

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DR. SQUATCH, LLC
Petitioner

v.

THE PROCTER & GAMBLE COMPANY
Patent Owner

IPR2024-01174
Patent No. 11,497,706

**PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 11,497,706**

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PETITIONER’S EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 11,497,706 (“the ’706 Patent”)
1002	Declaration of Bozena B. Michniak-Kohn, PhD
1003	U.S. Patent No. 11,433,018 (“Lesniak”)
1004	U.S. Patent No. 9,314,412 (“Phinney”)
1005	John H. Lamb, Sodium Bicarbonate: An Excellent Deodorant, 7(3) J. INVESTIGATIVE DERMATOLOGY 131-33 (1946) (“Lamb”)
1006	U.S. Patent No. 6,048,518 (“Bianchi ’518”)
1007	Native Wayback Machine archives, captured May 26, 2016, November 23, 2016, November 1, 2015 respectively for: https://www.nativecos.com https://www.nativecos.com/product/deodorant/ https://www.nativecos.com (“Native”)
1008	U.S. Patent App. Pub. No. 2007/0166254 (“Bianchi ’254”)
1009	Wayback Machine archive, captured January 26, 2017, for http://soapdelinews.com/2016/11/easy-homemade-deodorant-recipe.html (“Easy Homemade”)
1010	Angelica Peebles, <i>P&G Has Acquired Native Natural Deodorant Brand</i> , CNBC (Nov. 15, 2017, 5:34 P.M.), https://www.cnbc.com/2017/11/15/pg-has-acquired-native-natural-deodorant-brand.html (last visited May 28, 2024)

1011	Rachel Lapidos, <i>P&G Has Acquired Cult-Fave Deodorant Brand Native</i> , WELL+GOOD (Nov. 17, 2017), https://www.wellandgood.com/pg-acquired-natural-deodorant-brand-native/ (last visited May 29, 2024)
1012	Alex Bitter, <i>P&G Buys Deodorant Brand Native for Undisclosed Sum</i> , S&P GLOBAL (Nov. 15, 2017, 5:31 PM) https://www.spglobal.com/marketintelligence/en/news-insights/trending/DWXgoreaSsTDRfJ0RDSMEg2 (last visited May 29, 2024)
1013	KARL LADEN ET AL., ANTIPERSPIRANTS AND DEODORANTS (Karl Laden ed., 2nd ed. 1999)
1014	U.S. Patent App. Pub. No. 2005/0142085
1015	English Translation of Int'l Patent App. Pub. No. WO 2012/098189
1016	SoapDeliNews Wayback Machine archive, captured April 17, 2013, for https://soapdelinews.com/2013/03/natural-handmade-lavender-patchouli-deodorant-recipe-with-printable-labels.html
1017	SoapDeliNews Wayback Machine archive, captured July 23, 2016, for http://soapdelinews.com/2016/07/natural-neem-oil-deodorant-recipe.html
1018	SoapDeliNews Wayback Machine archive, captured October 19, 2012, for http://soapdelinews.com/2012/10/diy-natural-homemade-deodorant-recipe.html
1019	LORRAINE WHITE, HOMEMADE DEODORANT 32 EASY TO MAKE ALL NATURAL & ORGANIC DEODORANT & BODY SPRAY RECIPES (2014)
1020	<i>Homemade Deodorant</i> , THE CRUNCHY URBANITE (Nov. 24, 2013) https://thecrunchyurbanite.com/2013/11/24/homemade-deodorant/ (last visited May 29, 2024)
1021	Piyatip Khuntayaporn & Jiraphong Suksiriworapong, <i>Efficacy of Essential Oil Formulations Against Malodor Causing Bacteria</i> , 44(4) PHARM. SCIS. ASIA 209-16 (2017)
1022	Laura G. Corral, et al., <i>A Research Note Antimicrobial Activity of Sodium Bicarbonate</i> , 53(3) J. FOOD SCI. 981-82 (1988)

1023	Pamela Emanoil, <i>Customers Itching for Personal Care Alternatives</i> , Apr. 2006 NAT. FOODS MERCHANDISER 40-42 (2006)
1024	Mohammed A. Shahtalebi et al., <i>Deodorant Effects of a Sage Extract Stick: Antibacterial Activity and Sensory Evaluation of Axillary Deodorancy</i> , 18(10) J. RSCH. MED. SCI. 833-39 (2013)
1025	U.S. Patent No. 5,585,092
1026	U.S. Patent No. 9,610,237
1027	U.S. Patent App. Pub. No. 2014/0199252
1028	James Lambert, <i>Silicone Safety and the Cosmetic Industry</i> , 126(11) <i>Cosms. & Toiletries</i> 810-15 (2011)
1029	Julia Pasquet et al., <i>The Contribution of Zinc Ions to the Antimicrobial Activity of Zinc Oxide</i> , 457 COLLOIDS & SURFACES: PHYSICOCHEMICAL & ENG'G ASPECTS 263-74 (2014)
1030	Rodrigo Carvalho, <i>Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde (Lyrall®) as Allergen: Experience from a Contact Dermatitis Unit</i> , 30(3) CUTANEOUS & OCULAR TOXICOLOGY 249-50 (2011)
1031	Maria V. Heisterberg, et al., <i>Deodorants are the Leading Cause of Allergic Contact Dermatitis to Fragrance Ingredients</i> , 64 CONTACT DERMATITIS 258-64 (2011)
1032	J. Handley & D. Burrows, <i>Allergic Contact Dermatitis from the Synthetic Fragrances Lyrall and Acetyl Cedrene in Separate Underarm Deodorant Preparations</i> , 31 CONTACT DERMATITIS 288-90 (1994)
1033	Prosecution History Excerpts of U.S. Patent Application No. 17/124,565 ('706 file history)
1034	Prosecution History Excerpts of U.S. Patent Application No. 17/961,089
1035	Prosecution History Excerpts of U.S. Provisional Patent Application No. 62/527,180

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1037	Siquet, F., & Devleeschouwer, M. J., Antibacterial agents and preservatives, Handbook of Cosmetic Science and Technology (2009)
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1039	Compendium of Food Additive Specifications, FNP 52 Add 13 (2005)
1040	Complaint For Patent Infringement (ECF No.1) from The Procter & Gamble Co. v. Dr. Squatch, LLC, Case No. 2:24-cv-04711 (C.D. Cal.)
1041	U.S. Patent No. 4,049,792
1042	JOHN A. DEAN, LANGE’S HANDBOOK OF CHEMISTRY (John A. Dean ed., 15th ed. 1999)
1043	U.S. Patent No. 4,919,934
1044	Reserved
1045	U.S. Patent No. 10,966,915
1046	21 C.F.R. § 720.4(d) (1992)
1047	U.S. Patent No. 6,123,932
1048	Curriculum Vitae of Bozena B. Michniak-Kohn, Ph.D.
1049	Int’l Patent App. Pub. No. WO 2012/098189

1050	Reserved
1051	Prosecution History Excerpts of U.S. Provisional Patent Application No. 62/647,104
1052	Reserved
1053	U.S. Patent No. 10,905,647
1054	U.S. Patent No. 5,976,514
1055	U.S. Patent No. 5,429,816
1056	U.S. Patent App. Pub. No. 2019/0000734 (“Sturgis”)
1057	U.S. Patent App. Pub. No. 2016/0089321 (“Anconi”)
1058	Mihaela Stoia, et al., <i>Selected Evidence-Based Health Benefits of Topically Applied Sunflower Oil</i> , 10(1) APPLIED SCI. REPS. 45-49 (2015) (“Stoia”)
1059	Declaration of Vinod Stephen Pinto (“Squatch”)
1060	U.S. Patent App. Pub. No. 2008/0287377
1061	Marcos Sánchez, et al., <i>Jojoba Oil: A State of the Art Review and Future Prospects</i> , 129 ENERGY CONVERSION & MGMT. 293-304 (2016)
1062	U.S. Patent No. RE38,141
1063	G.K. Sandha, et al., <i>Jojoba Oil as an Organic, Shelf Stable Standard Oil-Phase Base for Cosmetic Industry</i> , 2(2) RASAYAN J. CHEM. 300-306 (2009)

1064	Huaiqiong Chen, et al., <i>Impacts of Sample Preparation Methods on Solubility and Antilisterial Characteristics of Essential Oil Components in Milk</i> , 80(3) APPLIED & ENV'T MICROBIOLOGY 907-16 (2014)
1065	Natural Sourcing, <i>Material Safety Data Sheet, Jojoba Esters</i> , 70 (June 1, 2008)
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1069	IFSCC Monograph Number 6, Antiperspirants and Deodorants: Principles of Underarm Technology (1998)
1070	M. Abendrot et al., <i>Zinc-containing Compounds for Personal Care Applications</i> , 40 INT'L J. COSMETIC SCI. 319-27 (2018)
1071	JANE ANISTON, <i>HOMEMADE DEODORANT, A COMPLETE BEGINNER'S GUIDE TO NATURAL DIY DEODORANTS YOU CAN MAKE TODAY</i> (2015)
1072	EP0471392

CLAIM LISTING

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.
2. The deodorant stick of claim 1, wherein the primary antimicrobial has a water solubility of at most about 90 g/L at 25° C.
3. The deodorant stick of claim 1, wherein the primary antimicrobial is selected from the group consisting of beryllium carbonate, magnesium carbonate, calcium carbonate, magnesium hydroxide, magnesium carbonate hydroxide, magnesium hydroxide and magnesium carbonate hydroxide, partially carbonated magnesium hydroxide, and piroctone olamine.
4. The deodorant stick of claim 1, further comprising at least one additional antimicrobial different from the primary antimicrobial, selected from the group consisting of beryllium carbonate, magnesium carbonate, calcium carbonate, magnesium hydroxide, magnesium hydroxide and magnesium carbonate hydroxide, partially carbonated magnesium hydroxide, piroctone olamine, potassium carbonate, potassium bicarbonate, sodium carbonate, sodium

sesquicarbonate, baking soda, hexamidine, zinc carbonate, thymol, polyvinyl formate, salicylic acid, niacinamide, magnesium carbonate hydroxide, cinnamon essential oil, cinnamon bark essential oil, cinnamic aldehyde, and combinations thereof.

5. The deodorant stick of claim 1, wherein the primary antimicrobial is a powder.

6. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of baking soda.

7. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of a synthetic fragrance.

8. The deodorant stick of claim 1, wherein the deodorant stick has a hardness from about 70 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

10. The deodorant stick of claim 1, further comprising a structurant having a melting point from 50° C. to 80° C.

11. The deodorant stick of claim 1, further comprising a primary structurant with a melting point of at least 50° C.

12. The deodorant stick of claim 1, comprising at least about 40% by weight liquid triglyceride.

13. The deodorant stick of claim 1, wherein the primary antimicrobial has a water solubility of at most about 50 g/L at 25° C.

14. The deodorant stick of claim 3, wherein all antimicrobials have a water solubility of at most about 90 g/L at 25° C.

15. The deodorant stick of claim 1, further comprising a fragrance composition comprising at least about 50% by weight of natural oils, essential oils, or a combination thereof.

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.

17. The deodorant stick of claim 16, further comprising a fragrance.

18. The deodorant stick of claim 16, further comprising at least one essential oil.

19. The deodorant stick of claim 16, further comprising a natural fragrance.

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.

21. The deodorant stick of claim 20, further comprising a fragrance.

22. The deodorant stick of claim 20, further comprising at least one essential oil.

23. The deodorant stick of claim 20, further comprising a natural fragrance.

Pursuant to 35 U.S.C. §§ 311-19 and 37 C.F.R. § 42.1 *et seq.*, Dr. Squatch, LLC (“Dr. Squatch”) requests *inter partes* review (“IPR”) of claims 1-8 and 10-23 of U.S. Patent No. 11,497,706 (“the ’706 Patent”) (Ex. 1001) pursuant to 35 U.S.C. §§ 311-19 and 37 C.F.R. § 42.1 *et seq.* The ’706 Patent is subject to AIA 35 U.S.C. §§ 102 and 103.

MANDATORY NOTICES

A. Real Party-In-Interest (37 C.F.R. § 42.8 (b)(1))

Petitioner certifies that Dr. Squatch, LLC is the real party-in-interest.

B. Related Matters (37 C.F.R. § 42.8 (b)(2))

The ’706 Patent is currently involved in the following proceeding: *The Procter & Gamble Co. v. Dr. Squatch, LLC*, Case No. 2:24-cv-04711 (C.D. Cal.).

Related patents are currently involved in the following proceedings: IPR2024-1104, IPR2024-1105, and IPR2024-01173.

C. Counsel and Service Information (37 C.F.R. § 42.8(b)(3) and (4))

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Petitioner consents to electronic service of documents by email at:

DrSquatch-IPRs@Venable.com.

D. Payment of Fees Under 37 C.F.R. §§ 42.15(a) & 42.103

The required fees are submitted herewith in accordance with 37 C.F.R. §§ 42.103(a) and 42.15(a). If any additional fees are due during this proceeding, the Office is authorized to charge such fees to Deposit Account No. 22-0261. Any overpayment or refund of fees may also be deposited in this Deposit Account.

I. INTRODUCTION

The '706 Patent claims basic concepts used in known “natural” deodorants. Claim 1, for example, merely recites an aluminum-free deodorant stick with: (1) “at least about 25% by weight liquid triglyceride”; and (2) “a primary antimicrobial.” As Patent Owner admitted in related patents, deodorant sticks with this very basic ingredient combination were actually on the market before the priority date of the '706 Patent.

In particular, Patent Owner’s own U.S. Patent No. 10,966,915 (“the '915 Patent”) states that a then-“currently marketed” aluminum-free deodorant stick (described as a “comparative” example in the specification) contained all of the ingredients set forth in claim 1 of the '706 Patent. The '915 Patent’s comparative example substantially matches the prior art published ingredient list for the Patent Owner’s Native deodorant, as discussed below.

In addition to the Native ingredient list, U.S. Patent No. 11,433,018 (“Lesniak”) teaches (or renders obvious) all of the '706 Patent claims. Indeed, in a later application in the same patent family as the '706 Patent, the examiner applied Lesniak as an anticipatory reference against claims that recite the same features as those recited in claim 1 of the '706 Patent (as well as against features recited across the other claims).

With respect to picture claims, such as independent claims 16 and 20, that list numerous ingredients, those ingredients were well-known deodorant ingredients such that their selection represents obvious design choices, as established below. Also, the ingredient lists appear to have been drafted to target existing deodorant products on the market. But, because the 9-10 ingredients were cobbled together from various laundry lists of possible options in the specification, the pertinent claims lack written description support, including in the specification of the parent application, such that the '706 Patent is not entitled to any earlier priority date. Consequently, the ingredient list of a targeted product, which published before the filing date of the '706 Patent, is prior art applicable against the relevant claims.

II. GROUNDS FOR STANDING UNDER 37 C.F.R. § 42.104(a)

The '706 Patent is available for IPR and that Petitioner is not barred or estopped from requesting IPR. This petition is being filed within one year of service of the infringement complaint.

III. IDENTIFICATION OF CHALLENGES UNDER 37 C.F.R. § 42.104(b) AND RELIEF REQUESTED

A. Grounds for the Challenged Claims

Petitioner requests review of claims 1-8 and 10-23 of the '706 Patent on the grounds below and that those claims be found unpatentable.

Ground	Claim(s)	Basis for Unpatentability
1	1-2, 5-7, 10-13, 15	Anticipated and/or Obvious over Lesniak
2	3, 14	Obvious over Lesniak in view of Phinney
3	4	Obvious Over Lesniak in view of Phinney and Lamb
4	8	Obvious Over Lesniak in View of Bianchi '518
5	16-23	Obvious Over Lesniak in View of Phinney, Bianchi '254, and Anconi
6	1, 5, 7-8, 10-12, and 15	Obvious Over Native in view of Bianchi '254
7	2-4, 6, and 13-14	Obvious Over Native in view of Bianchi '254 and Easy Homemade

8	16-23	Obvious Over Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia
9	16-23	Obvious Over Squatch in view of Sturgis

B. The Challenges Presented Are Not Cumulative

The grounds for unpatentability presented in this petition are neither cumulative nor redundant to prosecution of the '706 Patent. Lesniak, Phinney, and Sturgis were of record during prosecution,¹ but not applied by the examiner or otherwise addressed during prosecution of the '706 Patent. All other applied references were not considered during prosecution.

IV. BACKGROUND OF THE TECHNOLOGY

Deodorants are cosmetic products that typically contain antimicrobials and/or fragrances to inhibit the formation and perception of malodor. Ex. 1013, 169-83, 189-95, 201. When in stick form, they also typically contain structurant(s) such as waxes to, among other things, contribute to the desired hardness, and carrier oils to disperse the other ingredients and serve as emollients. Ex. 1002, ¶¶34, 36-45, 49-54 (citing Ex. 1019-1024, 1026-1032)

Antiperspirants are a subcategory of deodorants. Like deodorants, they typically contained fragrances and/or antimicrobials, but they also included active

¹ Lesniak's specification also published as U.S. Patent Pub. No. 2017/0252288 and WO 2016/048425. References to Lesniak encompass the application of the specification published in other forms.

ingredients such as aluminum or zinc salts that may block sweat pores in the skin. Ex. 1006, 3:5-11; Ex. 1014, ¶¶[0020]-[0026]; Ex. 1003, 3:39-4:21, 8:46-48, 10:27; Ex. 1015, 5; Ex. 1049, 3-4; Ex. 1049, 3-4; Ex. 1008, ¶[0064]; Ex. 1013, 73, 215; Ex. 1002, ¶¶35.

Hardness was a known physical parameter affecting consumer acceptance that was controlled during the development of stick compositions. Ex. 1006, 6:23-25; Ex. 1014, ¶[0003]. Hardness is related to other product attributes such as strength against breakage, storage stability, and product aesthetics (e.g., smooth application/gliding on the skin, and drier skin feel after use). Ex. 1014, ¶[0003]. Formulators endeavored to develop compositions that had “satisfactory strength and hardness while exhibiting aesthetically pleasing attributes.” *Id.*, ¶¶[0003]-[0005]. Since long before the ’706 Patent, it was known that formulations that contained too large an amount of structurant(s) could result in overly hard structures that were “too brittle” and/or “cosmetically unacceptable.” *Id.*, ¶[0003], [0028]-[0029].

Well before the ’706 Patent, it was known that the hardness of “typical” stick compositions according to an ASTM D-1321 needle penetration test ranged from about 7.0 mm to about 14.0 mm,² and that products with hardness that fell outside

² This range is the same as from about 70 mm*10 to about 140 mm*10 stated in the ’706 Patent. Ex. 1001, 23:57-59 (explaining that 80 mm*10 is the same as 8 mm).

that range would “typically generate low consumer acceptance ratings.” Ex. 1006, 2:56-58, 6:23-29.

Formulators were aware that the hardness of a stick composition could be controlled by adjusting the concentration or type of liquid carrier and/or structurant (e.g., more structurant, balancing waxes with high and low melting points, etc.). Ex. 1014, ¶[0037] (“Such [liquid carrier] concentration will vary depending upon variables such as desired product hardness”). For example, U.S. Patent 4,049,792, a patent assigned to Patent Owner which is incorporated by reference in the ’706 Patent (Ex. 1001, 19:22-26), states:

The low melting point wax can be used as an adjunct to the high melting point wax to provide structure and as an emollient. The low melting point wax can also be used to adjust the feel of the stick. ***One skilled in the art will easily be able*** to make a product which feels more brittle, soft, slippery, sticky, rough, etc., by blending various suitable high melting point and low melting point waxes.

Ex. 1041, 4:37-44 (emphasis added); Ex. 1002, ¶46-48.

V. SUMMARY OF THE ’706 PATENT

The ’706 Patent acknowledges a preexisting consumer preference for natural (e.g., essential oils), aluminum-free deodorant sticks that did not cause irritation associated with baking soda. Ex. 1001, 1:21-43. The ’706 Patent describes its “invention” as compositions comprising a specific antimicrobial, piroctone olamine, “in combination with [other] appropriate antimicrobials” and “a chelating agent— “in particular ratios” and “at particular particle sizes.” *Id.*, 1:45-2:8 (attributing

those features to “anti-fungal activity”). None of the challenged claims, however, recites these purportedly inventive features. The claims do not even require piroctone olamine or any chelating agents, much less specify particle sizes and ratios of those ingredients. Nor do the challenged claims require any specific level of anti-fungal activity. Ex. 1002, ¶55.

A. The Claimed Subject Matter

The '706 Patent contains twenty-three claims. Independent claim 1 recites a deodorant stick comprising just two ingredients: (1) “at least about 25% by weight liquid triglyceride” and (2) a primary antimicrobial. Claim 1 further recites that the stick is “free of an aluminum salt,” in accordance with the admitted conventional consumer preference. *Id.*, 1:21-25.

Claim 1 covers the comparative formulas listed in the '915 Patent, which the patent admits were commercially available in the market before the critical date. Ex. 1045, 3:4-45, Table 1; Ex. 1051, 3:20-4:2, Table 1. Dependent claims 2-5 and 13-14 limit the antimicrobial to specific materials, or those having certain properties (e.g., powder form, water solubility). Dependent claims 6-7 contain negative limitations providing that the deodorant stick is substantially free of certain materials, such as baking soda or synthetic fragrance. Dependent claims 10-12 provide further limitations regarding the liquid triglyceride and structurant. Dependent claim 8 limits the deodorant stick to the exact hardness range known in the field to be the

consumers' preferred range. Independent claims 16 and 20 recite deodorant sticks that combine nine or ten ingredients. Finally, dependent claims 15, 17-19, and 21-23 add that the deodorant stick contains a fragrance or natural/essential oil, which the '706 Patent acknowledges as a preexisting consumer preference. Ex. 1001, 1:26-28.

B. Prosecution History

U.S. Patent Application No. 17/124,565 ("the '565 Application"), filed December 17, 2020, which issued as the '706 Patent, purports to be a continuation of U.S. Patent Application No. 16/021,931 ("the '931 Application") (now U.S. Patent No. 10,905,647), filed on June 28, 2018, which claims priority to earlier provisional applications (filed on March 23, 2018 and June 30, 2017).

In an Office Action dated March 1, 2022, all pending claims (1-15) of the '565 Application were rejected on the basis of nonstatutory double patenting. Ex. 1033, 1-7. The Applicant filed a terminal disclaimer to obviate the rejection and presented new claims 16-23 for examination, resulting in allowance. *Id.*, 8-21.

Although a version of Lesniak was of record during prosecution of the '565 Application, the examiner did not address the reference. However, during the prosecution of a subsequent application in the patent family, pending U.S. Patent Application No. 17/961,089 ("the '089 Application"), ***the same examiner later recognized the applicability of Lesniak.*** Specifically, in an Office Action dated July

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

In response to the rejection, the Applicant amended the claims of the '089 Application to recite that the deodorant stick (i) is substantially free of synthetic fragrance, (ii) is anhydrous, (iii) is substantially free of silicones, (iv) and has a hardness from about 70 mm*10 to about 140 mm*10 as measured by penetration with ASTM D-1321 needle. *Id.*, 20-23. Despite the amendments—including, notably, a limitation requiring a hardness range that is identical to '706 Patent's claimed range—the examiner still found the claims to be unpatentable in view of Lesniak. *Id.*, 20-33. The examiner expressly found the substitution of magnesium hydroxide for Lesniak's zinc oxide obvious. *Id.*, 30.

Also, in the '089 Application, in response to a double-patenting rejection, the Applicant filed a terminal disclaimer over the '706 Patent. *Id.*, 16-19.³

VI. PRIOR ART

A. Effective Prior Art Dates

i. The '706 Patent

No claims of the '706 Patent are entitled to a priority date of June, 30, 2017, the filing date of Provisional Application No. 62/527,180. Specifically, the 2017 provisional application fails to disclose a deodorant stick composition (i) comprising 25% liquid triglyceride or (ii) having a hardness of from about 70 mm*10 to about 140 mm*10 as measured with an ASTM D-1321 needle. Ex. 1035, 1-54. The earliest priority date the '706 Patent can claim is therefore March 23, 2018. Nevertheless, the references in Grounds 1-8 below are prior art regardless under any priority date.

Concerning Ground 9, claims 16-23 are not entitled to a priority date before the December 17, 2020 filing of the '706 Patent. Those claims require specific combinations of 9-10 ingredients lacking written description support in the specification of the '931 Application (to which the '706 Patent claims priority). For example, the '931 Application mentions shea butter and sunflower seed oil just once,

³ For the reasons discussed in this section, the application of Lesniak does not implicate 35 U.S.C. § 325(d).

in a list of more than twenty-five potential emollients, including broad classes such as “plant oils.” Ex. 1053, 18:40-51. The ’931 Application likewise includes triethyl citrate and magnesium hydroxide in a list of more than twenty-five potential antimicrobials. *Id.*, 9:21-42.⁴ The ’931 Application discloses beeswax and stearyl alcohol in a list of more than twenty-five potential structurants, including broad classes such as “fatty alcohols.” *Id.*, 16:9-22. The ’931 Application expands these laundry lists by incorporating U.S. Patent Nos. 5,976,514 and 5,891,424 for their disclosure of additional structurants (*id.*, 16:23-27) and U.S. Patent Nos. 4,049,792, 5,019,375, and 5,429,816 for their disclosure of “emulsifiers, distributing agents, antimicrobials, pharmaceutical or other topical active, preservatives, surfactants” (*id.*, 19:42-47). *See* Ex. 1054, 12:25-15:8 (disclosing laundry lists of structurants); Ex. 1055, 3:62-8:64 (disclosing laundry lists of, e.g., gelling agents and emollients).

Such laundry lists do not provide written description support for a particular claimed combination. In *Purdue Pharma L.P. v. Iancu*, 767 F. App’x 918, 924 (Fed. Cir. 2019), for example, the Court affirmed the Board’s finding that claims reciting two gelling agents lacked support in a priority application that listed those agents amongst approximately thirty others. While the application further highlighted the two claimed gelling agents, separately, in preferred embodiments, it disclosed

⁴ Triethyl citrate is included twice, as an antimicrobial with a solubility above and below 90 g/L. *Id.*

neither the combination nor any “preference for how many and which gelling agents to combine.” *Id.*; see *In re Ruschig*, 379 F.2d 990, 995 (C.C.P.A. 1967).

The same is true here. Claims 16-23’s combinations of just two ingredients, e.g., shea butter and sunflower seed oil, would foreclose priority to the ’931 Application under *Purdue*. Their combination of seven or eight *additional* ingredients only further precludes priority. The ’931 Application nowhere describes the combination of shea butter, sunflower seed oil, triethyl citrate, beeswax, stearyl alcohol, and the other ingredients claimed. And its laundry lists fail to provide “‘blaze marks’ that indicate or direct that a particular combination should be made ‘rather than any of the many others which could also be made.’” *Id.*, 924-25 (quoting *In re Ruschig*, 379 F.2d at 995).

ii. The Prior Art

U.S. Patent No. 11,433,018 (“Lesniak”) (Ex. 1003), a patent issued under Section 151 and which names another inventor, was effectively filed on June 18, 2015 (PCT/US2015/036498). It is therefore prior art under AIA 35 U.S.C. § 102(a)(2).

U.S. Patent No. 9,314,412 (“Phinney”) (Ex. 1004) issued on April 19, 2016, making it prior art under AIA 35 U.S.C. § 102(a)(1).

Lamb (Ex. 1005) is an article published in *The Journal of Investigative Dermatology* in 1946, making it prior art under AIA 35 U.S.C. § 102(a)(1).

U.S. Patent No. 6,048,518 (“Bianchi ’518”) (Ex. 1006) issued on April 11, 2000, making it prior art under AIA 35 U.S.C. § 102(a)(1).

Native (Ex. 1007) is a website page that was published and available to the public on at least November 23, 2016, making it prior art under AIA 35 U.S.C. § 102(a)(1).

U.S. Patent App. Pub. No. 2007/0166254 (“Bianchi ’254”) (Ex. 1008) was published on July 19, 2007, making it prior art under AIA 35 U.S.C. § 102(a)(1).

Easy Homemade (Ex. 1009) is a website page that was published and available to the public on at least January 26, 2017, making it prior art under AIA 35 U.S.C. § 102(a)(1).

U.S. Patent App. Pub. No. 2019/0000734 (“Sturgis”) (Ex. 1056) was published on January 3, 2019, making it prior art under AIA 35 U.S.C. § 102(a)(1). Sturgis has the same specification as the ’706 Patent.

U.S. Patent App. Pub. No. 2016/0089321 (“Anconi”) (Ex. 1057) was published on March 31, 2016, making it prior art under AIA 35 U.S.C. § 102(a)(1).

Stoia (Ex. 1058), is an article published in *Applied Science Reports* in 2015, making it prior art under AIA 35 U.S.C. § 102(a)(1).

Squatch (Ex. 1059) is an excerpt of a website page that was published and available to the public on at least November 13, 2020, making it prior art under AIA 35 U.S.C. § 102(a)(1).

VII. ARGUMENTS

A. Statement of the Law

A prior art reference that discloses each claim element anticipates even if it does “not disclose the elements in the very same terms used by the patent.” *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 910 (Fed. Cir. 2022). “When a patent claims a range . . . that range is anticipated by a prior art reference if the reference discloses a point within the range.” *Ineos USA LLC v. Berry Plastics Corp.*, 783 F.3d 865, 869 (Fed. Cir. 2015). When the prior art discloses its own range, “patentee [must] establish[] that the claimed range is critical to the operability of the claimed invention” to avoid anticipation. *Id.*, 871; *Genentech, Inc. v. Hospira, Inc.*, 946 F.3d 1333, 1337-38 (Fed. Cir. 2020)

“[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *EI DuPont de Nemours & Co. v. Synvina CV*, 904 F.3d 996, 1006 (Fed. Cir. 2018). Thus, “[n]ormally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification.” *Id.* “A more specific application of this general principle is that ‘[a] prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art.’” *Id.* “[S]uch overlap creates a presumption of obviousness.” *Id.* Patentees can rebut that presumption by showing the claimed

range “produce[s] a new and unexpected result which is ***different in kind and not merely in degree*** from the results of the prior art.” *Id.* (emphasis added). “A claimed range that demonstrates such unexpected results is referred to as a ‘critical’ range, and the patentee has the burden of proving criticality.” *Id.*; see also *Almirall, LLC v. Amneal Pharms. LLC*, 28 F.4th 265, 268-73 (Fed. Cir. 2022).

When evaluating a motivation to combine, it is not necessary to show that a combination is “the *best* option, only that it be a *suitable* option.” *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014); see also *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006); *Almirall*, 28 F.4th. at 274-75 (citation omitted) (affirming Board’s reliance on known “interchangeability” of gelling agents in finding substitution obvious).

Finally, a “reference need not state a feature’s absence in order to disclose a negative limitation.” *Id.*, 273.

B. Level of Ordinary Skill in the Art

A person of ordinary skill in the art (“POSA”) would have (1) at least a B.S. or equivalent degree; and (2) at least two years of experience in cosmetics formulations. Ex. 1002, ¶¶27-29.

C. Grounds of Unpatentability⁵

i. Ground 1 – Claims 1-2, 5-7, 10-13, 15 are Anticipated by and/or Obvious over Lesniak

Claims 1-2, 5-7, 10-13, 15 are anticipated by or rendered obvious over Lesniak. Lesniak describes natural anhydrous personal care compositions, including a deodorant (antiperspirant) stick,⁶ which Lesniak seeks to make more palatable to consumers. Ex. 1003, 1:16-35, 4:22, 4:61-67, 5:5-32, 10:27, 10:32-33.

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

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

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

Lesniak is in the same field as the '706 Patent, and both relate to personal care compositions, including deodorant and/or antiperspirant sticks. *See id.*, Abstract,

⁵ Petitioner is not aware of any secondary considerations that would rebut obviousness in any of the grounds.

⁶ *See* Ex. 1036, 2 (“[A]ll antiperspirants are deodorants....”); Ex. 1037, 246. Lesniak also describes how to make the compositions in stick form. Ex. 1003, 15:9-45.

Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1001, Abstract, 18:65-26:36. Ex. 1002, ¶¶56-60 (citing Ex. 1043).

'706 Patent Claims	Anticipation / Obviousness Based on Lesniak
1. A deodorant stick comprising:	To the extent the preamble is limiting, Lesniak discloses a deodorant stick in the form of an antiperspirant stick. Ex. 1003, 4:22, 9:45, 10:27 (“Optionally, the composition is a stick The composition can also be an antiperspirant.”). Ex. 1002, ¶61.
at least about 25% by weight liquid triglyceride and	Lesniak describes formulating a deodorant stick with at least about 25% of a liquid triglyceride, such as as caprylic/capric triglyceride, which the '706 Patent identifies as an exemplary liquid triglyceride, as a POSA would have known (Ex. 1001, 14:41-16). <i>See</i> Ex. 1003, 9:45-59 (“In certain embodiments, the stick comprises 46 to 56% by weight of the ester In certain embodiments for the stick, the ester comprises caprylic/capric triglyceride.”); 1:39-63, 2:31-41, 3:43-4:21 (disclosing examples of points within the claimed range, e.g., 48% caprylic/capric triglyceride), 6:30-43, 8:57-9:44. At a minimum, the overlap between the claimed liquid triglyceride range and the ranges in Lesniak renders the claim presumptively anticipated and/or obvious. The '706 Patent discloses nothing critical or unexpected regarding the claimed range relative to the prior art ranges, as would be required to overcome this presumption.⁷ Ex. 1002, ¶62.

⁷ Prior art that discloses a range that overlaps with a claimed range raises presumptions of both anticipation and obviousness, which can be overcome only with evidence of “criticality” of the claimed range, the threshold for criticality may differ under § 102 and § 103. *UCB, Inc. v. Actavis Labs. UT, Inc.*, 65 F.4th 679, 688 (Fed. Cir. 2023). At the very least, the overlapping ranges discussed herein render the claims obvious because the claimed ranges produce no “unexpected result which is different in kind and not merely in degree from the results of the prior art.” *DuPont*, 904 F.3d at 1006; Ex. 1002, ¶¶26,63,147,155.

a primary antimicrobial;	Lesniak describes a deodorant stick with zinc oxide, which, as a POSA would have known, is an antimicrobial. <i>See</i> Ex. 1003, 3:39-4:21, 8:31-9:59. ⁸ Zinc oxide is the “primary” antimicrobial because no antimicrobial is present in a greater amount. Ex. 1001, 10:52-54. A POSA would have been motivated to include an antimicrobial such as zinc oxide in Lesniak’s compositions to combat the bacteria that cause odor and/or product degradation. Ex. 1003, 1:16-35. Ex. 1002, ¶64. Indeed, a POSA would have understood that an antimicrobial like zinc oxide would further Lesniak’s goal of addressing natural personal care compositions’ “lack [of] robustness against microbial attack.” <i>Id.</i>
said deodorant stick being free of an aluminum salt.	Lesniak describes formulating a deodorant stick that is free of an aluminum salt. <i>See</i> Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:31-9:59. To the extent that Patent Owner argues that Lesniak does not explicitly articulate the negative limitation, a POSA would have understood Lesniak’s formulations to be complete deodorant sticks that did not require additional ingredients such as an aluminum salt. <i>See id.</i> Indeed, Lesniak’s formulations include zinc oxide, which was a known alternative to aluminum. <i>See id.</i>⁹ Moreover, a POSA would have understood Lesniak’s preference for “natural” ingredients to militate against inclusion of ingredients such as aluminum that were thought to be unsafe. <i>See id.</i>, 1:16-31, 4:61-67, 5:5-32, 10:31-33. Ex. 1002, ¶¶65-66.

⁸ *See also* Ex. 1029, 264 (“Zinc oxide (ZnO) is an efficient antimicrobial agent that acts by means of several mechanisms involving different chemical species.”); Ex. 1069, 19; Ex. 1070, 323-24; Ex. 1072, 2:1-3:5, 3:50-57.

⁹ *See* Ex. 1014, ¶[0018] (discussing zinc salts as antiperspirant actives); Ex. 1001, 16:40-47 (same).

2. The deodorant stick of claim 1, wherein the primary antimicrobial has a water solubility of at most about 90 g/L at 25° C.	<i>See</i> claim 1 analysis, above. Zinc oxide, as a POSA would have known, has a water solubility of at most about 90 g/L at 25° C. ¹⁰ Ex. 1002, ¶67.
5. The deodorant stick of claim 1, wherein the primary antimicrobial is a powder.	Lesniak describes formulating a deodorant stick with a primary antimicrobial in the form zinc oxide “as a powder.” Ex. 1003, 8:46-48. Ex. 1002, ¶68.
6. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of baking soda.	Lesniak describes formulating a deodorant stick with zinc oxide, an antimicrobial, and without baking soda (another antimicrobial). <i>See</i> claim 1 analysis, above; <i>see, e.g.</i> , Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:31-9:59. A POSA would have understood Lesniak’s formulations to be complete deodorant sticks that did not require additional ingredients such as baking soda. <i>See id.</i> Ex. 1002, ¶69.
7. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of a synthetic fragrance.	Lesniak describes formulating a deodorant stick without synthetic fragrance and, in particular, describes the use of natural fragrances. <i>See</i> Ex. 1003, 8:31-41 (“Examples of essential oils which may be used as natural fragrances include ...”). A POSA would have understood Lesniak’s formulations to be complete deodorant sticks that did not require additional ingredients such as synthetic fragrance. <i>See, id.</i> , 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:31-9:59. Moreover, a POSA would have understood Lesniak’s preference for “natural” ingredients to militate against inclusion of synthetic fragrance. <i>Id.</i> , 1:16-31, 4:61-67, 5:5-32, 10:31-33; Ex. 1002, ¶70.
10. The deodorant stick of claim 1, further comprising a	Lesniak describes formulating a deodorant stick with a primary structurant (“first wax”), such as beeswax, having

¹⁰ Ex. 1038, 47335 (“The reported water solubility of zinc oxide ranges from 1.6 milligrams per liter (mg/L) (29 deg.C) to 5 mg/L (25 deg.C).”)

structurant having a melting point from 50° C. to 80° C.	a melting point 50° C. to 80° C. ¹¹ Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:57-9:59. A POSA would have understood beeswax to be a suitable structurant for deodorant sticks and would have been motivated to use beeswax as a primary structurant based on the use of beeswax as the primary structurant throughout Lesniak. Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:57-9:59; Ex. 1002, ¶71-72.
11. The deodorant stick of claim 1, further comprising a primary structurant with a melting point of at least 50° C.	See claim 10 analysis, above. ¹² Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:57-9:59; Ex. 1002, ¶72.
12. The deodorant stick of claim 1, comprising at least about 40% by weight liquid triglyceride.	See claim 1 analysis, above, which applies equally to claim 8 at least because Lesniak's range of caprylic/capric triglyceride exceeds 40%. Ex. 1002, ¶73.
13. The deodorant stick of claim 1, wherein the primary antimicrobial has a water solubility of at most about 50 g/L at 25° C.	See claim 2 analysis, above, which applies equally to claim 8 at least because zinc oxide's water solubility was known to be at most about 50 g/L at 25° C. ¹³ Ex. 1002, ¶74.
15. The deodorant stick of claim 1, further comprising a fragrance composition	Lesniak describes formulating a deodorant stick with a fragrance composition in the form of "essential oils," which are natural oils. See Ex. 1003, 8:31-41. The fragrance compositions in Lesniak are essential oils and thus comprise at least about 50% (in particular, 100%)

¹¹ See Ex. 1039, 11 (reporting melting point of 62-65° C. for beeswax).

¹² Beeswax is the "primary" structurant because it is the structurant in the greatest amount. Ex. 1001, 16:6-7.

¹³ See n.10, above.

comprising at least about 50% by weight of natural oils, essential oils, or a combination thereof.	natural oils and essential oils. A POSA would have been motivated to include an essential oil in Lesniak's compositions to provide a pleasant fragrance and to combat bacteria that cause odor and/or product degradation. <i>See</i> Ex. 1003, 1:16-35; Ex. 1002, ¶¶75,44.
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ii. Ground 2 – Claims 3 and 14 are Obvious Over Lesniak in view of Phinney

Overview of the Combination

The combination of Lesniak in view of Phinney renders obvious claims 3, 4 and 14. As explained above, Lesniak discloses and/or suggests all of the limitations of independent claim 1. *Supra* § VII.C.i. While Lesniak teaches deodorant stick compositions that may contain zinc oxide (a known antimicrobial), it does not expressly teach that magnesium hydroxide was also known to be an antimicrobial useful in deodorant stick compositions. Phinney states that metal oxides, such as zinc oxide, are not particularly efficacious antimicrobials in deodorants when used alone. Ex. 1004, 2:33-37. Consequently, Phinney describes using, in a deodorant stick, magnesium hydroxide as an antimicrobial, in addition to zinc oxide. *Id.*, 5:52-60, 6:9-12, 6:31-34, 8:40-44. Phinney acknowledges that prior publications described magnesium hydroxide as an “effective deodorant” and touts its enhanced effectiveness in preventing odor when used in combination with zinc oxide. *Id.*, 1:12-22, 2:33-37, 5:64-66. Thus, a POSA would have found it obvious to add

magnesium hydroxide to the composition of Lesniak, as taught by Phinney. Ex. 1002, ¶76.

Motivation Supporting the Combination

Both Lesniak and Phinney are directed to deodorants with “natural ingredients.” Ex. 1004, 1:5-9; Ex. 1003, 4:61-5:31, 9:45, 10:27, 10:31-33. Both describe using known antimicrobials. *See, e.g.*, Ex. 1004, 1:15-19, 5:52-67, 6:31-34, 8:40-44; Ex. 1003, 3:39-4:21, 8:31-9:59. Because Lesniak teaches using zinc oxide (a known antimicrobial) and Phinney teaches that using magnesium hydroxide in combination with zinc oxide improves antimicrobial properties, a POSA would have had a reason to follow Phinney’s teaching and add magnesium hydroxide to Lesniak’s composition. A POSA would have been motivated to incorporate known improvements to odor protection, particularly where the known improvement also was known to maintain the “natural” composition intended by Lesniak. Ex. 1002, ¶¶77-78.

Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success in using magnesium hydroxide as an antimicrobial in Lesniak’s composition because Phinney described it as an “effective antimicrobial” and showed it had been successfully formulated into deodorant compositions containing zinc oxide where it provided long lasting odor protection. Moreover, a POSA would have appreciated

that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, as simple design choices. Ex. 1002, ¶79.

Analogous Art

Lesniak and Phinney are in the same field as the '706 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks, that contain known antimicrobials. See Ex. 1001, Abstract, 18:65-26:36; Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1004, Abstract, Title, 5:52-60, 6:9-12, 6:31-34, 8:40-44. They all describe and focus on the use of natural ingredients. See Ex. 1001, 1:26-44, 14:32-60, 17:58-12; Ex. 1003, 1:16-35, 4:61-67, 5:5-31, 10:31-33; Ex. 1004, Abstract, 1:5-9, 6:1-23; Ex. 1002, ¶80.

a) [3] The deodorant stick of claim 1, wherein the primary antimicrobial is selected from the group consisting of ... magnesium hydroxide

Lesniak teaches deodorant stick compositions containing zinc oxide (a known antimicrobial), but it does not expressly teach including magnesium hydroxide as an antimicrobial. Phinney discloses a deodorant stick that comprises magnesium hydroxide as an antimicrobial, in addition to zinc oxide (which is converted to zinc hydroxide in Phinney's formulations). Ex. 1004, 5:52-60, 6:9-12, 6:31-34, 8:40-44.

A POSA would have been motivated to add magnesium hydroxide to Lesniak's stick compositions because it was known that "a mixture of the hydroxides of zinc and magnesium could provide long lasting protection against odour due to

perspiration,” whereas zinc oxide alone was less effective “due to insolubility and low hydrolysis rate to a hydroxide form that could show some activity.” *Id.*, 1:12-22, 2:33-37, 5:64-66 (discussing the “previously recognized synergy between the zinc and magnesium compounds”), 5:48-49 (explaining that magnesium hydroxide “has low solubility and therefore does not ‘wash away’ under heavy perspiration”). Ex. 1002, ¶82 (citing Ex. 1072, 2:1-3:5, 3:50-57). Phinney teaches that the “magnesium oxide and zinc oxide ratio has been found to be effective at 3:1 molar.” *Id.*, 8:43-44, 9:9-10. A POSA therefore would have used magnesium hydroxide as the primary antimicrobial (present in a greater amount than zinc oxide) when formulating a deodorant stick based on the teachings of Lesniak and Phinney.

Alternatively, 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. *See id.*; Ex. 1002, ¶¶81-83.

b) [14] The deodorant stick of claim 3, wherein all antimicrobials have a water solubility of at most about 90 g/L at 25° C.

See claim [2] and claim [3] analyses, above.¹⁴ Ex. 1002, ¶84.

¹⁴ *See also* Ex. 1042, 14, 39 (indicating the aqueous solubility of magnesium hydroxide is 0.00125 g/100 mL, which is equivalent to 0.0125 g/L).

iii. Ground 3 – Claim 4 is Obvious Over Lesniak in view of Phinney and Lamb

Overview of the Combination

The combination of Lesniak in view of Phinney and Lamb renders obvious claim 4. As explained above, Lesniak and Phinney disclose and/or suggest all of the limitations of claim 3. *Supra* § VII.C.ii. While those references do not expressly teach baking soda as an antimicrobial, Lamb discloses a deodorant stick comprising baking soda as an effective antimicrobial. Ex. 1005, 132. Lamb concludes baking soda is an “excellent deodorant” and “a valuable underarm deodorant for common daily usage.” *Id.*, 132-33. Accordingly, it would have been obvious to add baking soda to the composition of Lesniak in view of Phinney to provide additional odor protection, as taught by Lamb. Ex. 1002, ¶85.

Motivation Supporting the Combination

A POSA would have been motivated to combine Lesniak and Phinney for the reasons stated in Section VII.C.ii, above. While Phinney teaches that zinc oxide and magnesium hydroxide had improved efficacy against malodor when used in combination, Lamb teaches that baking soda was another effective antimicrobial that could be used in deodorants. A POSA would have recognized that deodorant compositions often use multiple antimicrobials. While it was known that baking soda could cause skin irritation for some users (Ex. 1002, ¶45), a POSA would have found

it obvious to use baking soda as an additional antimicrobial (including, e.g., at reduced concentrations) to enhance odor protection.

Lamb describes a study which evaluated the effectiveness of baking soda as an underarm deodorant in more than 90 patients. Ex. 1005, 131-32. Lamb explains that baking soda may be used as an antimicrobial in a deodorant stick. *Id.*, 132-33. Lamb concludes that baking soda is an “excellent deodorant” that “lasts through the entire day.” A POSA would have looked at scientific publications, like Lamb, in evaluating the efficacy and use of antimicrobials in deodorants. Ex. 1002, ¶¶86-88.

Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success in using baking soda as an antimicrobial because Lamb showed baking soda had been successfully formulated into deodorant stick compositions. Ex. 1005, 131-33. Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, as simple design choices. Ex. 1002, ¶89.

Analogous Art

Lesniak, Phinney, and Lamb are in the same field as the '706 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.¹⁵ See, e.g., Ex. 1001, Abstract, 18:65-26:36; Ex. 1003, Abstract, Title, 3:39,

¹⁵ See n.6, above.

4:22, 8:43-46, 9:45, 10:27; Ex. 1004, Abstract, Title, 5:52-60, 6:9-12, 6:31-34, 8:40-44; Ex. 1005, 131-33; Ex. 1002, ¶90.

- a) **[4] The deodorant stick of claim 1, further comprising at least one additional antimicrobial different from the primary antimicrobial, selected from the group consisting of ... baking soda ... and combinations thereof.**

Lesniak in view of Phinney teaches deodorant stick compositions contain antimicrobials, but do not expressly teach deodorant stick compositions containing baking soda as an additional antimicrobial. Lamb describes a deodorant stick using baking soda as an antimicrobial. Ex. 1005, 132. While it was known that baking soda could cause skin irritation for some users (Ex. 1002, ¶45), a POSA would have been motivated to add baking soda as a secondary antimicrobial to the deodorant sticks disclosed by Lesniak in view of Phinney because baking soda was known to react with the acidic compounds responsible for malodor to form non-volatile salts and could provide enhanced efficacy against axillary malodor. *Id.*, 133. And a POSA would have been motivated to use less baking soda than magnesium hydroxide due to baking soda's known skin irritation issues. Ex. 1002, ¶91.

iv. Ground 4 – Claim 8 is Obvious Over Lesniak in View of Bianchi '518

Overview of the Combination

The combination of Lesniak in view of Bianchi '518 renders obvious claim 8. As explained above, Lesniak discloses and/or suggests all of the limitations of

independent claim 1. *Supra* § VII.C.i. Lesniak does not expressly teach hardness as measured by penetration with an ASTM-D 1321 needle. However, Bianchi '518 teaches that the claimed hardness range of 7.0 mm to about 14.0 mm (equivalent to about 70 mm*10 to about 140 mm*10)¹⁶, as measured by penetration with an ASTM-D 1321 needle, was “typical[,]” and products outside of the range were known to generate low consumer acceptance ratings. Ex. 1006, 2:56-58, 6:23-29. Accordingly, it would be obvious to formulate Lesniak’s deodorant stick to be within the claimed hardness range inasmuch as Bianchi '518 teaches that the range was long known to be needed for consumer acceptance of deodorant sticks. Ex. 1002, ¶92 (citing Ex.1025, 12:41-55).

Motivation Supporting the Combination

A POSA would have been motivated to combine Lesniak and Bianchi '518. By the time of the filing of the '706 Patent, a POSA would have known that hardness was an “important physical parameter affecting consumer acceptance,” and would have looked to achieve hardness levels that were taught in the field to achieve consumer acceptance. Ex. 1006, 6:23-25. Bianchi '518 informs the knowledge in the field on this point.

Bianchi '518 is a patent in the field that generally discloses low residue “antiperspirant sticks, substantially free of water and long chain fatty alcohols” and

¹⁶ See n.2, above.

methods related thereto. Ex. 1006, 1:8-14, 1:53-2:2. Bianchi '518 explains that a hardness from about 7.0 mm to about 14.0 mm (equivalent to about 70 mm*10 to about 140 mm*10)¹⁷ was “typical” for stick compositions, and that products falling outside that hardness range typically generated low consumer acceptance ratings. *Id.*, 2:57-58; 6:28-29. Moreover, Lesniak is directed to formulating deodorant sticks that have the “skin feel” desired by consumers. Ex. 1003, 1:16-35. Thus, a POSA would have looked at publications, like Bianchi '518, to find consumer acceptable hardness ranges in formulating a stick composition acceptable to consumers. Ex. 1002, ¶¶93-95.

Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success to formulate a deodorant stick such as the stick disclosed by Lesniak to have a hardness within the claimed range because others, such as the inventors in Bianchi '518, had successfully formulated antiperspirants and deodorants to have a hardness within that range. *See* Ex. 1006, 2:56-58, 6:23-29. A POSA would have readily understood how to adjust the hardness of the stick, using Lesniak's ingredients, inasmuch as a POSA would have known that adjusting the amount of structurant (using less if the deodorant was too hard, and vice-versa) could achieve the target hardness.¹⁸ For instance, Lesniak

¹⁷ *See* n.2, above.

¹⁸ *See* Ex. 1014, ¶¶[0028]-[0029] (defining structurant in the same manner as the '706 Patent and stating that the “structurant material contributes to the stick form

describes formulating a deodorant stick with 8% to 19% of a primary structurant, such as beeswax, and also optionally including 3% to 15% of a secondary structurant, such as sunflower seed wax and/or hydrogenated castor oil. Ex. 1003, 9:45-54; *see also id.*, 1:39-2:30, 3:43-4:21, 5:32-48. A POSA would have understood that the hardness could be adjusted by altering the amount of the primary structurant and/or by incorporating secondary structurants. Ex. 1002, ¶96.

Analogous Art

Lesniak and Bianchi '518 are in the same field as the '706 Patent, and both relate to personal care compositions, including deodorant and/or antiperspirant sticks.¹⁹ *See* Ex. 1001, Abstract, 18:65-26:36; Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1006, Abstract, Title, 1:8-35, 2:57-58, 6:23-29. Ex. 1002, ¶97.

- a) **[8] The deodorant stick of claim 1, wherein the deodorant stick has a hardness from about 70 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.**

Bianchi '518 teaches a hardness range of 7.0 mm to about 14.0 mm (equivalent to about 70 mm*10 to about 140 mm*10)²⁰, as measured by penetration

with the desired . . . hardness”); *see also id.*, ¶[0003] (“Using a large amount of waxy structurant may not be necessarily effective since it may result in an overly hard structure.”).

¹⁹ *See* n. 6, above.

²⁰ *See* n.2, above.

with an ASTM-D 1321 needle, was “typical[,]” and products outside of this range were known to generate low consumer acceptance ratings. Ex. 1006, 2:56-58, 6:23-29. A POSA therefore would have been motivated to formulate Lesniak’s deodorant stick to have a hardness within the claimed range. Ex. 1002, ¶98. Also, a POSA would have understood that the adjustment of the hardness of the stick was an issue of routine optimization, making the claimed range obvious even without Bianchi ’518.

v. Ground 5 – Claims 16-23 are Obvious Over Lesniak in View of Phinney, Bianchi ’254, and Anconi

Overview of the Combination

The combination of Lesniak in view of Phinney, Bianchi ’254, and Anconi renders obvious claims 16-23. While Lesniak describes formulating deodorant compositions with “fatty alcohols,” which a POSA would have understood to include stearyl alcohol, it does not expressly disclose using stearyl alcohol as the primary structurant. Ex. 1003, 8:31-32; Ex. 1001, 15:50-51; *see also* Ex. 1008, Tables 1, 5. Bianchi ’254 states stearyl alcohol is a “widely used” structurant “of particular interest” for deodorants. Ex. 1008, ¶¶[0001], [0018], [0019], [0058]. Therefore, a POSA would have found it obvious to use stearyl alcohol in the composition of Lesniak, as taught by Bianchi ’254.

Moreover, while Lesniak describes formulating deodorant compositions with antimicrobials such as zinc oxide, it does not expressly teach the use of triethyl

citrate, which a POSA would have recognized as another antimicrobial. Anconi discloses deodorant formulations that, like Lesniak's compositions, comprise zinc salts. Anconi states that the composition may also include "ingredients known to have antibacterial and deodorant properties," and identifies triethyl citrate as such an ingredient. Ex. 1057, ¶[0027]. Therefore, a POSA would have found it obvious to use triethyl citrate as an antimicrobial in the composition of Lesniak, as taught by Anconi. Ex. 1002, ¶99-100.

Motivation Supporting the Combination

It would have been obvious to use the teachings of Phinney, Bianchi '254, and Anconi in Lesniak's deodorant stick composition. A POSA would have been motivated to combine Lesniak and Phinney for the reasons stated in Section VII.C.ii, above. Lesniak aims to formulate deodorant sticks that have a consumer-preferred "skin feel" (e.g., reduced tackiness and drag). Ex. 1003, 1:16-35, 5:51-53. While Lesniak describes using "fatty alcohols" in its deodorant compositions, it does not expressly state stearyl alcohol is useful as the primary structurant. *Id.*, 8:31-32. Bianchi '254 highlights stearyl alcohol as a "widely used" structurant "of particular interest" for deodorants and provides example deodorants where it is successfully used as the primary structurant. Ex. 1008, ¶¶[0001], [0018], [0019], [0058]. Bianchi '254 aims to provide stick compositions having a "clean', non-sticky feeling." *Id.*, ¶[0010]. Accordingly, a POSA would have been motivated to incorporate stearyl

alcohol as the primary structurant in Lesniak's deodorant compositions to achieve consumer-preferred "skin feel."

In addition, Lesniak describes using zinc oxide in its deodorant compositions. As discussed above, zinc oxide was thought to have low efficacy as an antimicrobial in deodorants. And Anconi discloses triethyl citrate as an "ingredient[] known to have antibacterial and deodorant properties." Ex. 1057, ¶[0027]. Accordingly, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Lesniak's deodorant compositions to improve their ability to combat odor. A POSA further would have been motivated to include triethyl citrate in Lesniak's deodorant compositions because, as discussed above, Lesniak's compositions contained liquid triglycerides, and triethyl citrate was known to prevent the degradation of triglycerides in compositions for topical use.²¹ Ex. 1002, ¶101-103.

Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success in using stearyl alcohol as a structurant in Lesniak's composition because Bianchi '254 described it as a "widely used" structurant and showed it had been successfully formulated into deodorant compositions the primary structurant. A POSA would have had a reasonable expectation of success in using magnesium hydroxide in Lesniak's compositions for the reasons discussed above in Section. VII.C.ii. And a POSA

²¹ See Ex. 1060, Abstract, ¶¶[0022]-[0040].

would have had a reasonable expectation of success in using triethyl citrate as an antimicrobial in Lesniak's compositions because Anconi describes its successful use as an antimicrobial in deodorants, and others had successfully formulated compositions for topical application using triethyl citrate to prevent the degradation of triglycerides.²² Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as structurants and antimicrobials, as simple design choices. Ex. 1002, ¶104.

Analogous Art

Lesniak, Phinney, Bianchi '254, and Anconi are in the same field as the '706 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.²³ See Ex. 1001, Abstract, 18:65-26:36; Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1004, Abstract, Title, 5:52-60, 6:9-12, 6:31-34, 8:40-44; Ex. 1008, Abstract, Title, ¶¶[0010]-[0021]; Ex. 1057, Abstract, ¶¶[0049]-[0052]; Ex. 1002, ¶105.

'706 Patent Claims	Obviousness Based on Lesniak in View of Phinney, Bianchi '254, and Anconi
16. A deodorant stick comprising:	See claim 1 analysis, above. Ex. 1002, ¶106.

²² See n.21, above.

²³ See n.6, above.

a. at least about 25% by weight liquid triglyceride;	See claim 1 analysis, above. Ex. 1002, ¶107.
b. a starch;	Lesniak describes formulating a deodorant stick with a starch. Ex. 1003, 8:31-34. A POSA would have been motivated to include starch in Lesniak's deodorant sticks for its known absorbent and structurant properties. And a POSA would have had a reasonable expectation of success in doing so because starch (e.g., tapioca/arrowroot) had been successfully used in natural deodorants, even by people formulating deodorants at home with less skill than a POSA. ²⁴ Ex. 1002, ¶108.
c. stearyl alcohol;	Lesniak describes formulating deodorant compositions with "fatty alcohols," which a POSA would have understood to include stearyl alcohol. Ex. 1003, 8:31-32. Bianchi '254 singles out stearyl alcohol as a "widely used" structurant "of particular interest" for deodorants. Ex. 1008, ¶¶[0001], [0058]. Bianchi '254 describes deodorant formulations comprising 12-25% of stearyl alcohol as the structurant present in the greatest amount. <i>Id.</i> , ¶¶[0018], [0019]. A POSA would have been motivated to use stearyl alcohol as a structurant in Lesniak's deodorant formulations, and would have had a reasonable expectation of success in doing so, because stearyl alcohol was a preferred option that had already been used successfully as a structurant in deodorant sticks. Ex. 1002, ¶109.

²⁴ Ex. 1009, 7-9; Ex. 1016, 5-6; Ex. 1017, 6-8. To the extent Patent Owner argues that a POSA would not have been motivated to use a starch based on Lesniak's listing of ingredients, this would only further confirm that the '931 Application's laundry lists do not provide written description support for claims 16-23 of the '706 Patent, as discussed in Section VI.A.i, above, and applied in Ground 9, below. *See Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (disclosure required for written description is greater than disclosure required for obviousness).

d. magnesium hydroxide;	<i>See</i> claim 3 analysis, above. Ex. 1002, ¶110.
e. beeswax;	<i>See</i> claim 10 analysis, above. Ex. 1002, ¶111.
f. shea butter;	Lesniak describes formulating a deodorant stick with shea butter. Ex. 1003, 3:27-4:12, 8:1-14. A POSA would have been motivated to include shea butter in Lesniak’s deodorant sticks for its known emollient and structurant properties. And a POSA would have had a reasonable expectation of success in doing so because shea butter had been successfully used in natural deodorants, even by people formulating deodorants at home with less skill than a POSA. ²⁵ Ex. 1002, ¶112.
g. coconut oil;	Lesniak describes formulating a deodorant stick with coconut oil. Ex. 1003, 2:51-67, 3:25-4:12, 7:66-67. A POSA would have been motivated to include coconut oil in Lesniak’s deodorant sticks for its known emollient and structurant properties. And a POSA would have had a reasonable expectation of success in doing so because coconut oil had been successfully used in natural deodorants, even by people formulating deodorants at home with less skill than a POSA. ²⁶ Ex. 1002, ¶113.
h. triethyl citrate;	Lesniak describes using zinc oxide in its deodorant compositions. As discussed above, zinc oxide was thought to have low efficacy as an antimicrobial in deodorants. Anconi discloses triethyl citrate as an “ingredient[] known to have antibacterial and deodorant properties.” Ex. 1057, ¶[0027]. Accordingly, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Lesniak’s deodorant compositions, and would have had a reasonable expectation of success in doing so, to improve their ability to combat odor. A POSA further would have been motivated to include triethyl citrate in Lesniak’s deodorant compositions because, as discussed above, those compositions contained liquid triglyceride, and triethyl

²⁵ *See* Ex. 1009, 7; Ex. 1016, 5-6.

²⁶ *See* Ex. 1020, 2-5; Ex. 1071, 15-16, 26-34, 42-48.

	citrate was known to prevent the degradation of triglycerides in compositions for topical use. ²⁷ Ex. 1002, ¶114.
i. jojoba seed oil; and	Lesniak describes formulating a deodorant stick with jojoba butter, which is made from and contains jojoba seed oil. ²⁸ Ex. 1003, 8:4-11. Lesniak also describes a personal care composition containing jojoba seed oil (<i>Id.</i> , 13:48-67), which a POSA would have recognized as a suitable option to include in Lesniak's deodorant for its emollient properties and widespread use in cosmetic compositions. ²⁹ Ex. 1002, ¶115.
j. sunflower seed oil;	Lesniak describes formulating a deodorant stick with sunflower seed oil. Ex. 1003, 2:51-67, 3:25-4:22, 7:66-67, 9:52-59. Ex. 1002, ¶116.
said deodorant stick being free of an aluminum salt.	<i>See</i> claim 1 analysis, above. Ex. 1002, ¶117.
17. The deodorant stick of claim 16, further comprising a fragrance.	<i>See</i> claim 15 analysis, above. Ex. 1002, ¶118.
18. The deodorant stick of claim 16, further comprising at least one essential oil.	<i>See</i> claim 15 analysis, above. Ex. 1002, ¶119.
19. The deodorant stick of claim 16,	<i>See</i> claim 15 analysis, above. Ex. 1002, ¶120.

²⁷ *See* n.21, above.

²⁸ Ex. 1061, 296.

²⁹ *See* Ex. 1062, 2:23-30 (“[J]ojoba oil is used by the cosmetic industry as an emollient...”); Ex. 1063, 300-303.

further comprising a natural fragrance.	
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Claims 20-23 are identical to claims 16-19 except they do not recite “a starch,” and therefore are obvious for the same reasons claims 16-19 are obvious. Ex. 1002, ¶¶121-134.

vi. Ground 6 – Claims 1, 5, 7-8, 10-12, and 15 are Obvious Over Native in view of Bianchi ’254

Overview of the Combination

The combination of Native in view of Bianchi ’254 renders obvious claims 1, 5, 7-8, 10-12, and 15. Native is a printed publication from a website for the Native deodorant product, which sets forth the ingredients for a natural, aluminum-free deodorant stick, which was being marketed and sold in 2016. Ex. 1007, 5, 11. A POSA looking to formulate new deodorant compositions would have looked to existing formulations and would have understood that commercial natural deodorant brands typically provided ingredient lists of their products on their websites. Native, in particular, was a website that would have been well known to a POSA, inasmuch as Native was a well-known deodorant. Attesting to the fact that Native was a known leader in the field, Patent Owner acquired Native in 2017. *See* Ex. 1010, 3 (“Native reached internet fame”); Ex. 1011, 2-3, Ex. 1012,1.

Native discloses features of deodorant stick compositions claimed in the ’706 Patent; however, it does not expressly teach the percentage of each ingredient used,

including the percentage of liquid triglyceride (carrier oil). Native also does not disclose the hardness of the deodorant stick. Bianchi '254 describes antiperspirant stick compositions, which establish that the claimed concentrations of ingredients were conventional and that the claimed hardness range was standard. Accordingly, it would be obvious to formulate a deodorant stick such as the stick disclosed by Native using ingredient concentrations and hardnesses as taught by Bianchi '254. Ex. 1002, ¶135.

Motivation Supporting the Combination

In making a natural, aluminum-free deodorant stick composition, a POSA would have looked to existing compositions, such as Native. Native's deodorant stick composition is comprised of caprylic/capric triglyceride, baking soda, stearyl alcohol, oleyglycerol-3 beeswax, and jojoba esters. Ex. 1007, 11. Aluminum salts, and synthetic fragrances are not included in the composition. *See id.* As a POSA would have understood, Native lists its deodorant stick ingredients in order from greatest to least concentration (Ex. 1002, ¶137 (citing Ex. 1046, 164)); however, it does not expressly teach the percentage of each ingredient used nor state the hardness of the deodorant stick. In the absence of express teachings on these points, a POSA would have looked to other publications in the field with suitable examples.

Bianchi '254 is a publication in the field which describes "fatty-alcohol containing antiperspirant stick compositions" and methods related thereto. Ex.

1008, Abstract, ¶¶[0010]-[0012], [0021]. Native's primary structurant—stearyl alcohol—is a fatty alcohol. Thus, Bianchi '254 would have been of particular use for a POSA looking for percentages to use for Native's formulation.

Bianchi '254 describes antiperspirant stick compositions including the percentages of liquid triglyceride (carrier oil), primary structurant with a melting point of at least about 50°C (e.g., stearyl alcohol), and secondary structurants with a melting point of at least about 60°C (e.g., castor wax, polyethylene). *Id.*, ¶¶[0015]-[0019], [0131], [0060]-[0061], Table 5. Bianchi also describes antiperspirant sticks having, e.g., “hardness values of from 8 to 15 mm, preferably 8 to 10 mm, measured pursuant to” a test with a DIN 51-579 needle (*id.*, ¶¶[0026], [0117]), which the '706 Patent admits is an ASTM-D 1321 needle (Ex. 1001, 22:55-56) and would have been understood by a POSA as such. 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 hardnesses and amount of ingredients. Ex. 1002, ¶¶137-140.

Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success in formulating a deodorant stick such as the stick disclosed by Native with percentages of liquid triglyceride within the claimed ranges, because others, such as the inventors of Bianchi '254, had successfully formulated antiperspirant sticks within those claimed

ranges. Ex. 1008, ¶¶[0001], [0015]-[0019], [0023], [0026], [0050], [0058], [0060]-[0061], [0117], [0131], Table 5. Moreover, Native identifies the specific ingredient to use, but lacks the weight percents, where Bianchi '254 teaches the conventional weight percentages to be used for the various components such that the combination would aid the POSA in making a deodorant similar to Native's. With respect to hardness, a POSA would have had a reasonable expectation of success in achieving the same for reasons already discussed above.³⁰ Ex. 1002, ¶141.

Analogous Art

Native and Bianchi '254 are in the same field as the '706 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.³¹ See Ex. 1001, Abstract, 18:65-26:36; Ex. 1007, 5-8, 11; Ex. 1008, Abstract, ¶¶[0010]-[0021]; Ex. 1002, ¶142.

'706 Patent Claims	Obviousness Based on Native in view of Bianchi '254
1. A deodorant stick comprising:	To the extent the preamble is limiting, Native teaches a deodorant stick.

³⁰ See n.18, above.

³¹ See n.6, above.

	 Ex. 1007, 11; Ex. 1002, ¶143.
at least about 25% by weight liquid triglyceride and	Native describes a deodorant stick that comprised, as its first ingredient, caprylic/capric triglyceride, which the '706 Patent describes as an exemplary liquid triglyceride. Ex. 1001, 14:41-46. Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11. A POSA would have known that Native listed each ingredient in descending order of amount. Ex. 1002, ¶¶____ (citing Ex. 1046, 164 (“in descending order of predominance by weight”)). Thus, a POSA would have understood the Native deodorant stick to comprise a substantial amount of liquid triglyceride, since caprylic/capric triglyceride is the most predominant ingredient. Indeed, Patent Owner’s related ’915 Patent admits that a “currently marketed” product (Comparative Formula 1), which had the same nine most predominant ingredients by weight—in the same order—as the deodorant stick disclosed on the Native website, comprised 34.15% caprylic/capric triglyceride.

	Comparative Formula 1
Hardness (Penetration mm*10)	63
Caprylic/Capric Triglyceride	34.15
Arrowroot Powder	23
Stearyl Alcohol	12
Ozokerite	
Castor Wax	3
Baking Soda	12
Magnesium Hydroxide	
Shea Butter	6
Coconut Oil	4.75
Polyglycerol-3	2.5
Beeswax	
Jobba Esters	1
70	
Glyceryl Caprylate (and) Glyceryl Undecylenate	1
Perfumes	0.6
Cyclodextrin	
Tapioca Starch	

Ex. 1045, 3:1-45.

Regardless of the admission that using the claimed amount was not inventive, it was well known that deodorants typically comprised more than 25% of a carrier oil component such as liquid triglyceride. Specifically, Bianchi '254 describes an antiperspirant stick with 40-80% oil. In Bianchi '254, part of the oil carrier (20-40% of the total) is a natural oil such as a liquid triglyceride. Ex. 1008, ¶¶[0017], [0050]. Bianchi '254 also describes that the antiperspirant stick further comprised 20-40% of silicone oil. *Id.*, ¶[0016]. A POSA would have understood that silicone oil and liquid triglyceride both functioned as “carrier oils” that, among other things, solubilize and disperse other ingredients (*id.*, ¶¶[0015], [0023], cl. 17, 18), and therefore would have been motivated to use even more liquid triglyceride when formulating a natural deodorant stick (like in Native) that did not include, e.g., silicone oil, to meet what the '706 Patent admits was an

	existing consumer preference (Ex. 1001, 1:26-28, 1:42-44, 14:32-34, 14:48-60). Ex. 1002, ¶¶144-148.
a primary antimicrobial;	Native teaches a deodorant stick composition comprising a primary antimicrobial in the form of baking soda, which was a known antimicrobial³² listed before, and thus present in greater amounts than, any other antimicrobial. Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶149.
said deodorant stick being free of an aluminum salt.	Native describes an “Aluminum Free” deodorant stick, which a POSA would have understood to mean that the formulation did not contain an aluminum salt. The listed ingredients, discussed above, confirm this. NATIVE DEODORANT Free Shipping Aluminum Free No Commitment Ex. 1007, 11. In addition, Native touted its “NATURAL INGREDIENTS”, which a POSA would have understood to militate against inclusion of ingredients such as aluminum that were thought to be unsafe. <i>Id.</i>, 5; Ex. 1002, ¶¶150-151.

³² See Ex. 1005, 133; Ex. 1001, 10:30-43.

5. The deodorant stick of claim 1, wherein the primary antimicrobial is a powder.	A POSA would have understood Native’s primary antimicrobial, baking soda, to be a powder.³³ Ex. 1002, ¶152.
7. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of a synthetic fragrance.	The Native website discloses and/or suggests a deodorant stick free from synthetic fragrance, as its “fragrance” referred to natural essential oils. Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11. In addition, Native touted its “NATURAL INGREDIENTS”, which a POSA would have understood to exclude synthetic fragrances. <i>Id.</i>, 5; Ex. 1002, ¶153-154.
8. The deodorant stick of claim 1, wherein the deodorant stick has a hardness from about 70 mm*10 to about 140 mm*10, as measured by penetration with	Native does not state the hardness of the deodorant stick. Bianchi ’254, however, describes that its antiperspirant sticks have “hardness values of from 8 to 15 mm, preferably 8 to 10 mm,³⁴ measured pursuant to” a test with a DIN 51-579 needle (Ex. 1008, ¶¶[0026], [0117]), which is an ASTM-D 1321 needle according to the ’706 Patent (Ex. 1001, 22:55-56), and as would have been understood by a POSA. Ex. 1002, ¶155 (citing Ex. 1047, 8:59-9:13).

³³ See Ex. 1066, 24 (“Sodium bicarbonate is a white, odorless, crystalline powder.”).

³⁴ See n.2, above.

ASTM D-1321 needle.	A POSA would have been motivated to formulate a deodorant stick, such as Native’s deodorant stick, to have a hardness within Bianchi ’254’s preferred ranges because a POSA would have (i) looked to other references for preferred hardness ranges in the absence of any explicit teaching on this point in Native and (ii) known that customer preferred hardness levels within the claimed range and the ranges stated in Bianchi ’254. Ex. 1002, ¶157 (citing Ex. 1006, 2:56-58, 6:23-29)). And a POSA would have had a reasonable expectation of success in doing so for reasons addressed above. At a minimum, the overlap between the claimed hardness range and the ranges in the prior art renders the claim presumptively obvious (even without Bianchi ’254, as an examiner found in related prosecution discussed above that the hardness would have been obvious to achieve). The ’706 Patent discloses nothing critical or unexpected regarding the claimed range relative to the prior art ranges. Ex. 1002, ¶¶155-158.
10. The deodorant stick of claim 1, further comprising a structurant having a melting point from 50° C. to 80° C.	Native’s deodorant stick comprised stearyl alcohol, which is a structurant that melts between 50° C. and 70° C., as generally known in the field. Ex. 1008, Tables 1, 5. Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶159.
11. The deodorant stick of claim 1, further comprising a primary structurant	See claim 10 analysis of ground 6, above. Stearyl alcohol is the “primary” structurant in Native’s deodorant stick because it is the first structurant listed in

with a melting point of at least 50° C.	the ingredient list and, thus, the structurant in the greatest amount.³⁵ Ex. 1001, 15:25-28. Also, Bianchi '254 singles out stearyl alcohol as a “widely used” structurant “of particular interest” for antiperspirants. Ex. 1008, ¶¶[0001], [0058]. Bianchi '254 describes antiperspirant formulations comprising 12-25% of a fatty alcohol, such as stearyl alcohol, as the structurant present in the greatest amount. Ex. 1008, ¶¶[0018]-[0019], [0131] (showing formulations with 18% stearyl alcohol as primary structurant and 3.5% castor wax as secondary structurant). Thus, a POSA would have been motivated to use a primary structurant with a melting point of at least about 50° Celsius, such as stearyl alcohol, in a deodorant stick, inasmuch as both Native and Bianchi '254 describe doing so. Ex. 1002, ¶¶160-162.
12. The deodorant stick of claim 1, comprising at least about 40% by weight liquid triglyceride.	See claim 1 analysis of ground 6, above, which applies equally to claim 12 at least because Bianchi '254's range of caprylic/capric triglyceride extends to 40%, and a POSA would have been motivated to use more when omitting silicone oil. Ex. 1002, ¶163.
15. The deodorant stick of claim 1, further comprising a fragrance composition comprising at least	Native discloses a deodorant stick with a fragrance composition comprising at least about 50% by weight (in particular, 100%) of natural oils or essential oils, as its “fragrance” referred to natural essential oils such as eucalyptus oil and spearmint oil.

³⁵ From its infringement complaint, Petitioner understands Patent Owner's position to be that arrowroot powder, listed in Native's ingredient list, does not count as a structurant. Ex. 1040, 4 (identifying stearyl alcohol, but not arrowroot powder, as a structurant). Thus, Petitioner relies upon Patent Owner's position in this regard for purposes of the IPR only. Petitioner reserves the right to present positions in any related litigation on this point that may differ from Patent Owner's position on the “primary structurant” (i.e., Petitioner may argue in the alternative, in litigation, that arrowroot powder counts as a structurant).

about 50% by weight of natural oils, essential oils, or a combination thereof.	Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶164.
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vii. Ground 7 – Claims 2-4, 6, and 13-14 are Obvious Over Native in view of Bianchi ’254 and Easy Homemade

Overview of the Combination

The combination of Native in view of Bianchi ’254 and Easy Homemade renders obvious claims 2-4, 6, and 13-14. As explained above, Native in view of Bianchi ’254 renders obvious all of the limitations of independent claim 1. *Supra* § VII.C.vi. While Native teaches a deodorant stick composition comprising an antimicrobial, it does not teach a deodorant stick composition (1) substantially free of baking soda (Native’s antimicrobial); (2) comprising antimicrobials with a water solubility of at most about 50 or 90 g/L at 25°C; or (3) comprising magnesium hydroxide as the antimicrobial. A POSA would have known, however, that deodorants containing baking soda (Native’s antimicrobial) could cause skin irritation for some users (or at the very least the alternative was a preference for some consumers). Ex. 1009, 6. Easy Homemade explains that magnesium hydroxide,

which a POSA would have known has a water solubility below 50 g/L at 25°C,³⁶ could be used to replace baking soda as an antimicrobial in deodorant compositions, and it works just as well. *Id.*, 6, 9. Accordingly, it would be obvious to use magnesium hydroxide as a substitute to baking soda in the composition of Native, as taught by Easy Homemade, or to reduce the amount of baking soda in Native’s composition.

Easy Homemade is a printed publication from a website dedicated to natural deodorant formulations. It describes a successful strategy that had been implemented by an independent formulator to avoid the possible skin irritation caused baking soda. A POSA seeking a solution to that problem would have known there were dedicated online resources in which independent formulators shared suitable ingredient for and methods of formulating natural deodorants, making Easy Homemade relevant. Furthermore, a POSA would have appreciated that such websites from independent formulators striving for more natural options presented an indication of consumer preferences, which a POSA would desire to meet in formulating new commercial products. Easy Homemade was widely accessible, being part of a series of related “Soap Deli News” articles dedicated to deodorant formulations with significant engagement from individuals globally. *See generally* Ex. 1009; Ex. 1016; Ex. 1017; Ex. 1018; Ex. 1002, ¶¶165-167.

³⁶ *See* n.14, above.

Motivation Supporting the Combination

It would have been obvious to use the teachings of Bianchi '254 and Easy Homemade in Native's deodorant stick composition. A POSA would have been motivated to combine Native and Bianchi '254 for the reasons stated in Section VII.C.vi, above.

It also would have been obvious to apply the teachings of Easy Homemade to Native's deodorant stick composition. While Native teaches a deodorant stick composition comprising an antimicrobial (baking soda), a POSA would have known that deodorants containing baking soda could cause skin irritation for some users. A POSA would have looked to publications in the field of deodorants describing natural antimicrobials that were not known to cause skin irritation, and would seek to understand consumer demands in the field (not being suitably met by existing offerings) for guidance on new products. Easy Homemade is a publicly-available website page that sets forth the ingredients for and method of making a natural deodorant. Ex. 1009, 5-9. Easy Homemade confirms what a POSA would have known—namely, that magnesium hydroxide could be used to replace baking soda as an antimicrobial in deodorant compositions, and it works just as well. *Id.*, 6, 9; Ex. 1002, ¶¶168-170.

Reasonable Expectation of Success

A POSA would have also had a reasonable expectation of success in formulating Native's deodorant stick based on Bianchi '245 using Easy Homemade's magnesium hydroxide antimicrobial as an alternative, or in addition, to baking soda. In particular, Easy Homemade shows that the simple substitution was achievable even by people formulating deodorants at home (with less skill than a POSA). Ex. 1009, 6, 9.

A POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, structurants, and carrier oils, as simple design choices. Ex. 1002, ¶171-172.

Analogous Art

Native, Bianchi '254, and Easy Homemade are in the same field as the '706 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.³⁷ See Ex. 1001, Abstract, 18:65-26:36; Ex. 1007, 5-8, 11; Ex. 1008, Abstract, ¶¶[0010]-[0021]; Ex. 1009, 5-9; Ex. 1002, ¶173.

'706 Patent Claims	Obviousness Based on Native in view of Bianchi '254 and Easy Homemade
2. The deodorant stick of claim 1, wherein the primary antimicrobial has a water solubility of at	Native teaches a deodorant stick composition comprising baking soda. A POSA would have known that deodorants containing baking soda could cause skin irritation for some users. Easy Homemade discloses the substitution of magnesium

³⁷ See n.6, above.

most about 90 g/L at 25° C.	hydroxide powder as a non-skin irritating antimicrobial substitute for baking soda in deodorant sticks. Ex. 1009, 6 (“I fell victim to the . . . rash you get after using deodorant with baking soda. Eventually I discovered that I could swap the baking soda with magnesium hydroxide . . . and it worked just as well.”). With this substitution, magnesium hydroxide would be the primary antimicrobial in Native’s deodorant stick, present in a greater amount than any other antimicrobials.³⁸ Ex. 1002, ¶174.
3. The deodorant stick of claim 1, wherein the primary antimicrobial is selected from the group consisting of ... magnesium hydroxide ...	See claim 2 analysis of ground 7, above. Ex. 1002, ¶175.
4. The deodorant stick of claim 1, further comprising at least one additional antimicrobial different from the primary antimicrobial, selected from the group consisting of ... baking soda ...	Native’s deodorant stick comprised baking soda, which the ’706 Patent describes as (and was known to be) an exemplary antimicrobial. Ex. 1001, 1:26-30, 10:31-43. Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11. A POSA would have known that deodorant compositions often use multiple antimicrobials. Because baking soda was known to cause skin irritation for some users, a POSA would have been motivated to use a lower amount of baking soda as

³⁸ See n.14, above; Ex. 1001, 9:22-25, 10-31-35.

	an additional antimicrobial, while substituting magnesium hydroxide as the primary antimicrobial to enhance odor protection (<i>see</i> claim 2 analysis of ground 7, above). Ex. 1002, ¶176-177.
6. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of baking soda.	<i>See</i> claim 2 analysis of ground 7, above. Ex. 1002, ¶178.
13. The deodorant stick of claim 1, wherein the primary antimicrobial has a water solubility of at most about 50 g/L at 25° C.	<i>See</i> claim 2 analysis of ground 7, above. ³⁹ Ex. 1002, ¶179.
14. The deodorant stick of claim 3, wherein all antimicrobials have a water solubility of at most about 90 g/L at 25° C.	<i>See</i> claim 13 analysis of ground 7, above. To the extent the fragrance oils in Native were considered antimicrobials, a POSA would have known they too had a water solubility below 90 g/L at 25° C. ⁴⁰ Ex. 1002, ¶180.

viii. Ground 8 – Claims 16-23 are Obvious Over Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia

Overview of the Combination

The combination of Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia renders obvious claims 16-23. While Native teaches a deodorant stick composition comprising an antimicrobial and various plant compounds, it does

³⁹ *See* n.14, above.

⁴⁰ Ex. 1064, 907-08 (indicating that essential oil water solubilities are “mostly below 2 g/liter at around 20°C”).

not teach a deodorant stick comprising (1) triethyl citrate; or (2) sunflower seed oil. But a POSA would have found it obvious to use these compounds in Native's deodorant based on Anconi and Stoia. Ex. 1002, ¶181.

Motivation Supporting the Combination

It would have been obvious to use the teachings of Bianchi '254, Easy Homemade, Anconi, and Stoia in Native's deodorant stick composition. A POSA would have been motivated to combine Native, Bianchi '254, and Easy Homemade for the reasons stated in Section VII.C.vii, above.

Native discloses the use of baking soda as an antimicrobial in its deodorant compositions. As discussed above, baking soda was thought to cause skin irritation in some users. Anconi discloses triethyl citrate as an "ingredient[] known to have antibacterial and deodorant properties." Ex. 1057, ¶[0027]. Accordingly, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Native's deodorant compositions to improve their ability to combat odor after reducing or eliminating the baking soda in the formulation to avoid skin irritation issues. A POSA further would have been motivated to include triethyl citrate in Native's deodorant compositions because, as discussed above, Native's compositions contained liquid triglycerides, and triethyl citrate was known to prevent the degradation of triglycerides in compositions for topical use.⁴¹

⁴¹ See n.21, above.

Native also discloses the use of tocopherol (Vitamin E) and various plant oils or plant oil-derived compounds in a deodorant stick. Stoia teaches that tocopherols are “abundant in sunflower seeds” and have antioxidant properties. Ex. 1058, 45. Stoia further describes the use of sunflower seed oil as an emollient in cosmetic compositions, characterizing it as “an effective, low-cost, and natural alternative” with “proven certain positive skin effects.” *Id.* A POSA therefore would have been motivated to include sunflower seed oil in Native’s deodorant stick for its emollient properties and association with “positive skin effects.” *Id.*; Ex. 1002, ¶¶182-185.

Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success in formulating Native’s deodorant stick based on Bianchi ’245 using Easy Homemade’s magnesium hydroxide antimicrobial as an alternative, or in addition, to baking soda, for the reasons discussed above. And a POSA would have had a reasonable expectation of success in using triethyl citrate as an antimicrobial in Native’s compositions because Anconi describes its successful use as an antimicrobial in deodorants, and others had successfully formulated compositions for topical application using triethyl citrate to prevent the degradation of triglycerides. Moreover, a POSA would have had a reasonable expectation of success in using sunflower seed oil as an emollient in Native’s deodorant stick based on Stoia because Native’s stick already contained plant oil or plant oil-derived emollients, such as coconut oil, which could simply be

reduced if necessary to balance the desired structural characteristics of the stick while maintaining or enhancing its emollient effect.

Finally, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials and emollients, as simple design choices. Ex. 1002, ¶¶186-187.

Analogous Art

Native, Bianchi '254, Easy Homemade, Anconi, and Stoia are in the same field as the '706 Patent, and all relate to personal care compositions, including deodorants and/or antiperspirants.⁴² See Ex. 1001, Abstract, 18:65-26:36; Ex. 1007, 5-8, 11; Ex. 1008, Abstract, ¶¶[0010]-[0021]; Ex. 1009, 5-9; Ex. 1057, Title, Abstract, [0001]-[0011], [0038], [0049]; Ex. 1058, 45-47; Ex. 1002, ¶188.

'706 Patent Claims	Obviousness Based on Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia
16. A deodorant stick comprising:	See claim 1 analysis of ground 6, above. Ex. 1002, ¶189.
a. at least about 25% by weight liquid triglyceride;	See claim 1 analysis of ground 6, above. Ex. 1002, ¶190.
b. a starch;	Native discloses a deodorant stick that comprised arrowroot powder, which is a starch, as a POSA would have known. ⁴³

⁴² See n.6, above.

⁴³ See Ex. 1068, 62.

	Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶191.
c. stearyl alcohol;	Native discloses a deodorant stick that comprised stearyl alcohol. Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶192.
d. magnesium hydroxide;	See claim 2 analysis of ground 7, above. Ex. 1002, ¶193.
e. beeswax;	Native discloses a deodorant stick that comprised beeswax. Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶194.

f. shea butter;	Native discloses a deodorant stick that comprised shea butter. Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶195.
g. coconut oil;	Native discloses a deodorant stick that comprised coconut oil. Ingredients Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11; Ex. 1002, ¶196.
h. triethyl citrate;	Native describes using baking soda in its deodorant compositions. As discussed above, baking soda was thought to cause skin irritation. Anconi discloses triethyl citrate as an “ingredient[] known to have antibacterial and deodorant properties.” Ex. 1057, ¶[0027]. Accordingly, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Native’s deodorant compositions, and would have had a reasonable expectation of success in doing so, to improve their ability to combat odor, after replacing or reducing baking soda to avoid skin irritation. A POSA further would have been motivated to include triethyl citrate in Native’s deodorant compositions because, as discussed above, those

	compositions contained liquid triglyceride, and triethyl citrate was known to prevent the degradation of triglycerides in compositions for topical use. ⁴⁴ Ex. 1002, ¶197.
i. jojoba seed oil; and	Native discloses a deodorant stick that comprised jojoba esters, which, as a POSA understood, were derived from jojoba seed oil.⁴⁵ Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Ingredients Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term “fragrance” to refer to these oils. Ex. 1007, 11. A POSA also would have been motivated to use jojoba oil in Native’s deodorant, and would have had a reasonable expectation of success in doing so, in view of its known emollient properties.⁴⁶ Ex. 1002, ¶¶198-199.
j. sunflower seed oil;	Native describes a deodorant stick comprising various plant oils and tocopherol, which is abundant in sunflower seed oil. Ex. 1058, 45. Stoia discloses the “proven . . . positive skin effects” of sunflower seed oil in cosmetic compositions. <i>Id.</i> A POSA therefore 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. Ex. 1002, ¶200.

⁴⁴ See n.21, above.

⁴⁵ See Ex. 1065, 1; Ex. 1061, 296.

⁴⁶ See n.29, above.

said deodorant stick being free of an aluminum salt.	<i>See claim 1 analysis of ground 6, above. Ex. 1002, ¶201.</i>
17. The deodorant stick of claim 16, further comprising a fragrance.	<i>See claim 15 analysis of ground 6, above. Ex. 1002, ¶202.</i>
18. The deodorant stick of claim 16, further comprising at least one essential oil.	<i>See claim 15 analysis of ground 6, above. Ex. 1002, ¶203.</i>
19. The deodorant stick of claim 16, further comprising a natural fragrance.	<i>See claim 15 analysis of ground 6, above. Ex. 1002, ¶204.</i>

Claims 20-23 are identical to claims 16-19 except they do not recite “a starch,” and therefore are obvious for the same reasons claims 16-19 are obvious. Ex. 1002, ¶¶205-218.

ix. Ground 9 – Claims 16-23 are Obvious Over Squatch in view of Sturgis

Overview of the Combination

Ground 9 relies on the priority date challenge set forth in Section VI.A.i above, namely, that claims 16-23 are not entitled to a priority date before the December 17, 2020 filing of the '706 Patent.

Squatch in view of Sturgis renders obvious claims 16-23. Squatch is a website excerpt disclosing known aluminum-free deodorant formulations that comprise caprylic/capric triglyceride, arrowroot powder, stearyl alcohol, and magnesium hydroxide. Squatch published on a well-known website, which received over 12.5 million views in November 2020. Ex. 1059, 2-5, 11, 13. A POSA looking to formulate new deodorant compositions would have looked to existing formulations and would have understood that commercial deodorant brands typically provided ingredient lists of their products on their websites. Squatch, in particular, was a website that would have been well known to a POSA, inasmuch as Dr. Squatch was a well-known personal care company. *Id.*

Sturgis is an application with the same disclosure as the '706 Patent. Because claims 16-23 are not entitled to a priority date before the December 17, 2020, filing date, Sturgis is prior art. *Indivior UK Ltd. v. Dr. Reddy's Labs S.A.*, 18 F.4th 1323, 1325 (Fed. Cir. 2021) (invalidating claims of continuation patent based on priority application's failure to provide written description support for those claims).

While Squatch describes a deodorant stick comprising ingredients recited in claims 16-23, it does not disclose the quantitative amounts of those ingredients. A POSA therefore would have looked to Sturgis for guidance on the amounts of ingredients when formulating an aluminum-free deodorant stick such as Squatch's

deodorant stick. And Sturgis discloses the same amount of liquid triglyceride recited in claims 16-23. Ex. 1002, ¶¶219-222.

Motivation Supporting the Combination

A POSA would have looked to Squatch for the same reasons a POSA would have looked to Native, as Squatch similarly provided ingredients in order of predominance for a known deodorant stick. And a POSA would have combined Squatch with Sturgis for the same reasons the POSA would have combined Native with Bianchi '254; Sturgis, unlike Squatch, teaches the quantitative concentrations of ingredients such as the caprylic/capric triglyceride included in Squatch's deodorant at undisclosed concentrations. Ex. 1002, ¶¶223-224.

Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success in formulating Squatch's deodorant stick based on Sturgis for the same reasons discussed above with respect to Native and Bianchi '254; Sturgis teaches the conventional weight percentages to be used for the liquid triglyceride component of Squatch's deodorant stick such that the combination would aid the POSA in making a deodorant similar to Squatch's. Ex. 1002, ¶¶225-226.

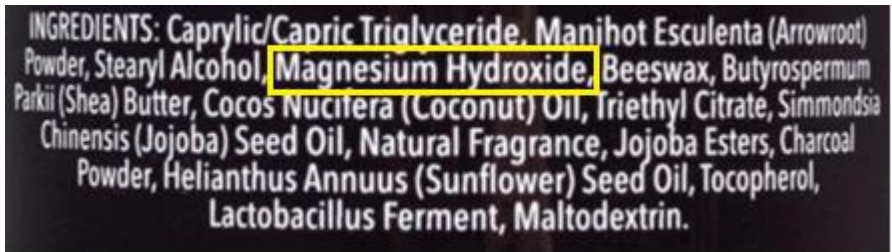
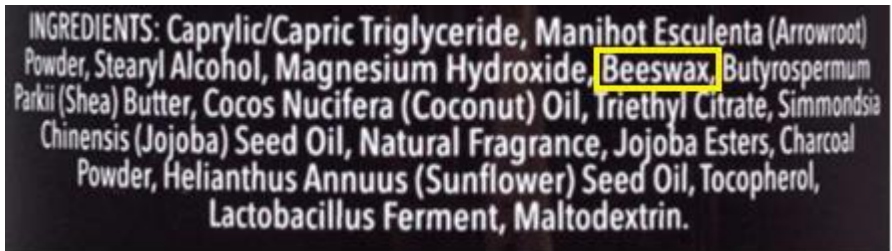
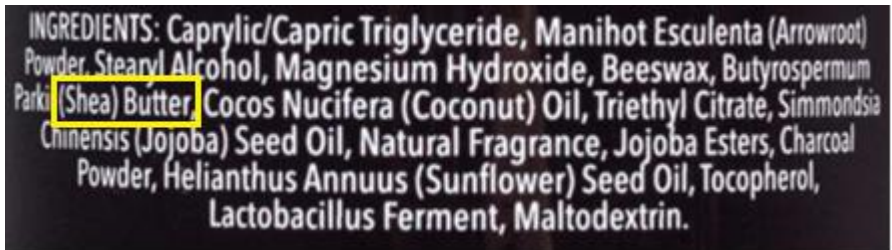
Analogous Art

Squatch and Sturgis are in the same field as the '706 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.⁴⁷ See Ex. 1001, Abstract, 18:65-26:36; Ex. 1059, 2-4, 7-9; Ex. 1058, 45-47; Ex. 1002, ¶227.

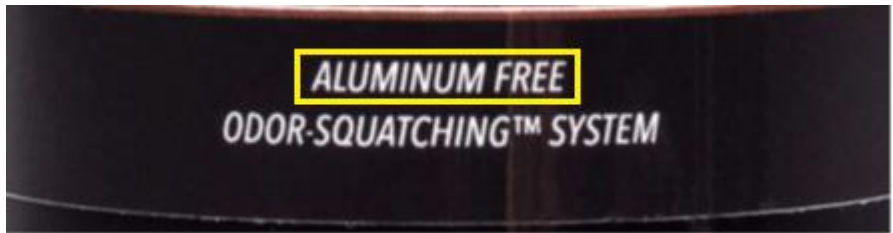
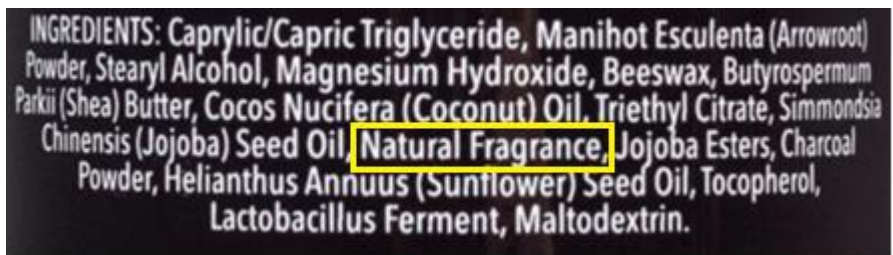
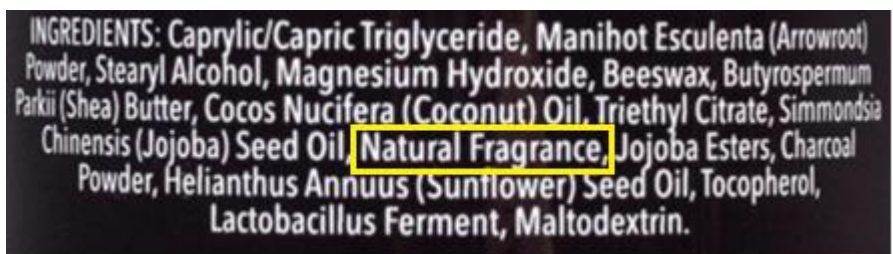
'706 Patent Claims	Obviousness Based on Squatch in view of Sturgis
16. A deodorant stick comprising:	To the extent the preamble is limiting, Squatch teaches a deodorant stick. Ex. 1059, 8; Ex. 1002, ¶228.
a. at least about 25% by weight liquid triglyceride;	Squatch describes a deodorant stick that comprised, as its first and thus most predominant ingredient, caprylic/capric triglyceride, which the '706 Patent describes as an exemplary liquid triglyceride. Ex. 1001, 14:41-46.

⁴⁷ See n.6, above.

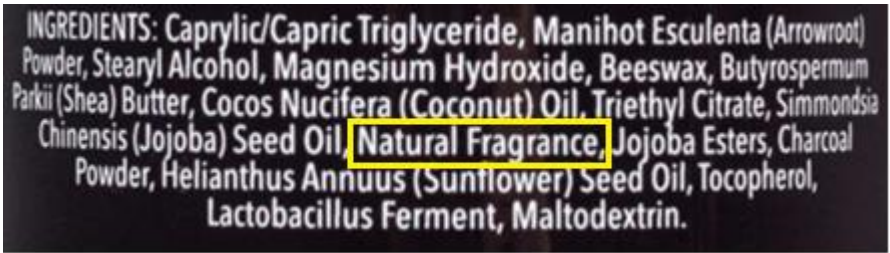
	INGREDIENTS: Caprylic/Capric Triglyceride, Manihot Esculenta (Arrowroot) Powder, Stearyl Alcohol, Magnesium Hydroxide, Beeswax, Butyrospermum Parkii (Shea) Butter, Cocos Nucifera (Coconut) Oil, Triethyl Citrate, Simmondsia Chinensis (Jojoba) Seed Oil, Natural Fragrance, Jojoba Esters, Charcoal Powder, Helianthus Annuus (Sunflower) Seed Oil, Tocopherol, Lactobacillus Ferment, Maltodextrin. Ex. 1059, 8. Because Squatch describes the use of liquid triglyceride but does not specifically state what percentage to use, a POSA would have looked to guidance in the field. Sturgis provides such guidance and establishes that using at least about 25% was a known option that a POSA would have understood could be relied upon to supplement the information from Squatch. Ex. 1056, ¶¶[0010], [0082]-[0085]; Ex. 1002, ¶¶229-230.
b. a starch;	Squatch discloses a deodorant stick that comprised arrowroot powder, which is a starch (see n.35, above), as a POSA would have known. INGREDIENTS: Caprylic/Capric Triglyceride, Manihot Esculenta (Arrowroot) Powder, Stearyl Alcohol, Magnesium Hydroxide, Beeswax, Butyrospermum Parkii (Shea) Butter, Cocos Nucifera (Coconut) Oil, Triethyl Citrate, Simmondsia Chinensis (Jojoba) Seed Oil, Natural Fragrance, Jojoba Esters, Charcoal Powder, Helianthus Annuus (Sunflower) Seed Oil, Tocopherol, Lactobacillus Ferment, Maltodextrin. Ex. 1059, 8; Ex. 1002, ¶231.
c. stearyl alcohol;	Squatch discloses a deodorant stick that comprised stearyl alcohol. INGREDIENTS: Caprylic/Capric Triglyceride, Manihot Esculenta (Arrowroot) Powder, Stearyl Alcohol, Magnesium Hydroxide, Beeswax, Butyrospermum Parkii (Shea) Butter, Cocos Nucifera (Coconut) Oil, Triethyl Citrate, Simmondsia Chinensis (Jojoba) Seed Oil, Natural Fragrance, Jojoba Esters, Charcoal Powder, Helianthus Annuus (Sunflower) Seed Oil, Tocopherol, Lactobacillus Ferment, Maltodextrin.

	Ex. 1059, 8; Ex. 1002, ¶232.
d. magnesium hydroxide;	Squatch discloses a deodorant stick that comprised magnesium hydroxide.  Ex. 1059, 8; Ex. 1002, ¶233.
e. beeswax;	Squatch discloses a deodorant stick that comprised beeswax.  Ex. 1059, 8; Ex. 1002, ¶234.
f. shea butter;	Squatch discloses a deodorant stick that comprised shea butter.  Ex. 1059, 8; Ex. 1002, ¶235.
g. coconut oil;	Squatch discloses a deodorant stick that comprised coconut oil.

	INGREDIENTS: Caprylic/Capric Triglyceride, Manihot Esculenta (Arrowroot) Powder, Stearyl Alcohol, Magnesium Hydroxide, Beeswax, Butyrospermum Parkii (Shea) Butter, Cocos Nucifera (Coconut) Oil, Triethyl Citrate, Simmondsia Chinensis (Jojoba) Seed Oil, Natural Fragrance, Jojoba Esters, Charcoal Powder, Helianthus Annuus (Sunflower) Seed Oil, Tocopherol, Lactobacillus Ferment, Maltodextrin. Ex. 1059, 8; Ex. 1002, ¶236.
h. triethyl citrate;	Squatch discloses a deodorant stick that comprised triethyl citrate. INGREDIENTS: Caprylic/Capric Triglyceride, Manihot Esculenta (Arrowroot) Powder, Stearyl Alcohol, Magnesium Hydroxide, Beeswax, Butyrospermum Parkii (Shea) Butter, Cocos Nucifera (Coconut) Oil, Triethyl Citrate, Simmondsia Chinensis (Jojoba) Seed Oil, Natural Fragrance, Jojoba Esters, Charcoal Powder, Helianthus Annuus (Sunflower) Seed Oil, Tocopherol, Lactobacillus Ferment, Maltodextrin. Ex. 1059, 8; Ex. 1002, ¶237.
i. jojoba seed oil; and	Squatch discloses a deodorant stick that comprised jojoba seed oil. INGREDIENTS: Caprylic/Capric Triglyceride, Manihot Esculenta (Arrowroot) Powder, Stearyl Alcohol, Magnesium Hydroxide, Beeswax, Butyrospermum Parkii (Shea) Butter, Cocos Nucifera (Coconut) Oil, Triethyl Citrate, Simmondsia Chinensis (Jojoba) Seed Oil, Natural Fragrance, Jojoba Esters, Charcoal Powder, Helianthus Annuus (Sunflower) Seed Oil, Tocopherol, Lactobacillus Ferment, Maltodextrin. Ex. 1059, 8; Ex. 1002, ¶238.
j. sunflower seed oil;	Squatch discloses a deodorant stick that comprised sunflower seed oil. INGREDIENTS: Caprylic/Capric Triglyceride, Manihot Esculenta (Arrowroot) Powder, Stearyl Alcohol, Magnesium Hydroxide, Beeswax, Butyrospermum Parkii (Shea) Butter, Cocos Nucifera (Coconut) Oil, Triethyl Citrate, Simmondsia Chinensis (Jojoba) Seed Oil, Natural Fragrance, Jojoba Esters, Charcoal Powder, Helianthus Annuus (Sunflower) Seed Oil, Tocopherol, Lactobacillus Ferment, Maltodextrin.

	Ex. 1059, 8; Ex. 1002, ¶239.
said deodorant stick being free of an aluminum salt.	Squatch discloses a deodorant stick that is free of an aluminum salt.  Ex. 1059, 8; Ex. 1002, ¶240.
17. The deodorant stick of claim 16, further comprising a fragrance.	Squatch discloses a deodorant stick that comprised a natural fragrance.  Ex. 1059, 8; Ex. 1002, ¶241.
18. The deodorant stick of claim 16, further comprising at least one essential oil.	Squatch discloses a deodorant stick that comprised a natural fragrance.  Ex. 1059, 8. A POSA would have understood the natural fragrance to include essential oil.⁴⁸ A POSA also would have been motivated to include essential oil in the Squatch

⁴⁸ See Ex. 1007, 11.

	deodorant, and would have had a reasonable expectation of success in doing so, in view of Sturgis’s disclosure of compositions comprising essential oils along with other ingredients in Squatch’s deodorant, e.g., caprylic/capric triglyceride and magnesium hydroxide, as well as Sturgis’s guidance that consumers desired essential oils in deodorant sticks. Ex. 1056, ¶¶[0004], [0117]-[0118]; Ex. 1002, ¶¶242-243.
19. The deodorant stick of claim 16, further comprising a natural fragrance.	Squatch discloses a deodorant stick that comprised a natural fragrance.  Ex. 1059, 8; Ex. 1002, ¶244.

Claims 20-23 are identical to claims 16-19 except they do not recite “a starch,” and therefore are obvious for the same reasons claims 16-19 are obvious. Ex. 1002, ¶¶245-258.

VIII. CONCLUSION

Petitioner submits that claims 1-8 and 10-23 of the ’706 Patent are unpatentable and requests institution of *Inter Partes* Review.

DATED: July 17, 2024

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this petition complies with the word count limitation of 37 C.F.R. § 42.24(a)(1)(i) because the petition contains a total of 13,973 words. This total excludes the cover page, signature block, and the parts of the petition exempted by 37 C.F.R. § 42.24(a)(1).

DATED: July 17, 2024

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CERTIFICATE OF SERVICE

The undersigned certifies that a complete copy of this Petition for *Inter Partes* Review of U.S. Patent No. 11,497,706 and all Exhibits and other documents filed together with this Petition were served on the official correspondence address for the patent shown in PAIR via FEDERAL EXPRESS next business day delivery, on this date:

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CENTRAL BUILDING, C9
ONE PROCTER AND GAMBLE PLAZA
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