 5</b> | <b>Unstable<br/>Comp. 7</b> | <b>Stable<br/>Comp. 8</b> | <b>Stable<br/>Comp. 11</b> |
|--------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------|----------------------------|
| Zinc Oxide                           | 20                          | 20                          | 20                          | 20                        | 20                         |
| Sunflower Oil                        | 10                          | 10                          | 10                          | 10                        | 12.5                       |
| Caprylic /<br>Capric<br>Triglyceride | 53                          | 53                          | 54                          | 53                        | 52                         |
| Beeswax                              | 17                          | 17                          | 15                          | 15                        | 13.5                       |
| Castor Wax<br>MP80                   | 0                           | 0                           | 0                           | 2                         | 2                          |
| Tapioca<br>Starch                    | 0                           | 0                           | 1                           | 0                         | 0                          |
|                                      |                             |                             |                             |                           |                            |
| <b>Total</b>                         | <b>100</b>                  | <b>100</b>                  | <b>100</b>                  | <b>100</b>                | <b>100</b>                 |

(*See* Ex. 1003 at Table 2.)

Only Compositions 8 and 11 passed Lesniak's stability tests, though their formulations contain only slight deviations from comparative non-stable compositions. (Ex. 1003 at 12:1-5.) For example, the only difference between unstable Compositions 4 and 5, and stable Composition 8, is that 2% of beeswax was replaced by 2% castor wax. (*See* Ex. 2011 at ¶ 63.) Unstable Composition 7 also has nearly identical ingredients, except it includes an extra percent by weight of the triglyceride and 1% tapioca starch. A POSA would thus have understood from

Lesniak that very small changes to any of its compositions could yield an unstable and separated composition. (*Id.* at ¶¶ 63-65.)

In light of Lesniak’s self-conceded stability issues and failure to disclose a stable “stick” composition, Lesniak would not have enabled a POSA to create an operative, solid deodorant stick with the ingredients Lesniak discloses, much less the ’706 Patent’s sticks, without undue experimentation. (Ex. 2011 at ¶ 66.) This is “strong evidence” that the reference is non-enabling. *In re Kumar*, 418 F.3d at 1369 (“[I]f it were shown that the Rostoker product could not be produced by the Rostoker method, that would be relevant evidence concerning whether Rostoker rendered obvious the Kumar product.”); *cf. In re Donohue* 766 F.2d 531, 533 (Fed. Cir. 1985) (POSA’s inability to re-create compound based on reference would be “strong evidence” that the reference is non-enabling). In some cases, a reference’s “self-enablement (or lack thereof) is not only relevant to the enablement analysis... it is dispositive.” *Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1382 (Fed. Cir. 2021).

In sum, Lesniak does not teach a stable “deodorant stick” or a stable antiperspirant stick, and shows at least nine different sunscreen formulas with slight variations that are all unstable. Lesniak provides just one example *sunscreen* “stick” as to which stability is unknown. A POSA armed with Lesniak’s disclosure on the fragility of its crystal-network-structured compositions—which lacks guidance as to

how to formulate a stable deodorant or antiperspirant stick—would not have been able to make and use the claimed “deodorant stick.” (Ex. 2011 at ¶¶ 54-68.) None of Petitioner’s other references remedy this deficiency; Petitioner does not argue that they do.

Petitioner’s Lesniak-based grounds fail to invalidate claims 1-23 for this additional, independent reason.

**B. Petitioner Admits A POSA Would Have Had No Reason to Modify Lesniak.**  
*(Grounds 1-5: All Claims 1-23)*

Turning to Petitioner’s combinations, first, Petitioner does not identify any deficiencies of the (few) stable compositions of Lesniak that would have provided a POSA motivation to modify it, aside from what Petitioner gleans from hindsight. In fact Petitioner and its expert often argue *against* any modification of Lesniak, asserting a POSA “would have understood Lesniak’s formulations *to be complete deodorant sticks that did not require additional ingredients.*” (Petition at 20; *see also* Ex. 1002 at ¶ 76.) Petitioner’s expert doubled-down on the standalone sufficiency of Lesniak at her deposition. When asked whether “the formulations in Lesniak require a modification in order to be turned into a deodorant,” she answered: “No. They are deodorants.” (Ex. 2012 at 59:4-7.)

Yet Petitioner *also* contends that a POSA *would have* sought to modify Lesniak by adding and changing numerous different ingredients, from replacing or

supplementing its primary antimicrobial to using a new primary structurant as a base. (See Petition at 36-40.) These inconsistent arguments undermine the Petition, and in any event, completely reformulating Lesniak is unfounded—Petitioner does not explain why a POSA would have been motivated to reformulate Lesniak in any of these ways to make the '706 claimed sticks, nor how a POSA could have had a reasonable expectation of success in doing so. In fact, given the POSA's understanding of Lesniak's high zinc oxide concentrations and instability challenges, the POSA would have been dissuaded from even attempting to use Lesniak as a starting point or modifying Lesniak's formulations. (Ex. 2011 at ¶¶ 69-70.)

Patent Owner addresses in more detail below Petitioner's specific motivation-to-combine arguments, but each combination suffers from this threshold deficiency.

**C. A POSA Would Not Have Added Phinney's Magnesium Hydroxide to Lesniak or Had a Reasonable Expectation of Success in Doing So.**  
*(Ground 2: Claims 3, 14; Ground 3: Claim 4)*

Petitioner cannot show that a POSA would have been motivated to look to Phinney to completely reformulate Lesniak to include magnesium hydroxide as an antimicrobial. Petitioner contends "Lesniak teaches using zinc oxide (a known antimicrobial) and Phinney teaches using magnesium hydroxide in combination with zinc oxide improves antimicrobial properties," and thus "[a] POSA would have been motivated to incorporate" the two. (Petition at 24.) Alternatively, Petitioner argues "a POSA would have been motivated to replace the zinc oxide in Lesniak's

deodorant stick with magnesium hydroxide, as both were known to have been used as antimicrobials in natural deodorant sticks, but zinc oxide was thought to have lower efficacy in combatting odor.” (Petition at 36.) Both Petitioner’s primary and alternative theories are belied by Phinney itself.

*First*, Lesniak and Phinney describe entirely different uses for their metal oxides/hydroxides and a POSA would not have looked to combine their teachings on this topic. (Ex. 2011 at ¶¶ 72-73.) Lesniak includes zinc oxide 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. (See, *e.g.*, Ex. 1003 at cl. 13; *see also* Ex. 2003.) Lesniak does not use zinc oxide for odor control. As explained above, a POSA would have understood Lesniak’s formulas with high concentrations of zinc oxide to be unsuitable for use as an underarm deodorant or antiperspirant. (Ex. 2011 at ¶ 73; *see also* Ex. 1004 at 2:33-36 (“[Z]inc oxide... [is] very unreactive against perspiration odour.”), 3:20-21.). Thus, a POSA would not have been motivated to look at Phinney to modify Lesniak or incorporate any additional antimicrobial into Lesniak for “improvements to odor protection,” as odor protection was not a goal of Lesniak’s zinc oxide. (Ex. 2011 at ¶ 73; Petition at 24.)

*Second*, Petitioner cherry picks the single ingredient magnesium hydroxide from Phinney’s disclosure of magnesium hydroxide *combined with other*

*ingredients*. Phinney explains that to combat odor, its compositions combine (1) magnesium hydroxide, **and** (2) zinc *hydroxide*, **and** (3) potassium chloride and/or potassium sulfate. (Ex. 1004 at 8:7-31, cl. 1.) Phinney emphasizes the need for zinc *hydroxide*, not zinc *oxide*, stating that “[t]he zinc hydroxide typically lowers the pH of the magnesium hydroxide-perspiration odour-controlling formulation of the invention,” which “avoid[s] skin irritation.” (*Id.* at 5:31-33, 52-60.) Phinney further requires the “disinfection capacity” of a potassium and/or sulfate potassium chloride, explaining one of these ingredients is responsible “for destroying microorganisms associated with odour.” (*Id.* at 3:66-5:4, 5:1-5, 5:64-67; Ex. 2011 at ¶ 74.)

Thus, Phinney does *not* teach a combination of zinc oxide and magnesium hydroxide at all. Rather, Phinney utilizes a three- or four-part mixture of zinc *hydroxide*, magnesium hydroxide, *in combination with* potassium sulfate and/or chloride: “In respect of greater detail regarding the formulation, *magnesium oxide* and *zinc oxide* must have high reactivity and are *added to water along with potassium sulfate* and mixed until the magnesium oxide and zinc oxide are converted to their hydroxides....” (*Id.* at 8:22-41; Ex. 2011 at ¶ 74.)

Petitioner’s selection of magnesium hydroxide alone is unsupported by Phinney’s disclosure and is further evidence of hindsight bias. (Ex. 2011 at ¶ 74.) Petitioner’s expert acknowledges that Phinney does not disclose any deodorant composition containing magnesium hydroxide without zinc hydroxide *and* the

separate ingredient(s)—potassium sulfate and/or chloride—as the disinfecting agent. (Ex. 2012 at 89:4-10 (Q: “And so none of these compositions that are disclosed in Phinney contain magnesium hydroxide alone without the other two elements that we’ve discussed, right?” A: “No, because I guess his invention was the -- the actual combination that he was looking at.”))

*Third*, Petitioner glosses over the conversion of zinc oxide to zinc hydroxide required by Phinney. Phinney teaches its metal oxides must be converted to their hydroxides by mixing with water; otherwise “skin irritation will occur.” (Ex. 1004 at 8:40-41, 4:48-51.) Phinney’s compositions are, on average, 20% by weight water, whereas Lesniak’s zinc oxide compositions are anhydrous. Petitioner ignores this fundamental difference, and fails to address that a POSA would have needed to add a significant amount of water to the Lesniak compositions to convert Lesniak’s zinc oxide into zinc hydroxide, as required by Phinney’s teachings, which would have fundamentally altered the Lesniak-combination composition to the point that it might not even form a stick at all. (Ex. 2011 at ¶ 75.) Phinney suggests combining zinc oxide and magnesium oxide, which are then both hydrated in a slurry to form zinc hydroxide and magnesium hydroxide. (Ex. 1004 at 8:22-26.) Were a POSA to add Phinney’s magnesium oxide to the zinc oxide in Lesniak, neither would be converted to hydroxide in Lesniak’s anhydrous composition. (Ex. 2011 at ¶ 75.)

*Fourth*, Petitioner does not rectify the vast difference in the amounts of the metal oxides/hydroxides in Lesniak and Phinney. A POSA would have understood Lesniak's upwards of 20% zinc oxide compositions to be far from the 0.5-1.5% of zinc hydroxide used in Phinney. (*Id.* at ¶ 76; *see also* Ex. 2012 at 84:14-16 (Petitioner's expert testifying in agreement that Phinney's zinc oxide is "much lower" than Lesniak's).) Moreover, Phinney requires magnesium hydroxide to be substantially in excess of zinc hydroxide to be effective in the deodorant compositions. (Ex. 1004 at 8:42-43.) As Petitioner's expert confirmed, "Phinney teaches [a POSA] that you should have *more* magnesium hydroxide than zinc hydroxide," and in fact, "it should be a ratio of 3 to 1." (Ex. 2012 at 83:20-84:8; Ex. 1004 at 8:42-43; Ex. 2011 at ¶ \_\_.) Petitioner's alleged motivations to combine do not consider the incompatibility of Lesniak and Phinney whatsoever.

Given their disparate teachings, which disclose two very different types of cosmetic systems (Lesniak anhydrous, triglyceride-based; Phinney water/polyol based), a POSA would not have looked to Phinney to modify Lesniak, and would not have been motivated to pluck magnesium hydroxide out of Phinney's multi-ingredient teachings to add it to the high zinc-oxide concentration Lesniak compositions. (Ex. 2011 at ¶ 77.)

Nor would a POSA have had a reasonable expectation of success in any such modification. Indeed, as explained above, Lesniak teaches that its triglyceride-

carried formulations are delicate, with even the slightest changes yielding unstable results. (*Id.* at ¶ 78.) A POSA would have understood and appreciated the instability of the formulations disclosed in Lesniak, and thus would not have had a reasonable expectation of success in reformulating Lesniak to add magnesium hydroxide, at either the amount specified in Phinney or the scaled-up amount required to maintain Phinney’s “effective” 3:1 ratio of magnesium hydroxide to zinc hydroxide. (*Id.*) And a POSA certainly would not have had a reasonable expectation of success in a reformulation comprising not just magnesium hydroxide, but also the requisite amount of water to turn Lesniak’s 20% zinc oxide into zinc hydroxide, as required by Phinney. (*Id.*)

Further, a POSA would have understood that Phinney’s deodorant formulations comprise water/propylene glycol carrier systems structured by sodium stearate, which a POSA would have appreciated is different than the anhydrous, triglyceride-based carrier systems relied on in Lesniak. (*Id.* at ¶ 79.) A POSA would have known the fundamental differences between Lesniak’s and Phinney’s technologies, in terms of their carriers, structurant(s), and crystal network, and as such, would not have had a reasonable expectation of success in combining their teachings. (*Id.*)

For all of these reasons, Petitioner does not articulate a rational motivation to combine Lesniak and Phinney with any reasonable expectation of success.

**D. The Lesniak and Bianchi Combinations Do Not Support a *Prima Facie* Case of Obviousness  
(Grounds 4-5: All Claims)**

The combinations of Lesniak with Bianchi-518 (Ground 4) and Bianchi-254 (Ground 5) are improper and do not support a *prima facie* case of obviousness. As discussed, Lesniak discloses anhydrous, natural compositions and touts a desire “to formulate such compositions from all-natural ingredients (i.e. ‘100% natural’ compositions),” “which are extracted from the earth or sea, derived from plants, or synthesized by other organisms.” (Ex. 1003 at 4:61-64, 5:29-31.) In contrast, the antiperspirant compositions of Bianchi-518 require 30-50% of volatile silicone, which is not a natural ingredient. (Ex. 1006 at 1:56, 2:14, 4:9-12.) Bianchi-254 requires similar amounts of volatile silicone. (Ex. 1008 at [0042].) The POSA would not have been motivated to consider the teachings of Bianchi-518 and Bianchi-254 in combination with Lesniak, as the Bianchi compositions require large amounts of non-natural ingredients (volatile silicones), and using such non-natural ingredients would defeat the core objective of Lesniak to provide natural compositions. *See In re Fritch*, 972 F.2d 1260, 1265 (Fed. Cir. 1992); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984). (Ex. 2011 at ¶ 81.)

**E. Petitioner’s References Do Not Disclose or Render Obvious the Hardness Limitation.  
(Ground 4: Claim 8)**

Petitioner also has not shown that its Lesniak combination discloses the stick hardness range “from about 70 mm\*10 to about 140 mm\*10, as measured by penetration with [a 50-g total force] ASTM D-1321 needle,” required by claim 8.

**1. *Neither Lesniak nor Bianchi-518 Disclose a Stick of the Proper Hardness.***

Petitioner does not identify a *single reference* that discloses or even suggests the hardness range in claim 8. Petitioner admits its key reference Lesniak “does not expressly teach” the hardness limitation. (Petition at 30.) Lesniak states its stick embodiments “can have a hardness of “300 to 550 g,” as measured using a texture analyzer, with its only formulated stick having a desired hardness of 432 g. (Ex. 1003 at 9:60-61, 15:41-42.) Neither Petitioner nor its expert attempt to convert this hardness to the metric claimed in the ’706 Patent, and Petitioner’s expert cannot say whether Lesniak’s range is too soft, too hard, or overlapping at all with the ’706 Patent. (See Ex. 2012 at 76:21-78:6.)

Petitioner thus contends a POSA would have been motivated to combine Lesniak with Bianchi-518, which allegedly discloses the claimed hardness range. (Petition at 30.) Not so. Petitioner fails to show *prima facie* obviousness for the reasons discussed above, but further, Petitioner’s argument is premised on a false equivalency between Bianchi-518’s hardness disclosure and that claimed in the ’706 Patent. In fact, the Bianchi hardness test uses a needle and shaft with *double the weight* of the needle and shaft used in the ’706 Patent (100 grams vs. 50 grams), and

thus its so-called same or similar hardness ranges reflect that the Bianchi compositions are actually *significantly harder* than those claimed in the '706 Patent (*i.e.*, the '706 method would require twice the weight of the penetration needle assembly to yield similar penetration depths as disclosed by Bianchi). (Ex. 2011 at ¶¶ 82-86.) Petitioner's failure to understand this testing methodology difference is fatal to its case on the hardness claim.

Bianchi-518 teaches a hardness range of "7.0 to about 14.0 mm" based on penetration results using the ASTM D-1321 testing method, which utilizes 100 grams of weight. (Ex. 1006 at 2:58, 6:25-28; Ex. 2011 at ¶ 87; Ex. 2018 at 5-6 ("Place a 50-g weight above the penetrometer needle, making a *total load of 100 ± 0.015 g* for the needle and all attachments.")) This ASTM D-1321 hardness penetration method using 100 grams of total load was readily known to a POSA. (Ex. 2011 at ¶¶ 87-89.)

The '706 Patent uses a different hardness testing method, explaining that its invention exhibits a hardness in the range of "70 mm\*10 to about 140 mm\*10," as measured using an ASTM D-1321 penetration needle in a test similar to ASTM D-1321, but with a significant difference: "the total weight of the shaft and needle is 50±0.2 grams when the shaft is in free fall." ('706 at 23:1-2.) The '706 Patent's method does not include the extra "50-g weight" added to the needle in the standard

ASTM D-1321 test utilized by Bianchi-518 and therefore does not utilize a 100-gram load as required by the hardness test of Bianchi-518. (Ex. 2011 at ¶ 90.)

In other words, Bianchi-518's hardness reflects its antiperspirant stick's response to 100 grams of shaft and needle weight, whereas the '706 Patent's hardness values reflect the claimed deodorant stick's response to 50 grams of shaft and needle weight. (*Id.* at ¶ 91.) Thus, Bianchi-518's hardness values are based on the penetration depth of a needle assembly having *twice the weight* of the needle assembly utilized in the '706 Patent. (*Id.*) If the Bianchi compositions were tested using the method of the '706 Patent (*i.e.*, with a 50-g total needle assembly, as opposed to a 100-g one), the 50-g assembly would have a much shorter penetration distance than an assembly twice its weight. (*Id.*)

Thus, while Petitioner attempts to paint the Bianchi-518 hardness range as overlapping with the '706 Patent hardness range, they are in fact significantly different—they reflect very similar penetration values for very different load weights. A POSA would have understood that Bianchi-518 reported a 100-g weight needle assembly penetrated to the same or similar distance as a 50-g weight needle assembly was reported to penetrate in the '706 claimed compositions. Dr. Lochhead explains that while there are no formulas to convert the results of one of these methods to the other, a POSA would have expected that the hardness range disclosed in Bianchi-

518 actually indicates *significantly harder* sticks than that claimed in the '706 Patent. (*Id.* at ¶ 92.)

In short, Petitioner has not cited any reference disclosing the hardness range as measured by the test defined in the '706 Patent, and thus no reference with the hardness range specified in claim 8.

**2. *Even If the Claimed Hardness Range Is Disclosed (It Is Not), Petitioner's Argument Still Fails.***

Moreover, even if Bianchi-518's hardness range was relevant to the hardness range claimed in claim 8—which it is not—Petitioner's argument still falls short for several additional reasons.

*First*, Bianchi-518 expressly ties its hardness disclosure to the specific inventive antiperspirant compositions described in the reference, which contain aluminum—an ingredient the '706 Patent claims expressly exclude. ('706 at cls. 1, 16, 20; Ex. 2011 at ¶ 95.) Bianchi-518 discloses Compositions A-U, with their ingredients expressed in weight percentages. As highlighted, each of Bianchi-518's compositions contain one or more aluminum salt or complex:

| Ingredient                 | A     | B    | C    | D     | E     | F     | G  | H     |
|----------------------------|-------|------|------|-------|-------|-------|----|-------|
| Cyclomethicone DC245       | 40.3  | 38.0 | 37   | 41.32 | 41.57 | 36.49 | 39 | 36    |
| Phenyl Trimethicone DC556  |       |      | 4    |       |       | 2.0   |    | 2     |
| Paraffin wax SF1642        | 16.92 | 9.25 | 18   | 16.05 | 16.05 | 9.37  | 17 | 12.08 |
| Silicone wax               |       | 7.75 |      | 1     |       | 3.22  |    |       |
| Castorwax                  | 6.85  | 10.0 | 3    | 5.98  | 5.98  | 10.13 | 7  | 10.98 |
| PEG-8 Distearate           | 2.85  |      |      | 4.5   | 4.2   | 4.63  |    | 4.94  |
| Hydrogenated Vegetable oil |       |      |      |       |       |       | 1  |       |
| Finsolv TN                 | 1.55  |      |      |       | 1     |       | 2  |       |
| PPG-14 Butyl ether         | 10.03 | 12.5 | 12.5 | 10.4  | 10.4  | 12.66 | 10 | 12.5  |
| AZG-370                    | 20.00 | 22.0 | 22.0 | 20.0  | 20    | 20    | 22 | 20    |
| Talc                       |       |      | 1.5  |       |       |       |    |       |
| Fragrance                  | 1.50  | 0.5  | 2.0  | 0.75  | 0.8   | 1.5   | 2  | 1.5   |

| Ingredient           | I     | J     | K     | L     | M     | N     |
|----------------------|-------|-------|-------|-------|-------|-------|
| Cyclomethicone DC245 | 41.05 | 41.32 | 38.85 | 36.8  | 39.10 | 37.07 |
| Paraffin wax         | 16.92 | 16.05 | 16.01 | 16.92 | 15.19 | 16.05 |
| Castorwax            | 6.85  | 5.98  | 6.48  | 6.85  | 5.66  | 5.98  |
| PPG-14 Butyl ether   | 10.03 | 10.40 | 9.49  | 10.03 | 9.84  | 10.40 |
| Finsolv TN           | 1.55  | —     | 1.47  | 1.55  | —     | —     |
| PEG-8 Distearate     | 2.85  | 4.50  | 2.70  | 2.85  | 4.26  | 4.50  |
| SF 1642              | —     | 1.00  | —     | —     | 0.95  | 1.00  |
| AZG-370              | 20.00 | 20.0  | —     | —     | —     | —     |
| Q 5-7167             | —     | —     | 24.00 | 24.00 | 24.00 | 24.00 |
| Fragrance            | 0.75  | 0.75  | 1.00  | 1.00  | 1.00  | 1.00  |

| Ingredient      | O     | P     | Q     | R     |
|-----------------|-------|-------|-------|-------|
| DC 345          | 38.85 | 36.80 | 39.10 | 37.07 |
| Paraffin wax    | 16.01 | 16.92 | 15.19 | 16.05 |
| Castorwax       | 6.48  | 6.85  | 5.66  | 5.98  |
| Fluid AP        | 9.49  | 10.03 | 9.84  | 10.40 |
| Finsolv TN      | 1.47  | 1.55  | —     | —     |
| Estol EO4DS3724 | 2.70  | 2.85  | 4.26  | 4.50  |
| SF 1642         | —     | —     | 0.95  | 1.00  |
| AZG-370         | —     | —     | —     | —     |
| Q 5-7167        | 12.00 | 12.00 | 12.00 | 12.00 |
| AZG 6313-15     | 12.00 | 12.00 | 12.00 | 12.00 |
| Fragrance       | 1.00  | 1.00  | 1.00  | 1.00  |

| Ingredient                 | S    | T    | U    |
|----------------------------|------|------|------|
| CYCLOMETHICONE DC 245      | 34.8 | 37.8 | 36.7 |
| PHENYL TRIMETHICONE DC556  | —    | —    | —    |
| Paraffin wax               | 8.5  | 9.25 | 9.05 |
| SF 1642 Silicone Wax       | 1.5  | 1.5  | 1    |
| Castor wax                 | 10.5 | 6.85 | 8    |
| PEG-8 Distearate           | 5.5  | 9.25 | 5    |
| Hydrogenated Vegetable Oil | —    | —    | —    |
| Finsolv TN                 | —    | —    | —    |
| PPG-14 Butyl Ether         | 18.5 | 16   | 16.5 |
| AZG-370                    | 20   | 20   | —    |
| W ZR3OB DM CP5**           | —    | —    | 23   |
| Talc                       | —    | —    | —    |
| Fragrance                  | 0.7  | 0.7  | 0.75 |

\*\*Aluminum Zirconium Trichlorohydrate-Gly

(Ex. 1006 at 3:45-67, 5:15-6:14; Ex. 2007 at 1:17-18, 7:15, 9:18-21.) Petitioner's expert agrees that all of these compositions contain aluminum. (Ex. 2012 at 99:6-101:17.) The Petition is silent on Bianchi-518's use of aluminum, and neither Petitioner nor its expert explain how a POSA could have achieved the hardness range taught for Bianchi-518's aluminum-based compositions in an aluminum-free deodorant composition.

*Second*, Petitioner fails to explain why a POSA would have been motivated to modify Lesniak's hardness in the first place, given Petitioner's assertion that it is a "complete deodorant stick[]" that did not require additional ingredients or modifications. (See Petition at 20). Petitioner's expert concedes Lesniak does not

identify any deficiencies with the hardness of its compositions such that a POSA would have sought to modify it. (*See* Ex. 2012 at 76:2-7 (Q: “And Lesniak doesn’t indicate anywhere that this hardness is insufficient, right?” A: “I believe he doesn’t.” Q: “He doesn’t say that the sticks are too soft or too hard?” A: “I believe not....”); *see also* Ex. 1002 ¶ 76.) And Lesniak’s known stability issues would have further dissuaded a POSA from modifying it. (Ex. 2011 at ¶ 96.) Beyond hindsight reconstruction, Petitioner provides no basis for its obviousness argument.

*Third*, given the POSA’s understanding of the instability of Lesniak’s compositions, a POSA would not have been able to arrive at the claimed hardness through routine optimization of Lesniak, nor would the POSA have had a reasonable expectation of success in modifying Lesniak to achieve Bianchi-518’s hardness (which, again, does not overlap with the ’706 Patent’s claimed range). “[K]nowledge of the goal does not render its achievement obvious.” *Abbott Laby’s v. Sandoz, Inc.*, 544 F.3d 1341, 1352 (Fed. Cir. 2008); *see also Procter & Gamble Co. v. McNeil-PPC, Inc.*, 615 F. Supp. 2d 832, 849-50 (W.D. Wisc. 2009). And here, even if the Board were to ignore the falsity of Petitioner’s hardness range comparisons between Bianchi-518 and the ’706 claimed range, achieving the claimed hardness range would not have been obvious to a POSA. Neither Petitioner nor its expert tried to convert the hardness range disclosed in Lesniak to the claimed

hardness metric, so neither Petitioner nor its expert can even provide a starting point for the POSA as to Lesniak's hardness. (*See* Ex. 2011 at ¶¶ 97-98.)

Moreover, as discussed above, even the slightest change in Lesniak's ingredients yields unstable and unusable compositions. (*Id.* at ¶ 99.) And, in view of Lesniak's Table 2, a POSA would have understood that an increase in structurant content, for example, would not predictably provide physical stability to the formulation, and as such would not have affected Lesniak's overall hardness in the easy and expected way Petitioner contends. (*See* Petition at 29-33; Ex. 2011 at ¶¶ 64-65, 99; *see also* Ex. 1008 at Tables 1, 6 (showing even small changes in ingredients yield different hardnesses).) Instead, a POSA would not have had a reasonable expectation of success in modifying Lesniak to achieve the claimed hardness in a stable composition. (Ex. 2011 at ¶¶ 99-100.)

These additional failings further highlight Petitioner's deficient challenge to the hardness limitation, which already loses at the outset for want of a single reference that teaches the hardness limitation of all claims.

**F. A POSA Would Not Have Added Baking Soda to the Ground-1 Combination as an Antimicrobial**  
**(Ground 3: Claim 4)**

Petitioner's Lesniak-based grounds have even more deficiencies on the baking soda limitation. Claim 4 lists "baking soda" as one of numerous possible "additional antimicrobial[s]" that must be "different from the primary antimicrobial" of claim 1.

Petitioner claims a POSA would have utilized Lamb's baking soda as an antimicrobial in Lesniak, despite it being known "*baking soda could cause skin irritation* for some users." (Petition at 27-29.)

Petitioner identifies the problem with its own argument and fails to overcome it. Petitioner's rationale for combining Lesniak and Phinney with Lamb for claim 4 is directly contrary to the knowledge and motivations Petitioner claims the POSA would have had elsewhere, namely that baking soda is a known irritant and a POSA would have been motivated to remove it from deodorants. (*See, e.g.*, Petition at 50-52 (arguing in support of its Ground 7 Native combination that a POSA "would have known that deodorants containing baking soda... could cause skin irritation for some users" and would thus have been motivated to replace it in Native's formulation).)

Petitioner makes no effort to reconcile its pro-baking soda argument with its anti-baking soda argument. Instead, Petitioner and its expert claim that a POSA would have both been motivated to add baking soda to Lesniak because it creates an "excellent" and "valuable" deodorant, yet remove baking soda because of "associated skin irritation." (*See id.* at 27-28.) Petitioner cannot have it both ways.

Petitioner also makes the crippling admission that "A POSA would have understood Lesniak's formulations to be *complete deodorant sticks that did not require additional ingredients such as baking soda*." (Petition at 21.) If that was the POSA's understanding, as Petitioner and its expert contend, then the POSA

would not have been motivated to add baking soda as an additional microbial to Lesniak. (Ex. 2011 at ¶¶ 101-104.) And of course, even without taking Petitioner’s word for it, a POSA would not have been motivated or successful in adding baking soda to Lesniak due to the instability issues identified above. (*Id.*)

Thus, Petitioner’s Lesniak-based grounds fail as to claim 4.

**G. Petitioner’s Ground-5 Combination Suffers from Additional Defects Relating to the Alleged Presence of Stearyl Alcohol, Triethyl Citrate, and A Starch.**  
**(Ground 5: Claims 16-23)**

Petitioner has at least three more issues relating to its Ground-5 combination.

**1. *Petitioner Does Not Explain Why or How a POSA Would Have Reformulated Lesniak to Include Bianchi-254’s Primary Structurant.***

Claims 16-23 each require a deodorant stick with “stearyl alcohol” as the “primary structurant,” which Petitioner contends is disclosed by Bianchi-254 in Petitioner’s four-reference combination of Lesniak, Phinney, Bianchi-254, and Anconi. (Petition at 33-37.) Petitioner claims that “[w]hile Lesniak describes using ‘fatty alcohols’ in its deodorant compositions, it does not expressly state stearyl alcohol is useful as the primary structurant.” (*Id.* at 34.) So Petitioner adds Bianchi-254, arguing it “highlights stearyl alcohol as a ‘widely used’ structurant ‘of particular interest’ for deodorants, and provides examples where it is successfully used as the primary structurant.” (*Id.*)

But as discussed above, Petitioner admits the POSA would not have been motivated to reformulate Lesniak, and instead understood Lesniak as “a complete deodorant stick” without the need for additional ingredients or modification. (*See, e.g., id.* at 20-21.) Moreover, as explained above, a POSA would not have been motivated to combine Bianchi-254 with Lesniak’s “natural” compositions, as incorporating high levels of non-natural ingredients like volatile silicones would defeat the core objective of Lesniak. (Ex. 2011 at ¶¶ 107-108.)

The POSA also would not have had a reasonable expectation of success in implementing the change contemplated by Petitioner in its Ground-5 arguments—namely, a complete reformulation of Lesniak to make stearyl alcohol “the primary structurant” that is “present in the greatest amount” of the stick. (*See* Petition at 37; Ex. 2011 at ¶ 108.) Lesniak describes fragile compositions that can become unstable with even the smallest changes in ingredients, let alone a change in a key ingredient like the “primary” structurant. (Ex. 2011 at ¶ 108.) Petitioner cannot show a POSA would have had a reasonable expectation of success in making such a change for the same reasons discussed above regarding Lesniak’s stability and the fundamental differences between the compositions described in Lesniak and that of the Bianchi references.

**2. *A POSA Would Not Have Been Motivated to Combine Anconi and Lesniak and Would Not Have Had a Reasonable Expectation of Success.***

Claims 16-23 also require that the deodorant stick include “triethyl citrate,” which Petitioner contends is disclosed by Anconi in Petitioner’s four-reference combination. (Petition at 33-37.) But like the fundamental differences between Lesniak and Bianchi’s compositions, Lesniak and Anconi are similarly directed to different stick technologies, with Lesniak employing an anhydrous, wax-structured, triglyceride-based system, while Anconi discloses an aqueous propylene glycol-and/or alcohol-based mixture solidified, for example, by sodium stearate. (Ex. 1057 at [0049]; Ex. 2011 at ¶ 109.) A POSA would not have been motivated to reformulate Lesniak in the first place, let alone reformulate Lesniak in accordance with the teachings of an entirely different stick technology. (Ex. 2011 at ¶ 109.)

Just as Lesniak has known stability issues, Anconi warns that “[s]ticks and solids are really complex chemical systems requiring a balance of ingredients designed to make the most of several performance factors including payout, slip or lubricity, chemical stability, softening temperature, and of course, efficacy.” (Ex. 1057 at [0052].) With this knowledge, a POSA would have been dissuaded from seeking to modify Lesniak’s few stable compositions, and also would not have had a reasonable expectation of success in any such modification. (Ex. 2011 at ¶ 110.)

**3. *Lesniak Does Not Disclose a Stable Stick Comprising the Starch.***

Claims 16-19 also require that the deodorant stick include “a starch,” which Petitioner contends is disclosed by Lesniak, which purportedly “describes formulating a deodorant stick with a starch.” (Petition at 37.) But Petitioner ignores Lesniak’s teachings in Table 2 regarding the instability of its compositions. The only composition Lesniak discloses containing a starch (tapioca starch) is sunscreen Composition 7, which failed across the board on stability, “whitening” acceptability, and dispensing acceptability:

| TABLE 2                                |              |      |      |      |      |      |      |      |      |      |      |
|----------------------------------------|--------------|------|------|------|------|------|------|------|------|------|------|
| Sunscreens.                            |              |      |      |      |      |      |      |      |      |      |      |
|                                        | Composition# |      |      |      |      |      |      |      |      |      |      |
|                                        | 1*           | 2*   | 3*   | 4*   | 5*   | 6*   | 7*   | 8    | 9*   | 10*  | 11   |
|                                        | Weight %     |      |      |      |      |      |      |      |      |      |      |
| Zinc Oxide                             | 20           | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   |
| Sunflower oil                          | 57           | 30   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 12.5 |
| Caprylic/Capric Triglyceride           | 5            | 35   | 55   | 53   | 53   | 54   | 54   | 53   | 53   | 50   | 52   |
| Beeswax                                | 13           | 15   | 15   | 17   | 17   | 15   | 15   | 15   | 15   | 15   | 13.5 |
| Shea butter                            | 5            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| CastorWax MP80 hydrogenated castor oil | 0            | 0    | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 0    | 2    |
| Tapioca starch                         | 0            | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    |
| Cetyl Alcohol                          | 0            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 0    |
| Thickener silica                       | 0            | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    |
| Natural jelly SP511                    | 0            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 5    | 0    |
| Total                                  | 100          | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Freeze/thaw stability                  | F/T          | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  | F/T  |
|                                        | 3            | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
|                                        | Pass         | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass |
| High temp. stability (49° C.)          | Fail         | Fail | Fail | Fail | Fail | Fail | Fail | Pass | Fail | Fail | Pass |
| “Whitening” acceptability              | No           | No   | Yes  | Yes  | Yes  | No   | No   | Yes  | No   | No   | Yes  |
| Dispensing acceptability               | No           | No   | No   | No   | No   | No   | No   | Yes  | No   | No   | Yes  |
| Greasiness/after-feel acceptability    | No           | No   | Yes  | Yes  | Yes  | Yes  | Yes  | Yes  | Yes  | No   | Yes  |

\*denotes comparative composition.

(Ex. 1003 at Table 2.) Petitioner and its expert are silent on the instability of Lesniak’s only composition containing tapioca starch. (See Petition at 36; Ex. 1002 at ¶ 94.) A POSA would have understood that Lesniak does not disclose or enable stable deodorant sticks containing tapioca starch, including for the reasons discussed above. (Ex. 2011 at ¶¶ 111-12.) Petitioner also makes a fleeting reference to arrowroot power, but none of the references disclosed in Petitioner’s proposed Lesniak combination mention arrowroot powder. (See Petition at 37.)

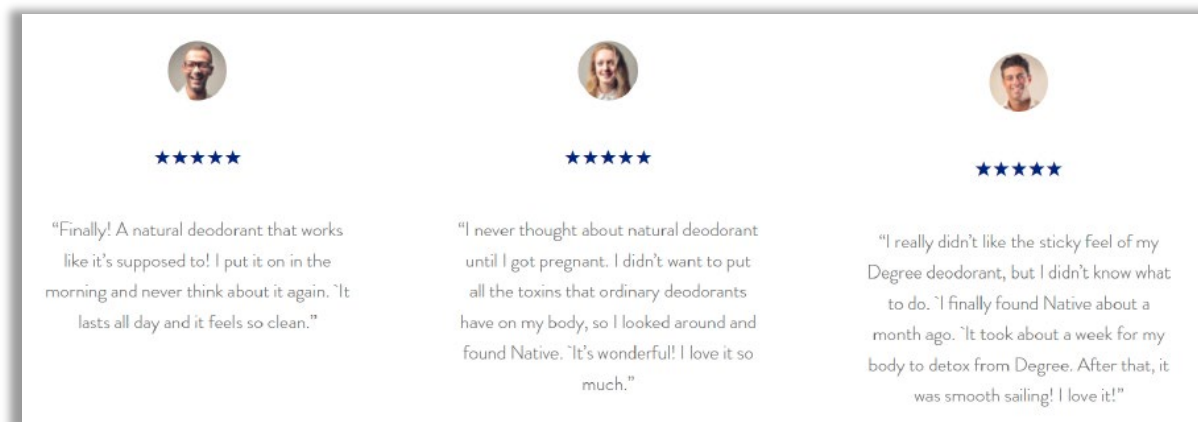
Petitioner's Lesniak-based grounds directed to claims 16-23 fall short for all of these additional reasons.

## **V. PETITIONER'S NATIVE-BASED GROUNDS ARE SIMILARLY UNCONVINCING**

Petitioner's Native-based grounds also do not render obvious the challenged claims.

### **A. A POSA Would Have Had No Reason to Modify Native (Grounds 6-8: All Claims)**

Petitioner provides no legitimate reason for the POSA to modify Native at all. According to Petitioner, Native lists the ingredients of a commercially available deodorant stick that was "a known leader in the field" and that had "reached internet fame" by 2017. (Petition at 40; Ex. 1010.) Petitioner's Native exhibit contains uniformly positive reviews from customers:



(Ex. 1007 at 8.) Petitioner's expert agrees there is nothing in the reference that indicates a problem with the Native stick. (Ex. 2012 at 117:15-118:14.). With this

level of consumer acceptance and praise, and no identified issues or concerns, there was simply no reason for a POSA to have sought to modify Native. (Ex. 2011 at ¶ 114.) Petitioner’s attempts to manufacture so-called motivations are based on nothing more than improper hindsight and must be rejected. *See TQ Delta, LLC v. CISCO Systems, Inc.*, 942 F.3d 1352, 1361 (Fed. Cir. 2019) (cautioning against “allowing the challenger to use the challenged patent as a roadmap to reconstruct the claimed invention using disparate elements from the prior art—i.e., the impermissible *ex post* reasoning and hindsight bias that *KSR* warned against.”). In addition to this foundational defect of all of Petitioner’s Native grounds, each combination has additional flaws, discussed in turn below.

**B. The Combination of Native and Bianchi-254 Does Not Support a Case of *Prima Facie* Obviousness  
(Grounds 6-8: All Claims)**

As with Petitioner’s proposed combination of Lesniak and the Bianchi references, the combination of Native and Bianchi-254 is also improper and does not support a *prima facie* case of obviousness for the same reasons. Native advertises and markets to consumers an aluminum-free deodorant product containing natural ingredients. (Ex. 1007.) In contrast, Bianchi-254 discloses compositions comprising, together, up to 50% or more of a volatile silicone and aluminum-containing antiperspirant active. (*See* Ex. 1008 at [0042], Tables 1, 5; Ex. 2012 at 108:10-14.) The POSA would not have been motivated to combine Bianchi-254

with Native, as Bianchi-254's prominent use of non-natural ingredients and aluminum would defeat the core objective of Native to provide aluminum-free, natural deodorant products. *See In re Fritch*, 972 F.2d at 1265; *In re Gordon*, 733 F.2d at 902. (Ex. 2011 at ¶ 116.)

**C. A POSA Would Not Have Implemented Bianchi-254's Weight Percentages With Any Success.  
(Grounds 6-8: All Claims 1-23)**

An additional issue with the Native combinations lies with implementing Bianchi-254's weight percentages. Specifically, Petitioner admits Native "does not expressly teach the percentage of each ingredient used" and claimed in the '706 Patent, but contends Bianchi-254 "establish[es] that the claimed concentrations of ingredients were conventional." (Petition at 46.) This argument misses the mark.

A POSA seeking to develop a natural deodorant stick would not have been motivated to implement Bianchi-254's weight percentages; it describes and claims antiperspirant formulations containing about 50% or more by weight of aluminum and silicone. (Ex. 2011 at ¶¶ 117-18.) For example, Bianchi-254's antiperspirant compositions contain, *e.g.*, "from 20 to 40 wt. %" of a volatile silicone, and silicone is the ingredient often present in the greatest amount across Bianchi-254's compositions. (Ex. 1008 at [0042], Tables 1, 5; Ex. 2012 at 108:10-14.) The Bianchi-254 compositions further include from 20 to 30 wt. % of the aluminum-containing antiperspirant active. (Ex. 1008 at Tables 1, 5; Ex. 2012 at 108:10-14.)

The Petition ignores Bianchi-254's inclusion of these ingredients, despite its sole reason for combining Native and Bianchi-254 hinging on it: "When 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 preferred hardness and amount of ingredients." (Petition at 48)

Yet Bianchi-254 does not disclose a "natural, aluminum-free deodorant stick." Petitioner cannot reconcile this with its motivation to combine. The Petition does not explain what would have motivated a POSA to implement the weight-percentages from a non-natural antiperspirant stick into the natural, aluminum-free stick of Native (if it is even possible), or what a POSA would have substituted for aluminum in order to preserve the same weight percentages without the presence of the mixed aluminum salt. (Ex. 2011 at ¶ 119.) Nor does the Petition explain how a POSA would have had a reasonable expectation of success in implementing Bianchi-254's teachings while maintaining a stable composition. (*Id.*) Thus, Petitioner has not shown the Native-based grounds disclose or render obvious the limitations of any of the challenged claims.

**D. Petitioner's Hardness Challenge Is Again Wholly Deficient.**  
**(Ground 6: Claim 8)**

Just like the Lesniak combination, Petitioner cannot show its Native combination discloses the hardness range required by claim 8 of the '706 Patent.

**1. *No Reference Discloses a Stick of the Claimed Hardness.***

None of the references cited in Petitioner's Native-based grounds disclose a deodorant stick with the claimed hardness. Petitioner admits Native "does not disclose the hardness of the deodorant stick," as required by claim 8 of the '706 Patent. (Petition at 41.) Its expert agrees. (Ex. 2012 at 114:1-3.) Thus, Petitioner adds Bianchi-254, claiming "it would be obvious to formulate a deodorant stick such as the stick disclosed by Native using ingredients concentrations and hardnesses taught by Bianchi '254," which allegedly "establish[es]... that the claimed hardness range was standard." (Petition at 41.)

Petitioner's combination does not support a *prima facie* case of obviousness for the reasons provided above, but further, Petitioner relies on the same false equivalence of Bianchi-254's hardness measurements to those of the '706 Patent as it does with respect to Bianchi-518. Bianchi-254 discloses hardness values "from 5 to 15 mm, more particularly 5 to 10," and "from 8 to 15 mm, preferably 8 to 10 mm," measured pursuant to the standard DIN 51-579 hardness method. (Ex. 1008 at [0026], [0117]; Ex. 2011 at ¶¶ 122-23.) Like the standard ASTM D-1321 test, the DIN 51-579 method utilizes a 100-g total load for the needle assembly, whereas the '706 Patent test requires a total needle assembly load of 50 g. (*Compare* Ex. 2019 at 2 ("The weight of the test needle should be 2.5 g  $\pm$  0.05 g and that of the guide rod 97.5 g  $\pm$  0.1g."), *with* '706 Patent at 23:1-2; Ex. 2011 at ¶ 123.) For the

same reasons explained above, if the Bianchi compositions were tested using the method of the '706 Patent (*i.e.*, with a 50-g total needle assembly, as opposed to a 100-g one), the hardness values would be much lower. (Ex. 2011 at ¶ 123.) Thus, Bianchi-254's desired range actually indicates *significantly harder* sticks than that claimed in the '706 Patent. (*Id.*) Put another way, Petitioner has not cited *any reference* disclosing the hardness range as measured by the test defined in the '706 Patent, and thus no reference with the hardness range specified in claim 8; this failure alone is fatal to Petitioner's argument.

**2. *Even if the Claimed Hardness Range Was Taught by Bianchi-254 (It Was Not), Petitioner's Argument Still Fails.***

Even if the hardness ranges of Bianchi-254 and the '706 Patent overlapped (which Petitioner has not shown), Petitioner's argument misses the mark for several additional reasons.

*First*, given Native's silence on hardness, Petitioner's argument that a POSA would have modified Native—whether through so-called routine optimization or via Petitioner's proposed combination with Bianchi-254—starts from a false premise. A POSA looking at Native would have had no indication whether it discloses a deodorant that is either too hard or too soft as compared to the challenged claim. (Ex. 2011 at ¶ 125.) And as a result, a POSA would not have known which ingredients to alter or by how much. (*Id.*)

*Second*, Bianchi-254 expressly ties its hardness disclosure to the inventive formulations it discloses, stating that in “embodiment[s] of interest,” it is “desirable” that the antiperspirant stick compositions have that particular hardness. (Ex. 1008 at [0026].) All of Bianchi-254’s antiperspirant formulations contain aluminum—an ingredient claim 8 (through claim 1) expressly forbids:

TABLE 1

| COMPONENT (wt. %)                           | Antiperspirant Formulations |       |       |       |       |       |       |       |       |       |      |
|---------------------------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
|                                             | FORMULATION NO.             |       |       |       |       |       |       |       |       |       |      |
|                                             | 1                           | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11   |
| Castor Wax (mp 80° C.)                      | 3.5                         | 4     | 3.5   | 3.5   | 3.5   | 3.5   | 3.5   | 3.5   | 3.5   | 4     | 4    |
| Stearyl Alcohol (mp 60°)                    | 18                          | 18    | 20    | 18    | 18    | 18    | 18    | 18    | 18    | 18    | 18   |
| Polyethylene (400 mw; mp 82–84° C.)         | 0.3                         | 0.5   | 0.5   | 0.5   | 0.5   | 1     | 1     | 1     | 1     | 1     | 1    |
| Silica                                      | 0.3                         |       |       | 0.3   | 0.3   |       |       | 0.5   | 0.5   | 0.75  | 1    |
| PPG-14 Butyl Ether                          | 20                          | 5     | 5     | 20    | 20    | 9.5   | 15    | 15    | 25    | 31.25 | 8    |
| C12–C15 Alkyl Benzoate (Finsolv TN)         | 5                           | 20    | 18    | 5     | 5     | 15    | 23.5  | 23    | 13    | 8     | 31   |
| Dimethicone, 50 cst; (Dow Corning 200)      | 1                           | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1    |
| Sunflower Oil                               | 0.5                         | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5  |
| Talc                                        |                             |       |       | 3.5   | 2     |       |       |       |       |       | 2.5  |
| AAZG (17.8%)                                | 24                          | 20    | 20    | 20    | 20    | 20    | 24    | 24    | 24    | 24    | 24   |
| Fragrance                                   | 1                           | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1    |
| BHT (butylated hydroxytoluene)              | 0.05                        | 0.05  | 0.05  | 0.05  | 0.05  | 0.05  | 0.05  | 0.05  | 0.05  | 0.05  | 0.05 |
| Cyclomethicone; (Silicone 245; Dow Corning) | 26.35                       | 29.95 | 30.45 | 26.65 | 28.15 | 30.45 | 12.45 | 12.45 | 12.45 | 10.45 | 7.95 |

TABLE 5

| COMPONENT (wt. %)                          | Antiperspirant Stick Formulations |      |      |      |       |       |      |       |  |
|--------------------------------------------|-----------------------------------|------|------|------|-------|-------|------|-------|--|
|                                            | FORMULATION NO.                   |      |      |      |       |       |      |       |  |
|                                            | 12                                | 13   | 14   | 15   | 16    | 17    | 18   | 19    |  |
| Castor Wax (mp 80° C.)                     | 3.5                               | 3.5  | 3.5  | 3.5  | 3.5   | 3.5   | 3.5  | 3.5   |  |
| Stearyl Alcohol (mp 60°)                   | 18                                | 18   | 18   | 18   | 18    | 18    | 18   | 18    |  |
| Polyethylene (400 mw; mp 82–84° C.)        | 1                                 | 1    | 1    | 1    | 1     | 1     | 1    | 1     |  |
| Stearth 100                                | 0.5                               | 0.5  | 0.5  | 0.5  | —     | —     | 0.5  | —     |  |
| PPG-14 Butyl Ether                         | 9.5                               | 9.5  | 9.5  | 9.5  | 9.5   | 9.5   | 9.5  | 9.5   |  |
| C12–C15 Alkyl Benzoate (Finsolv TN)        | 15                                | 15   | 15   | 15   | 15    | 15    | 15   | 15    |  |
| Dimethicone, 50 cst (Dow Corning 200)      | 1                                 | 1    | 1    | 1    | 1     | 1     | 1    | 1     |  |
| Sunflower Oil                              | 0.5                               | 0.5  | 0.5  | 0.5  | 0.5   | 0.5   | 0.5  | 0.5   |  |
| AAZG (17.8%)                               | 20                                | 20   | 20   | 20   | 30    | 24    | 20   | 24    |  |
| Fragrance                                  | 1.25                              | 1.25 | 1.25 | 1.25 | 1     | 1     | 1.25 | 1     |  |
| Fragrance Encapsulate                      |                                   |      |      |      |       |       | 1.5  | 1.5   |  |
| BHT (butylated hydroxytoluene)             | 0.05                              | 0.05 | 0.05 | 0.05 | 0.05  | 0.05  | 0.05 | 0.05  |  |
| Cyclomethicone (Silicone 245; Dow Corning) | 28.7                              | 27.7 | 28.2 | 29.7 | 20.45 | 26.45 | 28.2 | 24.95 |  |
| Cyclodextrin                               | 1                                 | 2    | 1.5  |      |       |       |      |       |  |

(Ex. 1008 at Tables 1, 5; *see also id.* at [0033]; Ex. 2011 at ¶ 126.) Petitioner's expert agrees that each of these formulations contain aluminum. (Ex. 2012 at 108:10-14.) Petitioner is silent on Bianchi-254's use of aluminum salts, and neither Petitioner nor its expert explain how, or whether, a POSA could have achieved the hardness of Bianchi-254's aluminum-based compositions, let alone the hardness of claim 8, in an aluminum-free deodorant composition.

*Third*, a POSA would not have had a reasonable expectation of success in reformulating Native to achieve Bianchi-254's hardness (which, again, is significantly harder than the claimed range). (Ex. 2011 at ¶ 127.) A POSA would have appreciated that Native's ingredient list suggests it is an anhydrous, wax-structured semisolid with a triglyceride-based carrier system, similar to Lesniak's examples, where even the slightest change in ingredients yields unstable and unusable compositions. (*See id.*; Ex. 1003 at Table 2.)

For these additional reasons, compounded with Petitioner's threshold failure to cite a single reference that discloses the claimed range, Petitioner has not shown its Native-based grounds render obvious claim 8's hardness limitation.

**E. A POSA Would Not Have Added Easy Homemade's Magnesium Hydroxide to Native or Had a Reasonable Expectation of Success in Doing So.**  
**(Ground 7: Claims 2-4, 6, and 13-14; Ground 8: Claims 16-23)**

Additionally, Petitioner cannot show that a POSA would have been motivated to reformulate the cited Native product to include magnesium hydroxide as an

antimicrobial, or would have reasonably expected success in doing so. Petitioner argues that “[w]hile Native teaches a deodorant stick composition comprising an antimicrobial, a POSA would have known that deodorants containing baking soda could cause skin irritation for some users.” (Petition at 61.) Accordingly, Petitioner claims “[a] POSA would have looked to publications in the field of deodorants describing natural antimicrobials that were not known to cause skin irritation,” like the Easy Homemade hobbyist blog, which allegedly “confirms ... that magnesium hydroxide could be used to replace baking soda as an antimicrobial in deodorant compositions....” (Petition at 63-64.)

Initially, Petitioner has not established that Easy Homemade is prior art that would have been publicly accessible to a POSA. Simply because a document is archived on the Internet Archive’s Wayback Machine®, does not qualify it as publicly accessible prior art for an IPR challenge, even when accompanied by a standard affidavit from the Internet Archive. *In First Solar Inc. v. Rovshan Sade*, IPR2023-00827, Paper 13 (Nov. 16, 2023). Like in *First Solar*, Petitioner here does not provide any evidence that interested persons exercising reasonable diligence would have been able to locate Easy Homemade at the time of the priority date of the challenged patent, such as “evidence, or even argument, that [the] webpage was ‘indexed... (through search engines or otherwise)’ and thus locatable by a search engine.” *See id.* at 18.

Petitioner’s only “evidence” of alleged public accessibility is a statement from its expert that Easy Homemade was a “part of a series of related ‘Soap Deli News’ articles... with significant engagement from individuals globally” (Ex. 1002 at ¶ 113), where she cites three different “Soap Deli News” posts in apparent support. These additional blogposts do nothing to show the public accessibility of the specific Easy Homemade blogpost on which Petitioner relies at any time before the priority date of the challenged patent. Since Petitioner has failed to sufficiently establish Easy Homemade as a publicly accessible printed publication to the POSA as of the critical date, Petitioner’s grounds based on Easy Homemade fail.

Further, Petitioner’s argument fundamentally misunderstands Easy Homemade. (Ex. 2011 at ¶¶ 129-30.) Petitioner contends Easy Homemade teaches the use of magnesium hydroxide powder as “a known substitute for baking soda that avoided skin irritation,” but Easy Homemade does not actually teach removal and substitution of baking soda. (*See* Petition at 63.) Rather, the Easy Homemade hobbyist tells her followers to purchase a pre-made baking soda-free deodorant base—a base Petitioner’s expert could not identify the ingredients of—and add some magnesium hydroxide powder to it. (Ex. 1009 at 7; *see* Ex. 2012 at 120:6-8 (Q: “Do you know what natural deodorant base she’s starting with?” A: “At this stage I’m not sure.”)) As Petitioner’s expert confirms, Easy Homemade “doesn’t talk about

removing any ingredients from these sticks; she’s talking about adding ingredients.” (Ex. 2012 at 121:1-9.)

Further, Petitioner does not show why a POSA would have been motivated to look at the amateur Easy Homemade soap blog in the first place, or why a POSA would have modified the already-commercialized Native product. Petitioner claims baking soda can be a skin irritant, but the Native webpage also shows that its formulation includes shea butter and coconut oil, which a POSA would have understood to have anti-inflammatory and healing properties for skin. (Ex. 1007 at 15; Ex. 2011 at ¶ 131.) The Native reference also contains positive reviews from its users, none of which discuss experiencing any skin irritation. (Ex. 1007 at 17.)

Petitioner has not shown any issue with the Native formula that would have motivated a POSA to modify it, and also does not provide any rationale behind a POSA’s alleged selection of magnesium hydroxide to replace Native’s baking soda, apart from hindsight. (See Ex. 2011 at ¶¶ 132.) As Petitioner’s expert confirms, there are many antimicrobial options a POSA could have chosen if it wished to remove baking soda from Native, and Petitioner provides zero reasoning as to why a POSA would have selected magnesium hydroxide specifically. (See Ex. 2012 at 52:9-54:18.) Rather than a motivation to combine, Petitioner offers only hindsight based on a “roadmap” of the ’706 Patent’s successful formula. See *TQ Delta*, 942 F.3d at 1360-62.

Finally, even if a POSA would have been motivated to modify the cited Native product and replace baking soda with magnesium hydroxide, a POSA would not have had a reasonable expectation of success. As explained above, a POSA would have understood and appreciated that compositions like Native are delicate. (Ex. 2011 at ¶ 133.) As Lesniak explains, even the slightest changes in these types of formulas, to the degree of a single weight percent, may yield unstable results. (See Ex. 1003 at Table 2.) A POSA would have understood the instability that could result from reformulating Native, and thus would not have had a reasonable expectation of success in modifying Native to incorporate the teachings of Easy Homemade on magnesium hydroxide. (Ex. 2011 at ¶ 133.)

Petitioner does not articulate a rational motivation to combine Native and Easy Homemade with any reasonable expectation of success, so again, the Native-based grounds fail as to all claims.

**F. Petitioner’s Argument a POSA Would Both Remove and Add Baking Soda is Nonsensical**  
**(Ground 7: Claims 2-4, 6, 13-14)**

Ground 7 also falls short due to Petitioner’s inconsistencies regarding baking soda. Claim 4 requires the deodorant stick to include “at least one additional antimicrobial different from the primary antimicrobial, selected from the group consisting of... baking soda.” Petitioner contends this is disclosed by combining Native, Easy Homemade and Bianchi-254 “[b]ecause baking soda was known to

cause skin irritation for some users, [so] a POSA would have been motivated to use a lower amount of baking soda as an additional antimicrobial, while substituting magnesium hydroxide as the primary antimicrobial to enhance odor protection.” (Petition at 54-55.)

Yet Petitioner also argues that a POSA would have been motivated to remove baking soda from Native entirely, because Easy Homemade allegedly discloses “the *substitution* of magnesium hydroxide powder as a non-skin irritating antimicrobial *substitute* for baking soda in deodorant sticks.” (Petition at 53.) Thus, for one claim, Petitioner’s motivation-to-combine rationale centers on the “substitution” of magnesium hydroxide for baking soda, as a POSA would have understood baking soda to be a skin irritant. (*See id.*) But for another claim, Petitioner and its expert argue the POSA actually would have been motivated to include baking soda in the Native stick “as an additional antimicrobial,” in addition to Easy Homemade’s magnesium hydroxide, despite its potential for irritation and despite that Petitioner argues Easy Homemade explicitly teaches away from using baking soda. (*Id.* at 54-55; Ex. 1009 at 6.) Petitioner makes no effort to reconcile its pro- and anti-baking soda arguments and explain why a POSA would be motivated to both keep and remove baking soda from Native’s stick. (Ex. 2011 at ¶¶ 135-37.)

Petitioner also fails to explain a deficiency in Native, or in its Native-Easy Homemade creation, that would motivate a POSA to add a second antimicrobial to

Native's stick, whether it be baking soda, magnesium hydroxide, or one of the many other potential antimicrobial options. (Ex. 2011 at ¶ 138.) Petitioner's contradictory evidence amounts to improper hindsight reconstruction of the '706 Patent claims. *See TQ Delta*, 942 F.3d at 1361-62.

Petitioner also makes no attempt to argue the POSA would have had a reasonable expectation of success in formulating a deodorant with both magnesium hydroxide and baking soda. (*See* Petition at 56-57.) Petitioner cites no reference containing both of these antimicrobials within the same stick, and does not bother to explain how a POSA would have achieved that with a reasonable expectation of success. Indeed, as explained above, a POSA would have appreciated that even slight changes in ingredients can yield unstable sticks. (Ex. 2011 at ¶¶ 139-40.)

Petitioner's Native-based grounds do not render obvious claims 2-4, 6, or 13-14.

**G. The POSA Would Not Have Made the Ground-8 Combination Either.**  
**(Ground 8: Claims 16-23)**

Petitioner's Ground-8 challenge relies on a combination of *five* disparate references: Native, Bianchi-254, Easy Homemade, Anconi, and Stoia. (Petition at 55.) Petitioner has innumerable issues with this combination, as detailed above. But Ground 8 suffers from additional defects.

First, claims 16-23 require that the deodorant stick include “triethyl citrate,” which Petitioner again contends is disclosed by Anconi. (Petition at 60.) But like the fundamental differences a POSA would have recognized between the stick technologies of Lesniak and Anconi, Native and Anconi are different. (Ex. 2011 at ¶¶ 141-42.) A POSA would have understood that Native’s ingredient list suggests it is an anhydrous, wax-structured composition with a triglyceride-based carrier system, like Lesniak, whereas Anconi is an aqueous propylene glycol- and/or alcohol-based mixture solidified, for example, by sodium stearate. (Ex. 1057 at [0049]; Ex. 2011 at ¶ 142.) A POSA would not have been motivated to reformulate Native, let alone reformulate Native in accordance with the teachings of an entirely different stick technology. (Ex. 2011 at ¶ 142.)

A POSA also would not have been motivated to modify Native given the POSA’s knowledge of stability issues discussed above. Anconi similarly warns that “[s]ticks and solids are really complex chemical systems requiring a balance of ingredients designed to make the most of several performance factors including payout, slip or lubricity, chemical stability, softening temperature, and of course, efficacy.” (Ex. 1057 at [0052].) With this knowledge, a POSA would have been dissuaded from seeking to modify Native, and also would not have had a reasonable expectation of success. (Ex. 2011 at ¶ 142.)

Second, claims 16-23 further require the presence of “sunflower seed oil,” which Petitioner contends is disclosed by Stoia. According to Petitioner, a POSA would have been motivated to combine the references because “Native describes a deodorant stick comprising various plant oils and tocopherol, which is abundant in sunflower seed oil,” and “Stoia discloses the ‘proven . . . positive skin effects’ of sunflower seed oil in cosmetic compositions.” Thus, Petitioner argues the POSA “would have been motivated to include sunflower oil in Native’s deodorant sticks, and would have had a reasonable expectation of success in doing so, in view of its known emollient properties and association with proven positive skin effects.” (Petition at 61.)

This motivation is belied by Petitioner’s expert, who confirmed Stoia does not include any disclosure of sunflower seed oil use in a deodorant stick. (Ex. 2012 at 128:20-129:2.) Moreover, Petitioner admits that Native already “discloses the use of tocopherol (Vitamin E) ... in [its] deodorant stick.” (Petition at 57.) Thus Petitioner’s argument that the POSA would have been motivated to include a sunflower seed oil in Native due to the purported antioxidant properties of tocopherols falls short. (Ex. 2011 at ¶¶ 143-44.) Petitioner also admits Native “already contained plant oil or plant oil-derived emollients, such as coconut oil,” so Petitioner similarly cannot show why a POSA would have been motivated to include “sunflower seed oil as an [additional] emollient.” (Petition at 57.) This is of course

compounded by a Petitioner’s knowledge of the instability of these compositions, such that a POSA would not have been motivated to make unnecessary changes to begin with.

Petitioner’s Native-based grounds directed to claims 16-23 lack merit for these additional reasons.

## **VI. PETITIONER’S SQUATCH-BASED GROUND ALSO FAILS**

Petitioner’s Ground 9 combines an uncorroborated, interested employee declaration (Squatch) with a publication (Sturgis) that is not prior art.

### **A. Squatch is Not a “Printed Publication.”**

The Board correctly recognized in its institution decision for another P&G patent, the ’752 Patent, that Squatch (Ex. 1059) is an uncorroborated employee declaration showing images of deodorants without any information properly linking them to a website publicly available in November 2020; as such, it is not a “printed publication.” IPR2024-01498, Paper 9 at 28-31.

Squatch is an employee declaration purporting to include images of Dr. Squatch-branded products at a launch date in November 2020. Exhibit A to the declaration includes photos of three different deodorants, which the declarant alleges “appeared on Dr. Squatch’s publicly-accessible website... upon their launch in November 2020.” (Ex. 1059 at ¶ 4.) But the declaration does not include *any* screenshots of the webpage at the purported product launch date, and fails to show

that these Exhibit A images were available and on said webpage at the critical time. (See Ex. 2011 at ¶¶ 146-47.)

Petitioner's declarant relies on an internal marketing document, a Shopify timestamp in source code, and an internal quality assurance feedback document allegedly prepared in advance of the website launch. (Ex. 1059 at ¶ 5.) *But none of these sources show the images in Exhibit A published on the website.* Petitioner thus does not point to any "printed publication" from November 2020 with those images, and cannot establish those images as publicly accessible prior art at that time.

A reference is considered "publicly accessible" only if the party shows it was "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence[] can locate it." *Kyocera Wireless Corp. v. ITC*, 545 F.3d 1340, 1350 (Fed. Cir. 2008) (citations omitted); *Activision Blizzard, Inc. v. Acceleration Bay, LLC*, IPR201501951, Paper 107 at 11 (P.T.A.B. Mar. 23, 2017). "[T]he burden is on the [P]etitioner to identify with particularity evidence sufficient to establish that the reference was publicly accessible." *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 16 (P.T.A.B. Dec. 20, 2019).

Petitioner does not meet this burden and provides no evidence that the images used in Ground 9 were actually on the website. Instead, Petitioner relies on

uncorroborated, biased testimony from an employee that the images are “true and correct copies” of what was online in November 2020. This is not enough.

Petitioner fails to corroborate the declarant’s testimony that the same images of the products from Exhibit A were published on the Dr. Squatch website. Without the November 2020 webpage, Petitioner does not have a Squatch “printed publication” to use as prior art. On this basis alone, Ground 9 should be denied.

**B. Sturgis Is Not Prior Art.**

Further, the Sturgis reference is not prior art. Claims 16-23 have adequate written description support in the ’706 Patent’s priority application (the “’931 Application”) to secure their priority claim.

Petitioner argues the ’931 Application provides no “blaze marks” for a POSA to find support for the claimed ingredients. (Petition at 14.) But the ’931 Application sufficiently describes the ingredients in the ’706 Patent’s claimed formulas by explicitly disclosing each of them in the specification, explaining reasons for choosing many of them, and by otherwise relying on the background knowledge of a POSA, all of which conveyed that the inventor was in possession of the claimed invention. (Ex. 2011 at ¶¶ 148-49; *e.g.*, Ex. 1053 at 9:21-52, 10:34-59, 16:1-22, 18:40-51, 19:63-20:22, Tables 2-4, Fig. 3.) In arguing otherwise, Dr. Squatch cites *Purdue*—an inapposite, unpublished case. (Petition at 13-14.) Instead, *Allergan*

*USA, Incorporated v. MSN Laboratories Private Limited*, 111 F.4th 1358 (Fed. Cir. 2024) is more instructive.

In *Allergan*, the Federal Circuit distinguished “blaze marks” cases as those where the claims “recite a species where the specification describes only a genus.” 111 F.4th at 1372, 1375. The court contrasted those precedents, noting that the *Allergan* claims at issue were “narrow . . . in that they recite specific ingredients” and also that “the written description generally matches the scope of the claims,” specifically because “each of the expressly recited ingredients” was “adequately disclosed in the specification.” *Id.* Here, as in *Allergan*, the ’706 Patent and its priority application do more than simply disclose a genus and leave a POSA wondering what species may be included—they explicitly list out the ingredients in the specification and explicitly claim them in claims 16-23. *Id.*

The ’931 Application provides disclosure of each claimed ingredient, and a POSA would have known that these ingredients could be selected per their background knowledge and in light of the specification, which describes a number of embodiments and methods for making the claimed deodorant sticks. *See Union Oil Co. of California v. Atl. Richfield Co.*, 208 F.3d 989, 997 (Fed. Cir. 2000) (“[T]his court’s case law require only sufficient description to show one of skill in the refining art that the inventor possessed the claimed invention at the time of filing.”) Petitioner does not seriously argue that a POSA would not have known

how to create additional embodiments of the '706 claimed invention in view of the '931 Application's teachings. Because claims 16-23 have adequate written description support in their priority application, Sturgis is not prior art.

**C. A POSA Would Not Have Been Motivated to Combine Squatch With Sturgis**

Putting aside that the references are not prior art, Petitioner erroneously argues that a POSA would have been motivated to combine Squatch with Sturgis because Squatch does not disclose the quantitative amounts of any ingredients. (Petition at 63.) But like above, Petitioner's motivation to combine arguments are conclusory and based in hindsight, and should be rejected. *See TQ Delta*, 942 F.3d at 1361. (Ex. 2011 at ¶¶ 150-51.)

**VII. CONCLUSION**

For the reasons set forth above, the challenged claims of the '706 Patent are not unpatentable.

Date: May 2, 2025

Respectfully submitted,

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## **CERTIFICATE OF WORD COUNT**

Pursuant to Rule 37 C.F.R. 42.24(d), the undersigned hereby certifies that, based upon the word count of the word-processing system used to prepare this Response, the number of words in this Response is 13,881.

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**CERTIFICATE OF SERVICE**

Pursuant to 37 C.F.R. §42.6(e), I certify that I caused to be served on the counsel for Petitioner a true and correct copy of the foregoing by email on May 2, 2025, at the following address:

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