

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Dr. Squatch LLC

Petitioner

v.

The Procter & Gamble Company

Patent Owner

Case IPR2024-01104

U.S. Patent No. 11,540,999

PATENT OWNER'S SUR-REPLY

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PETITIONER DOES NOT MEET ITS BURDEN ON HARDNESS	2
	A. No Reference Teaches the Claimed Composition’s Hardness, Which Necessarily Depends On Use of the Test Described in the ’999 Patent	2
	B. Petitioner’s Post-Hoc Testing is Unreliable and Cannot Salvage Its <i>Prima Facie</i> Case.	8
	C. Petitioner’s “Routine Optimization” Argument Lacks Merit.	15
III.	THE LESNIAK-BASED GROUNDS ARE UNAVAILING	17
	A. Lesniak’s Struggle With Stability Shows the Art Is Unpredictable. ..	17
	B. If Lesniak is an Antiperspirant, It Contains Aluminum.	18
	C. A POSA Would Not Have Combined Lesniak and Phinney.	20
	D. Petitioner’s Combinations With Lesniak Are Based In Hindsight.	21
IV.	THE NATIVE-BASED GROUNDS FARE NO BETTER	23
	A. Petitioner’s Combinations With Native Are Also Based In Hindsight.	23
	B. Petitioner Has Not Shown the Public Accessibility of Easy Homemade.	25
V.	CONCLUSION.....	26

EXHIBIT LIST

Exhibit No.	Description
Ex. 2001	Full File History of the '999 Patent
Ex. 2002	U.S. Pat. No. 5,433,943 (“Osipow”)
Ex. 2003	Mayo Clinic, <i>Zinc Oxide (Topical Application Route)</i> , https://www.mayoclinic.org/drugs-supplements/zinc-oxide-topical-application-route/description/drg-20075525
Ex. 2004	Wayback Machine, Mayo Clinic, <i>Zinc Oxide (Topical Application Route)</i> , https://web.archive.org/web/20150102193922/https://www.mayoclinic.org/drugs-supplements/zinc-oxide-topical-application-route/side-effects/drg-20075525?p=1 (archived Jan. 2, 2015)
Ex. 2005	U.S. Patent No. 10,966,915
Ex. 2006	U.S. Patent No. 10,543,164
Ex. 2007	International Publ. No. WO 99/21528
Ex. 2008	<i>Intentionally Omitted</i>
Ex. 2009	<i>Intentionally Omitted</i>
Ex. 2010	<i>Intentionally Omitted</i>
Ex. 2011	Declaration of Robert Lochhead, Ph.D.
Ex. 2012	Deposition Transcript of Dr. Michniak-Kohn (April 17, 2025)
Ex. 2013	CeraVe, <i>Products Formulated with Zinc Oxide</i> , available at https://www.cerave.com/skincare/zinc-oxide#:~:text=Zinc%20oxide%20sunscreen%20works%20by,active%20ingredients%20in%20chemical%20sunscreens (last accessed May 1, 2025).

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

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

I. INTRODUCTION

Petitioner failed to recognize and address fundamental differences between its cited art and the claimed subject matter, including with respect to hardness of the natural, aluminum-free compositions. Petitioner's Grounds contain no reference that discloses the claimed hardness range measured using a needle penetration test having a total load of 50 grams, which Petitioner's expert admits is the hardness test described in the '999 Patent (*see n.4 supra*). Petitioner's only references on hardness, Bianchi-518 and Bianchi-254, disclose aluminum- and silicone-containing compositions having hardness values measured using a *different test* than the '999 Patent. It was Petitioner's burden to establish—as part of its *prima facie* case of obviousness in its Petition—a meaningful correlation between the two different methods sufficient to justify the use of the Bianchi references in its obviousness case. Petitioner did not do so in its Petition, and its Reply testing, if considered, does not remedy Petitioner's failing. Petitioner's after-the-fact testing of currently marketed products of undisclosed formulations is highly suspect and irrelevant in any event: Even a cursory glance at the collected data shows Petitioner's purported “correlation” to be flawed and inaccurate.

What's more, Petitioner's combinations still suffer from the same deficiencies identified in the POR, including that they are based on a hindsight cobbling together of claimed features. As in its Petition, Petitioner's Reply cherry picks ingredients

from disparate prior art references—references that span completely different stick technologies—and, using the '999 Patent claims as a roadmap, contends that a POSA would have combined them. Petitioner's so-called motivations to combine are conclusory, and often contradictory. Petitioner's Reply is riddled with mischaracterizations and hand-waving, and does not salvage its *prima facie* case. For the reasons explained here and in the POR, the Board should reject the Petition and confirm the claims of the '999 Patent as patentable.

II. PETITIONER DOES NOT MEET ITS BURDEN ON HARDNESS

A. No Reference Teaches the Claimed Composition's Hardness, Which Necessarily Depends On Use of the Test Described in the '999 Patent

The '999 Patent recites a specific hardness range for its aluminum-free, magnesium hydroxide-containing compositions. The claimed range only makes sense in the context of the 50-g load version of the ASTM D-1321 needle test used to measure it, which a POSA would have understood. (*See, e.g.*, Ex. 1081, 110:8-16 (“I look at all the words of that claim, it tells me the range, it tells me the penetration, it tells me the stick, it tells me measure with ASTM-D1321 needle, and I go to the context and it tells me exactly how to do that.”); Ex. 1001, 12:24-25 (“Ensure the total weight of the shaft and needle is 50 ± 0.2 grams when the shaft is in free fall.”)). There is no dispute that the claimed hardness range, as measured by this method, is not disclosed in any reference Petitioner relies on in Grounds.

Petitioner tries to circumvent this roadblock by advancing two improper arguments: First, that the claimed hardness range is *not* tied to the hardness testing method described in the '999 Patent; and, second, even if it is so tied, it overlaps with the hardness ranges in the Bianchi references, which invoke *different* hardness testing methods. Both arguments are unavailing as discussed in this section and the next.

As to the first argument, Petitioner contends that the POSA would not actually understand the claimed hardness range with reference to the 50-g load ASTM D-1321 needle method. Rather, according to Petitioner, the POSA would understand the claimed hardness ranges with reference to a method not at all referenced in the '999 Patent, *i.e.*, the 100-g load ASTM D-1321 needle method. According to Petitioner, “if P&G had invented a different hardness test or intended to exclude ASTM D-1321 testing, it would not have reported testing conducted ‘*under ASTM D-1321*.’” (Reply, 13.) This assertion is nothing short of disingenuous—in fact, the Patent Owner did *not* “report testing conducted under ASTM D-1321.” It reported hardness testing according to results of “a needle penetration test *under ASTM D-1321 (as described herein)*.” (Ex. 1001, 3:8-9.) And, the *only* testing “*described herein*” is a *version* of the ASTM D-1321 test method that explicitly requires “the total weight of the shaft and needle is 50±0.2 grams when the shaft is in free fall,” with no additional load added: “The rod is then released and allowed to travel

downward, driven only by the weight of the needle (or cone) and the rod.” (*Id.* at 11:57-58, 12:24-25.)

As Dr. Lochhead explained in his deposition, it is “common” for a POSA, when testing materials, to modify a test method based on the material being tested. (Ex. 1081, 109:1-7 (Dr. Lochhead explaining “[i]t’s common for materials to modify a method to measure what you’re trying to measure...”) This makes sense in the present context in particular because the invention was seeking to address the problem of, *inter alia*, prior art natural deodorant sticks that were too hard. A test that might have been appropriate for these too-hard sticks would need to be modified to assess the proper hardness of a softer stick. That is, a load of greater mass appropriate for a hard material could penetrate straight through a softer stick material and provide no read-out (and conversely, a lesser load useful to assess the hardness of a soft material might not penetrate a harder material at all, and provide no read-out). Tailoring the hardness test to the material that is to be measured is standard practice. (*See id.*)

Petitioner attempts to wave off the express language of the ’999 Patent requiring a total load of 50 grams by calling it “not part of the test at all” and merely

“periodic calibration.”¹ (Reply, 14). But it would be nonsensical for a patent to call for calibration of an instrument using a different load than what is used during its test. As the ’999 Patent explains, the “periodic calibration” is to “[e]nsure” the instrument’s total load remains consistent and within proper parameters (*i.e.*, “50±0.2 grams”) *upon use*. (See Ex. 1001 at 12:24-25; *see also id.* at 12:29-34 (“At time of use confirm... [t]he penetrometer is level and the shaft is clean, straight and falls freely.”))

Petitioner’s “calibration” argument is further belied by the plain language of the specification that explains “[t]he rod is then released and allowed to travel downward, *driven only by the weight of the needle (or cone) and the rod*” (*i.e.*, with no extra load) (*id.* at 11:57-58), as well as by an older P&G patent that Petitioner cites. (Reply, 18 n.9.) As to that patent, Petitioner highlights (in bold) the use of a similar modified ASTM method where the “total weight of the needle and shaft in the penetrometer is 50.00±0.05 grams.”² (See Ex. 1025, 12:41-55.) Petitioner

¹ Petitioner also argues this “[p]eriodic calibration” comports with the ASTM D-1321 standard,” but the standard does not include any such calibration. (See Ex. 2018.) The only calibration in ASTM D-1321 is with respect to the indicator scale as to penetration depth. (*Id.* at 5.)

² Petitioner did not assert Ex. 1025 as a primary or secondary reference in any invalidity ground because that patent is directed to a gel deodorant with completely

paradoxically touts Patent Owner's use of the 50-g method in one instance, and claims it does not exist in the next.

Unlike the 50-g test of the '999 Patent, the references Petitioner relies on for hardness, Bianchi-518 and Bianchi-254, both use a 100-g load to measure the hardness of its aluminum- and silicone-containing antiperspirant compositions. Petitioner does not dispute that Bianchi-518 has this 100-g load requirement, but argues Bianchi-254 does not. Petitioner contends "P&G's interpretation of Bianchi-254 contradicts its interpretation of the '999 Patent claims," purportedly because "Bianchi-254's 'Hardness Method' identifies only the relevant needle ('a 2.5 gm brass/steel tapered needle (DIN 51-579)'), without describing any additional weight or explicitly mandating full compliance with the DIN 51-579 standard." (Reply, 21.) Petitioner is wrong.

As Dr. Lochhead explains, a POSA would have understood Bianchi-254's disclosure to be referring to the 100-g DIN 51-579 needle penetration testing method. (Ex. 2011, ¶ 125.) Unlike the '999 Patent, Bianchi-254 does not include an express disclosure modifying the amount of load to use in connection with the disclosed methodology. Where a method is not modified, a POSA understands it to rely on the standard load as specified in the published method. (*See id.*) Even if that was

different properties and ingredients than claimed in the '999 Patent. (*See generally* Ex. 1025.)

not the case, the only weight specified in Bianchi-254 is the 2.5 gram needle. If it is Petitioner's position that Bianchi-254 does not require an additional load, and thus its penetration test is driven by the fall of a 2.5 g needle, that is *still* a different method than the '999 Patent (though Petitioner's interpretation would lack reason, as a 2.5 gram needle would not be capable of penetrating the compositions to the extent reported in Bianchi-254.)

Finally, Petitioner heavily relies on the *Conopco* case, but that case is inapposite. (*See* Reply, 15.) The challenged patent in *Conopco* claimed a series of indices that served as proxies for optimized and arguably subjective shampoo parameters. Unlike hardness, which is a common parameter used to describe a key and well-established metric across the cosmetics industry (including within Petitioner's prior art), the proxies in *Conopco* were not standard parameters. Instead, they represented new tests outlined in the challenged patent. Here, Patent Owner employed a well-accepted, objective, and quantitative property of deodorant sticks, as evidenced by the prior art on which Petitioner itself relies. Indeed, there are universal standards directed to measuring hardness of all sorts of compositions. Patent Owner's specific implementation of the objective hardness test employs the common method of measuring hardness in a particular way, adapted to its composition, and not a new, unusual, subjective method. As discussed above, different compositions may require adaptations of analytical methods. This standard

practice is distinguishable from the creation of the new subjective proxies in *Conopco*.

B. Petitioner's Post-Hoc Testing is Unreliable and Cannot Salvage Its *Prima Facie* Case.

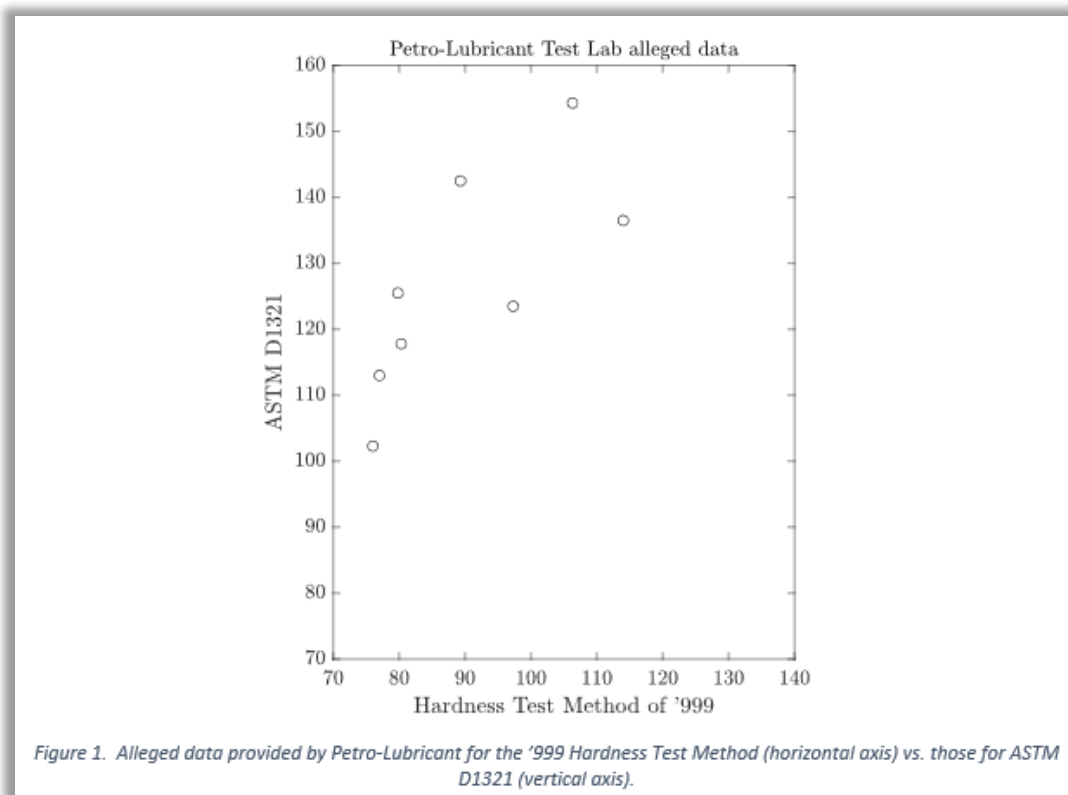
Petitioner's second argument in an attempt to address its failed *prima facie* case of obviousness with respect to the hardness limitation—advancing a purported correlation between the test methods of the Bianchi references and the '999 Patent—fares no better. It appears that without saying as much, Petitioner is trying to make a clearly improper new Bianchi inherency argument, arguing that a POSA seeking to achieve the hardness range disclosed in the Bianchi references for aluminum- and silicone-containing compositions would (unbeknownst to her) hit the '999 hardness range with respect to the claimed aluminum-free compositions. As an initial matter, the Board should disregard this new and improperly submitted testing for the reasons set forth in Patent Owner's August 14, 2025 submission. However, even if the Board is inclined to consider this testing, it is not what it purports to be. The test methods were performed with obvious outcome determinative bias, and, in any event, the test results fail to establish any scientifically significant correlation sufficient to provide the predictive value Petitioner claims.

As to this first problem—outcome determinative bias—Petitioner's testing was performed on a highly selective set of deodorant sticks of undisclosed formulations, and none with ingredients matching the Bianchi references (or any

other reference in Petitioner's Grounds).³ As such, the tested deodorant sticks are not representative of prior art compositions at the time of invention. And of course, Petitioner may not have disclosed other testing that was unhelpful to its carefully crafted narrative.

With respect to the second issue—the absence of a scientifically valid correlation—there are too many problems with Petitioner's testing and analysis to detail them all. *First*, Petitioner's "average delta" is a jerry-rigged number. Petitioner asserts "the average delta between the two test methods is about 37 mm*10, which means that the claimed range and Bianch-518's [*sic*] range overlap regardless of the test used." (Reply, 16.) Not so. This so-called "average delta" is not based on any consistent or even close to consistent difference between two numbers. It is just an average of a widely disparate and disconnected set of data points. Indeed, plotting Petitioner's data from the two methods reveals a cluster of points that cannot be reasonably fitted with a line or curve:

³ Petitioner has not provided any details regarding the products it tested, such as formulation, date purchased, lot codes, manufacture date, expiration date, etc. It appears Petitioner tested a currently marketed Native deodorant, which is a P&G product that has a significantly different formulation than the prior art Native stick Petitioner uses in its Grounds.



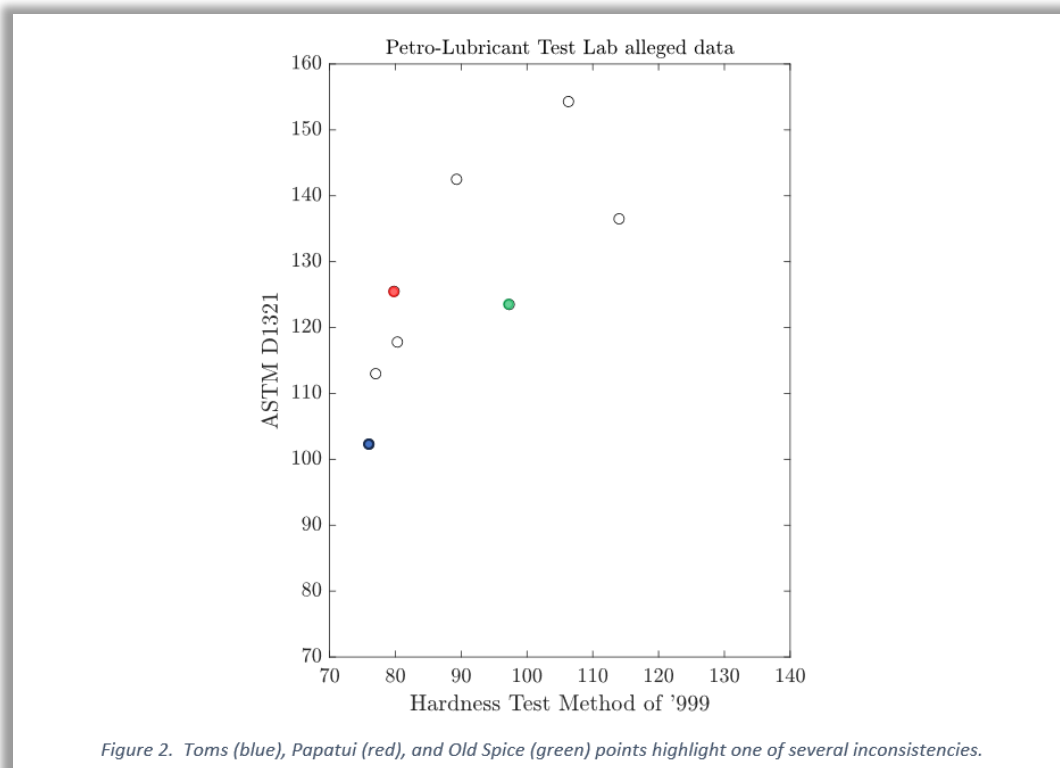
(See Ex. 1078.) Petitioner’s “average delta” is a meaningless number that provides no reliable correlation or relationship between the data points.

Second, as additional evidence that Petitioner’s alleged “correlation” is no viable correlation at all, the ordering of the hardness values of the tested deodorants differs based on what method was used. The below table reveals the ordering (hardest to softest) of Petitioner’s tested sticks under the '999 Patent method, as compared to the ordering (hardest to softest) as established by the ASTM D-1321 method. Again, correlation fails, with all but the hardest formulas being scrambled in their order.

P&G Method		ASTM D1321
Toms	→	Toms
Native	→	Native
Papatui	→	Sephora
Sephora	→	Old Spice
Billie	→	Papatui
Old Spice	→	Lume
Dove	→	Billie
Lume	→	Dove

Neither Petitioner nor its expert attempt to explain why the ranked hardness differs across the methods, and why that does not evidence a failed correlation. (It does.)

A *third* illustration of the inconsistencies that prevent any kind of reliable correlation is illustrated below in Figure 2. The point in blue corresponds to Toms, the point in red to Papatui, and the point in green to Old Spice.



(*See id.*) Looking at Toms and Papatui, the alleged hardness results under the '999 Patent method are 76.0 and 79.8, respectively, for a difference of 3.8. However, the alleged hardness results for those same two sticks using the ASTM D-1321 test method are 102.3 and 125.5, respectively, for a difference of 23.2, or a relative difference of over 20%. (*Id.*) So here, although the sticks have close to the same hardness under the '999 method, their hardness differs by over 20% using the ASTM D-1321 method.

The same irregularities can be seen in the reverse, where sticks with nearly identical results under the ASTM D-1321 method have much larger differences under the '999 test. For example, Paptui (red) and Old Spice (green) have a relative difference of just 1.6% between their hardness values under the ASTM D-1321 method, yet their '999 method hardness values yield a relative difference of about 20%. Petitioner and its expert failed to address these inconsistencies yet contend there is a clear correlation between the data.

Fourth, if Petitioner's data is reliable in the slightest (it's not), all it shows is that hardness is highly dependent on product formulation specifics. Notably, Petitioner failed to disclose the formulations of the tested products, and therefore they cannot be taken as representative of the Bianchi references' antiperspirant sticks. If Petitioner wanted to show any type of meaningful correlation as to the hardness ranges disclosed in the Bianchi references (which, contrary to Petitioner's assertion,

are tied explicitly to the aluminum- and silicone-containing antiperspirants disclosed therein (*see* POR, 43-44, 58-59)), Petitioner should have tested Bianchi's sticks, or at least sticks with the same components. Petitioner did neither.

Fifth, Petitioner's testing methodology itself is suspect. In providing direction to the testing facility Petro-Lubricant, Dr. Michniak-Kohn stated "[t]he instructions for this test were taken from the specification of the '999 Patent."^{4,5} (Ex. 1086, n.1.) But Petitioner provides scant evidence that Petro-Lubricant's testing followed the method in the '999 Patent. Petro-Lubricant provided only one photo in Ex. 1079 depicting samples in the test set-up, reproduced below. Circled in yellow appear to be brass cups to which the samples were transferred for testing. This is inconsistent with Dr. Michniak-Kohn's provided instruction that unambiguously states: "Do not remove deodorants from original containers or melt them." (*Id.*, Ex. A.)

⁴ In admitting the specification of the '999 Patent "provides instructions for" a hardness test different than the ASTM D-1321 standard method, Dr. Michniak-Kohn contradicts Petitioner, who insists the '999 Patent "report[s] testing conducted 'under ASTM D-1321,'" and does not provide a modified method. (*See* Reply, 13-14.)

⁵ Dr. Michniak-Kohn is incorrect that all of her instructions were "taken from the specification of the '999 Patent," as she told the testing facility to "slice off top ½ inch of product" when preparing samples, yet the '999 Patent says to "slice off top inch." (*Compare* Ex. 1086, Ex. A, *with* Ex. 1001, 12:40.)



Petro-Lubricant does not appear to have followed the testing method of the '999 Patent or Dr. Michniak-Kohn's own instructions, and instead removed the test product samples from their containers, and melted down and packed the samples into small metal testing cups. Such manipulation of samples could affect the hardness values measured, and calls into question the integrity of the testing. This is another reason why the Board should give no weight to Petitioner's late-filed testing and declaration.

In short, Petitioner failed to show the Bianchi ranges overlap “at all”⁶ with the claimed range in its Petition. That was Petitioner’s burden. The post-hoc, unreliable “correlation” does not solve Petitioner’s problem and cannot salvage its *prima facie* case.

C. Petitioner’s “Routine Optimization” Argument Lacks Merit.

When all else fails, argue “routine optimization”—that’s exactly what Petitioner tries to do as a last ditch effort on hardness. (Reply, 17.) To no avail.

Petitioner contends “adjusting the amount of structurant (e.g., beeswax) to achieve a desired hardness was a matter of routine optimization well within the skill of a POSA.” (*Id.*) Petitioner’s argument requires the POSA to have a “desired hardness” to shoot for, which according to Petitioner’s *prima facie* case, is supplied by the Bianchi references. But the Bianchi references provide the *wrong target* for the reasons discussed above, including because they use a different test and disclose much harder sticks. (*See* POR, 39-46, 55-60.) And importantly, the hardness values disclosed in both Bianchi-518 and Bianchi-254 represent ranges for sticks containing

⁶ Petitioner repeatedly highlights Patent Owner’s statement that the disclosed ranges were not overlapping “at all,” but rather showed similar values for different methods, as if it is incorrect. The Petition did not show ranges that overlap “at all”—it showed ranges that reflect very similar penetration values for very different load weights. (*See* POR, 42.) All Patent Owner and Dr. Lochhead did was point out Petitioner’s failure of proof.

vast amounts of aluminum and silicones. (*See id.*) Patent Owner’s invention is just that, an *invention* that provides for aluminum- and silicone-free compositions with the optimal hardness for deodorant sticks “compris[ing] consumer-perceived natural ingredients, while offering a pleasant consumer experience in terms of its hardness.” (Ex. 1001, 3:57-60.)

Petitioner puts forth P&G’s prior patent (Ex. 1041) as an alleged admission that a POSA could have “easily” adjusted the hardness of the stick by increasing or decreasing the amount of wax. (*See Reply*, 17.) The “easily” language comes from a 1975 patent on antiperspirants containing aluminum and optionally silicone, and does not speak to the state of the art as to natural deodorant sticks. As the ’999 Patent explains, prior to the invention, no one had figured out how to create natural deodorants having similar consumer-preferred characteristics (including as to hardness) as their non-natural, silicone- and aluminum-containing counterparts. (Ex. 1001, 1:21-35.) Petitioner’s mischaracterization of Ex. 1041 also does not change the fact that, even if it was “easy” (it’s not), the POSA would have required a target for its routine optimization goal, and Petitioner provides none in its Grounds that match the requirements of the claims.

Petitioner’s “routine optimization” contentions are further contradicted by its own expert and by Lesniak, which as explained below, shows that varying hardness requires more than merely increasing or decreasing the amount of structurant (e.g.,

wax) to maintain a stable, non-separated stick. As Dr. Lochhead explained and Dr. Michniak-Kohn agreed, hardness and other physical properties are highly dependent on not just the amount of structurant, but also its interactions with the other ingredients in the composition. (Ex. 2011, ¶ 65; Ex. 2012, 46:13-20 (“Q So the combination of the structurant and the liquid carriers gives the stick an appropriate hardness? A Yes, the whole -- plus the whole formulation of this -- that forms the stick. But these are the essential combination that result in the appropriate viscosity and hardness of the stick.”) Plus, it is un rebutted that neither Petitioner nor its expert could provide a starting point for the POSA as to Lesniak’s hardness in the first place, and could not tell if Lesniak was too hard, or too soft, as compared to the claimed range. (See POR, 45-46.) For all of these reasons, Petitioner’s Lesniak and Native Grounds fail as to the hardness limitation of all claims.

III. THE LESNIAK-BASED GROUNDS ARE UNAVAILING

A. Lesniak’s Struggle With Stability Shows the Art Is Unpredictable.

Petitioner misapprehends Patent Owner’s arguments as to Lesniak’s instability. Lesniak’s Table 2 shows that even small changes in a composition can yield unstable results. This is contrary to Petitioner’s “routine optimization” claims that stick properties, like hardness, can be “predictably chang[ed] based on the amount of structurant.” (Reply, 17.) As Lesniak shows, and as explained in more detail in the POR, changing the amount of structurant, even in the slightest, can

produce an unstable stick that has “separate[ed] into two bulk phases.” (POR, 26-30; Ex. 2011, ¶ 64.) Moreover, as Dr. Lochhead explained, a POSA would have known that beeswax forms large spherulite crystals in some oil carriers, but needle-like crystals in others, affecting properties like hardness. (Ex. 2011, ¶ 65.) Thus, hardness and other physical properties are highly dependent on not just the amount of wax, but also its interactions with the other ingredients in the composition.

B. If Lesniak is an Antiperspirant, It Contains Aluminum.

Lesniak is non-enabling as to a “deodorant stick,” for the reasons explained in the POR. (POR, 25-31.) “[I]f an obviousness case is based on a non-self-enabled reference, and no other prior art reference or evidence would have enabled a skilled artisan to make the claimed invention, then the invention cannot be said to have been obvious.” *Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1377 (Fed. Cir. 2021). In this case, Petitioner relies on Lesniak’s one-sentence disclosure of “antiperspirant,” to argue Lesniak’s compositions could be deodorant sticks. (*E.g.*, Petition, 24 (“Lesniak describes ... a deodorant stick in the form of an antiperspirant stick.”) But a POSA’s understanding of “antiperspirants,” now and at the time of Lesniak, is that they contain aluminum. (*See, e.g.*, Ex. 1081, 60:12-14 (“[A] POSA would understand if you’re talking about an antiperspirant, it has to have

aluminum.”); Ex. 2011, ¶¶ 50-52.)⁷ Petitioner asks the Board to ignore FDA requirements, a POSA’s understanding in light of such requirements, and *Petitioner’s own statements on its website*, and find that antiperspirants do not contain aluminum. They do, and Petitioner has made that clear:

- “Aluminum is the sweat blocking active ingredient in antiperspirant products.” (Ex. 2017, 2.)
- “[T]he most important difference between antiperspirant [and deodorants] is actually one specific ingredient, aluminum.” (*Id.*)
- “If that stink stick contains **aluminum**, the product is an antiperspirant.” (*Id.* (emphasis in original).)

Petitioner relies on *Persion Pharms.* in urging the Board to disregard FDA requirements, but the district court there *did* consider FDA submissions as evidence of what “would have been relevant to a person of ordinary skill,” and the Federal Circuit found “no clear error in the district court’s findings on the relevance of [the

⁷ Petitioner inappropriately mischaracterizes Dr. Lochhead’s testimony regarding a book that he co-edited on cosmetic formulations as an attempt to “evade” what was written that “undercuts his credibility.” (Reply, 4.) Dr. Lochhead did not “evade” anything—he testified that he did not write the portion of the book Petitioner highlights but did participate as an editor, and also noted that the research that was presented therein was never practiced. (Ex. 1081, 89:13-99:22.)

FDA] data to [the POSA].” *Persion Pharms. LLC v. Alvogen Malta Operations Ltd.*, 945 F.3d 1184, 1193-94 (Fed. Cir. 2019).

If Lesniak enables “a deodorant stick in the form of an antiperspirant stick” in light of a POSA’s knowledge (*see* Petition, 24; Reply, 9), then it contains aluminum, an ingredient prohibited by the claims.⁸

C. A POSA Would Not Have Combined Lesniak and Phinney.

Petitioner does not overcome the many issues with the Lesniak-Phinney combination that Patent Owner presented in the POR. (*See* POR, 33-38.) Petitioner argued in its Petition that a POSA would have been motivated to combine Lesniak and Phinney because “Lesniak teaches using zinc oxide (a known antimicrobial), while Phinney teaches that combining magnesium hydroxide with zinc oxide improves antimicrobial properties.” (Petition, 27.) In its Reply, Petitioner disregards the distinction between zinc oxide and zinc *hydroxide*, ignoring that zinc *hydroxide* is what is combined with magnesium *hydroxide* in Phinney. (Ex. 1004, 5:31-33, 52-60 (noting “[t]he zinc hydroxide typically lowers the pH of the

⁸ Petitioner also contends “Lesniak’s supposed necessity of aluminum is further belied by the fact that Lesniak’s compositions include zinc oxide, and zinc compounds were known antiperspirant actives that could be alternatives to aluminum,” contending this is supported because “P&G’s patent family at-issue expressly states that antiperspirant actives include zinc salts.” (Reply, 5.) But zinc oxide (ZnO) is not a zinc salt (e.g., ZnCl₂).

magnesium hydroxide-perspiration odour-controlling formulation of the invention,” which “avoid[s] skin irritation.”) Contrary to Petitioner’s assertions, there is no Phinney composition where zinc oxide and magnesium hydroxide appear together. (*See id.*; *see also id.*, 4:48-51, 8:22-41 (explaining magnesium oxide and zinc oxide are both mixed with water to become their respective hydroxides, and that they “must be completely converted to their hydroxides or skin irritation will occur”).)

Petitioner also does not dispute the fact that Phinney and Lesniak’s metal oxides/hydroxides have entirely different uses, and a POSA would not have looked to combine their teachings on this topic. (*See* POR, 33.) Petitioner further had no answer to the ratio issues Phinney presents, including that it teaches to use three times the amount of magnesium hydroxide as zinc hydroxide. (*Id.*, 36-37.) (In Lesniak, ignoring the difference between zinc oxide and hydroxide for the purposes of argument, that would call for upwards of 60% magnesium hydroxide.) (*See id.*) The Lesniak and Phinney references are incompatible and the POSA would not have been motivated to combine their teachings.

D. Petitioner’s Combinations With Lesniak Are Based In Hindsight.

Finally, Petitioner’s combinations with Lesniak, including regarding additional or modified ingredients like stearyl alcohol, tapioca starch, and baking soda, fail for the reasons presented in the POR, including because they are deeply rooted in hindsight. (POR, 31-32, 46-53.) Petitioner uses the ’999 Patent claims as

a roadmap, selecting disparate pieces of prior art that disclose each of the ingredients, and forcing them together in an attempt to turn Lesniak's sunscreen into the claimed deodorant. Petitioner's combinations and motivations are contradictory, and ignore fundamental differences in the references. (*See id.*)

As but one example, Petitioner alleges a POSA would have been motivated to completely reformulate Lesniak to change its "primary structurant" from beeswax (Petition, 31) to stearyl alcohol, as is purportedly taught by Bianchi-254 (*id.*, 40). In both the Petition and Reply, Petitioner provides no reason why a POSA would have wanted to fundamentally change the main structurant in Lesniak's stick. Instead, Petitioner merely argues that stearyl alcohol was a "known structurant[]." (Reply, 19.) This omission is particularly damaging in light of Petitioner's argument that Lesniak teaches stable compositions due to the presence of two waxes: a first wax (that purports to serve as the primary structurant) and "a secondary wax." (*See* Reply, 7-8 (citing Ex. 1003, 1:39-54 (requiring "a first wax... present in the amount of 5 to 25 weight %" and "a second wax ... presented in an amount of 0.5 to 15 weight %").) Petitioner does not address how a change in the primary structurant, from Lesniak's "first wax" to Bianchi-254's stearyl alcohol, would yield a stable composition in light of Lesniak's teachings.

For all of these reasons and those in the POR, Petitioner's Lesniak-based Grounds do not render the claims obvious.

IV. THE NATIVE-BASED GROUNDS FARE NO BETTER

A. Petitioner's Combinations With Native Are Also Based In Hindsight.

Like the Lesniak-based Grounds, Petitioner's Native combinations are also based in hindsight. As explained in the POR, Petitioner cherry picks disclosures from prior art and contends a POSA would have been motivated to combine them with Native, merely because they were purportedly known ingredients and/or weight percentages. In doing so, Petitioner ignores the fundamental differences in the references to be combined, and for certain limitations, ignores the fact that Native already has ingredient(s) providing the same function Petitioner purports the POSA would have been motivated to add. (*See* POR, 53-55, 60-70.)

For example, a POSA would not have been motivated to combine Bianchi-254's weight percentages with Native's ingredient list, because over half of Bianchi-254's stick comprises silicones and aluminum. (POR, 65-66.) Petitioner argues in its Reply that Bianchi-254's disclosure of aluminum and silicones is irrelevant, because "Native already achieved a silicone and aluminum-free deodorant stick, so a POSA therefore would not have to draw on Bianchi-254's teachings for those features," and that "Bianchi-254 simply provides a POSA with guidance on the quantitative amounts of those ingredients and preferred hardness." (Reply, 22.) Petitioner ignores that Bianchi-254's "guidance" on the quantitative amounts of the

ingredients in question is influenced and scaled by the presence of over 50% aluminum and silicone in Bianchi's sticks.

As another example, Petitioner incorrectly contends in its Reply that "P&G's only arguments regarding the inclusion of tapioca starch in [Native's] compositions (as required by claim 16) turn on the mistaken stability argument addressed above." (Reply, 26.) Not so. Patent Owner and Dr. Lochhead explained that a POSA would not be motivated to add tapioca starch "to absorb moisture and sweat" as Petitioner claimed, because Native already includes arrowroot powder, which serves that function. (POR, 70.) This stands unrebutted.

Finally, Petitioner provides no reference that includes the use of both baking soda and magnesium hydroxide together in a composition, yet insists a POSA would have been motivated to modify Native to include both.⁹ (*See* Petition, 55-56.) But Petitioner's only reason for adding magnesium hydroxide to Native in the first place was to replace Native's baking soda. (*E.g., id.*, 45.) If Native's baking soda is not to be replaced—as Petitioner makes clear is its position (*e.g.*, Reply, 26 (arguing "Native already contains baking soda, which was thought to be an 'excellent' antimicrobial for deodorants"))—then Petitioner's sole motivation to include magnesium hydroxide does not exist. Petitioner does not reconcile this in its Reply.

⁹ This is after Petitioner said a POSA would have removed Native's baking soda altogether. (*See* POR, 67-68.)

For the reasons presented here and in the POR, Petitioner’s piecemeal approach to modifying Native, with no clear motivations to do so, is hindsight that cannot (and does not) render obvious the claims.

B. Petitioner Has Not Shown the Public Accessibility of Easy Homemade.

Finally, Petitioner’s Reply does not rectify its issues with the Easy Homemade informal blogpost. Petitioner contends that although it failed to prove the blog was indexed by search engines, Easy Homemade is still prior art because it purportedly “contains reviews from interested persons that show such persons not only could have located—but actually did locate—the website, confirming its public accessibility.” (Reply, 25.) There are no such “reviews” in Easy Homemade. (*See* Ex. 1009 (showing no reviews or other online interactions with the post).) Rather, Petitioner cites *different posts* from the website that contain reviews, and tries to use that as a proxy to show a POSA could have located the Easy Homemade blog. (*See* Reply, 25 (citing Exs. 1016, 1018).) These additional blogposts do nothing of the sort; their few, non-substantive, “thanks for sharing!” and “cute labels!” style comments do not show public accessibility of Easy Homemade to the POSA. But, in any event, a POSA would not have been motivated to combine Easy Homemade and Native with any reasonable expectation of success, for the reasons provided in the POR. (*See* POR, 62-63.)

V. CONCLUSION

For the reasons set forth above and in Patent Owner's Response, the challenged claims of the '999 Patent are not unpatentable.

Respectfully submitted,

Date: September 5, 2025

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CERTIFICATE OF WORD COUNT

Pursuant to Rule 37 C.F.R. 42.24(d), the undersigned hereby certifies that, based upon the word count of the word-processing system used to prepare this Sur-Reply, the number of words in this Sur-Reply is 5,372.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. 42.6(e), I certify that I caused to be served on the counsel for Petitioner a true and correct copy of the foregoing by email on September 5, 2025, at the following address:

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