

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MULTI-COLOR CORPORATION
Petitioner

v.

BROOK & WHITTLE LIMITED
Patent Owner

PGR2025-00025
Patent No. 11,961,422

PATENT OWNER'S SUR-REPLY

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***All emphasis added unless otherwise noted.**

LISTING OF EXHIBITS

EX	DESCRIPTION
2001	"Going for Gold," Multi-Color Corporation, available at https://www.mcclabel.com/en/resources/going-for-gold
2002	"NESCAFÉ® Debuts Gold Espresso and Ice Roast Instant Coffee in the U.S., Offering Rich Variety for Every Occasion," Nestle, April 3, 2024, available at https://www.nestleusa.com/media/pressreleases/gold-espresso-ice-instant-coffee
2003	recycLABEL™ Shrink Sleeve brochure, Multi-Color Corporation
2004	"Labeled with Care – Sustainability Update," Multi-Color Corporation, available at https://issuu.com/mcclabel/docs/mcc_2024_sustainability_update?fr=sOTFjMjY0MTE4OTQ
2005	"Nestlé to use recyclable, light-blocking shrink sleeves on some beverage products," Packaging Dive, April 17, 2024, available at https://www.packagingdive.com/news/nestle-recyclable-shrink-sleeve-label-light-blocking/713427/
2006	<i>Brook + Whittle LTD v. Nestle USA, Inc. et al.</i> , 2:24-cv-00735-JRG-RSP, Docket Report, generated May 13, 2025
2007	<i>Brook + Whittle LTD v. Nestle USA, Inc. et al.</i> , 2:24-cv-00735-JRG-RSP, D.I. 16 (Docket Control Order)
2008	<i>Brook + Whittle LTD v. Nestle USA, Inc. et al.</i> , 2:24-cv-00735-JRG-RSP, D.I. 50 (Defendants' Unopposed Motion for Leave to Supplement Invalidity Contentions Under P.R. 3-6(b))
2009	<i>Brook + Whittle LTD v. Nestle USA, Inc. et al.</i> , 2:24-cv-00735-JRG-RSP, D.I. 51 (Order granting D.I. 50)
2010	Deposition Transcript of Dr. Craig Bushman
2011	Deposition Transcript of Dr. Michael Deible
2012	Declaration of Dr. Maureen Reitman
2013	Declaration of Dr. Scott Phillips
2014	"Gatorade and Cheetos are Among the Pepsi Products Getting a Natural Dye Makeover," NY Post
2015	"Can I Drink Gatorade Past the Best Before Date on the Bottle," PepsiCo
2016	US Patent Application No. 2025/0273094
2017	"Nesquik Makes Bottles Easier to Recycle for Consumers," Nestle

EX	DESCRIPTION
2018	Email from A. Leonard (Nestle) to S. Figueroa (B+W)
2019	PACKAGING EUROPE, <i>Winners of the Sustainability Awards 2024 Announced!</i> , (Nov. 14, 2024).
2020	PACKAGING EUROPE, <i>Sustainability Awards 2024 Finalist Interview: Brook+Whittle's Recyclable, Light-Blocking Shrink Sleeve</i> , (Sept. 24, 2024).
2021	<i>AWA Sleeve Label Awards 2024 - Winners</i> (October 28, 2024)
2022	US Plastics Pact 2023 LinkedIn Post
2023	US Plastics Pact 2024 LinkedIn Post
2024	<i>Brook + Whittle LTD v. Nestle USA, Inc. et al.</i> , 2:24-cv-00735-JRG-RSP, Dkt. 1 (Complaint)
2025	<i>Brook + Whittle LTD v. Nestle USA, Inc. et al.</i> , 2:24-cv-00735-JRG-RSP, Dkt. 1, Ex B (Claim Chart)
2026	PET-S-09, Evaluation of PET Plaques for Color, Haze and Inclusions
2027	US Patent Application No. 18/667,677 September 3 Remarks
2028	US Patent Application No. 18/667,677 October 24 Final Rejection
2029	"Heat Treatment Impacts on Film Morphology in Biaxially Oriented Polypropylene Films," Kivilcim, Fadime Nulufer, <i>Food Sci. & Nut.</i>
2030	"The Amazing Shrink Inks," Packaging Impressions
2031	"Wrinkling-to-delamination Transition in Thin Polymer Films on Compliant Substrates," Nolte, Adam J., <i>Soft Matter</i> , 2017
2032	"Review Article: Stress in Thin Films and Coatings: Current Status, Challenges, and Prospects," Abadias, Gregory, <i>J. Vac. Sci. Technol.</i> 2018
2033	"Product Decoration Technologies: Sleeving," Finishing & Embellishment
2034	"Brook + Whittle's GreenLabel BlockOut Receives Important Recyclability Recognition and Prequalification," Brook + Whittle
2035	"MCC Receives APR Recognition for recycLabel Roll-Fed Label on PET Bottles," MultiColor Corp
2036	"Trap (printing)," Grokipedia
2037	<i>Brook + Whittle LTD v. Nestle USA, Inc. et al.</i> , 2:24-cv-00735-JRG-RSP, Dkt. 112, Claim Construction Order
2038	Plastics Forming Enterprises LLC, Laboratory Report #2467 APR PET Benchmark
2039	Declaration of Steven Dirks in support of Admission <i>Pro Hac Vice</i>

EX	DESCRIPTION
2040	Declaration of Tera Stone in support of Admission <i>Pro Hac Vice</i>
2041	Declaration of Kelly Tripathi in support of Admission <i>Pro Hac Vice</i>
2042	Deposition Transcript of Dr. Michael Deible, dated July 16, 2026
2043	Deposition Transcript of Dr. Craig Bushman, dated July 20, 2026
2044	Declaration of Andy Sharp (served only)
2045	"The Multi-Color Sustainability Roadmap," MultiColor Corp (Ex. A, July 20, 2026, Deposition Transcript of Bushman), <i>available at</i> https://www.mcclabel.com/en/resources/personal-care-beauty-sustainability-roadmap
2046	"APR Recognition for HDPE Containers" MultiColor Corp (Ex. B, July 20, 2026, Deposition Transcript of Bushman)
2047	PET-S-08, PET Flake Clumping Evaluation (Ex. C, July 20, 2026 Deposition Transcript of Bushman)
2048	February 14, 2020, Letter from APR (Ex. D, July 20, 2026 Deposition Transcript of Bushman)

I. INTRODUCTION

The Board should confirm claims 1-19 of the '422 Patent. Petitioner's impermissible burden-shifting and newly-minted Reply arguments and expert opinions fail to cure the Petition's fundamental deficiencies.

Petitioner fails to present a cognizable theory and presents incompatible, unsupported arguments that the Gatorade Label is recyclable under a shifting definition (Grounds 1-3) or alternatively that recyclability is "subjective" and cannot be determined (Ground 4). Petitioner has not presented any actual evidence of the recyclability of the Gatorade Label or that it is recyclable under *any* standard. Indeed, both parties' experts confirmed inks are retained on the PET label flakes after caustic wash. Moreover, despite now arguing that APR certification determines recyclability, Petitioner simultaneously advances the incompatible (new) argument that APR guidance is too "subjective" to inform claim scope in Ground 4. Petitioner's positions are irreconcilable—either recyclability can be determined by the APR or not. And even if recyclability is specifically tied to the APR, the APR protocols prescribe objective test procedures evaluated by experienced POSITAs exercising their judgment as skilled artisans. MCC itself relied on APR recognition to market its recyclABEL™ products, confirming POSITAs recognize APR certification as a measure of recyclability.

II. PERSON OF ORDINARY SKILL IN THE ART (“POSITA”)

As the '422 Patent fundamentally relates to the recyclability of packaging films, a POSITA would have “experience related to packaging films or containers.” Paper 34 (“POR”), 10-11.

Dr. Bushman defined a POSITA as “someone who has a Bachelor’s degree and more than five years of experience in the field” of “[l]abels and recycling”—credentials Dr. Deible lacks. EX2043, 129:1-130:23. If PO’s definition is adopted, Dr. Deible’s opinions should be given little to no weight. Moreover, Dr. Bushman was not tendered as an expert and Petitioner cannot shoehorn improper testimony by having Dr. Deible rely on Dr. Bushman’s experience. Paper 59, 9-11.

Petitioner criticizes PO’s expert, Dr. Phillips, for lacking experience in APR guidance and evaluation, Paper 54 (“Reply”), 2, yet neither party requires a POSITA with such experience. Paper 2 (“Petition” or “Pet.”), 12; POR, 10-11. If required, Dr. Deible is equally lacking. EX2011, 20:20-25. The “alter[ed] [] outcome” is clear: Petitioner’s analysis would be wholly unsupported by expert analysis. Reply, 1.

III. CLAIM CONSTRUCTION

PO’s recyclability construction requires “inks that wash off the label *such that the reusable resin can be reclaimed* when the label and container are recycled together.” POR, 13-14. This is a single, unified standard understood by POSITA in light of the specification: reclamation of reusable resin is the measure of

recyclability. Ink wash-off alone does not establish recyclability, but non-washable inks prevent recyclability. Regardless of which construction the Board adopts, Petitioner fails to demonstrate that the Gatorade Label is recyclable under any standard.

IV. ARGUMENT

A. Ground 1: The Gatorade Label does not Anticipate Under 35 U.S.C. §102

Petitioner fails to carry its burden of proving the Gatorade Label anticipates any claim of the '422 Patent. Petitioner's attempts to gap-fill by incorporating significant new arguments and opinions in Dr. Deible's new declaration, EX1046, should be rejected.¹ Moreover, Petitioner's attempts to shift the burden, stating that PO did not show that the Gatorade Label does *not* meet the claim limitations, should be rejected as the burden always remains with Petitioner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

¹ Petitioner's half-a-page assessment Reply for claims 5-19 incorporates **29 paragraphs** of new opinions. *Compare* Reply, 9-10 with EX1046 ¶¶94-96, 101-126. Petitioner's single-paragraph Reply seeks to rehabilitate Dr. Deible's testing by incorporating **27 new paragraphs**. *Compare* Reply, 7-8, with EX1046 ¶¶54-80.

1. Independent Claims 1 and 19

Claims 1 and 19, and all claims depending therefrom, are not anticipated.

- a. “a first surface and a second surface” and “adjacent the first surface”

Petitioner tries to excuse its failure to “specify where each element of the claim is found in the prior art” with particularity, 37 C.F.R. § 42.204(b)(4), by conflating the law of anticipation with the requirements of a Petition. But what is required by a *reference* to anticipate is not disputed; the question is whether the *Petition* sufficiently explains how each claim element is disclosed. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“the initial *petition* [must] identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim’”); *see also* 35 U.S.C. §312(a)(3). Here, there is no dispute that neither the Petition nor Dr. Deible’s first declaration identified “first and second surfaces,” or a “light blocking layer disposed adjacent the first surface.” Pet., 17-29; EX1014 ¶¶26-29.

This failure is not one of “semantic[s].” Reply, 5. Which surface is “first” and “second” determines whether the “light blocking layer [is] disposed adjacent the first surface.” EX1001, cls. 1, 19. As Dr. Deible admitted, the ’422 Patent “demonstrate[s] that you can print layers on the portion of the film that faces the container as well as portions of the film that face away from the container.” *See* EX2042, 120:14-121:20 (citing EX1001, Figs. 1A-1E). Petitioner should not be

allowed to use Dr. Deible's *second* declaration, which identifies the claimed surfaces for the first time,² to rewrite its Petition and remedy this fatal flaw. Reply, 4 (*quoting* EX1046 ¶¶14-17, 20); *see also* USPTO Memorandum on 37 C.F.R. § 42.104(b)(4), 1, 3 (confirming PTO enforcement of 37 C.F.R. § 42.104(b)(4)).

- b. “the light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light”

Petitioner does not dispute that the Gatorade Label as a whole blocks at most 57% of incident light. EX2013 ¶¶68, 73.



Dr. Deible admits “Dr. Reitman’s underlying measurements do not contradict mine.” EX1046 ¶33. Dr. Deible agreed that if he “wanted to measure the light transmittance of the *entire label*,” he “would pick representative samples and assume that the

² PO separately moves to exclude all of Dr. Deible’s opinions. Paper 59, 2-5 (moving to exclude EX1014 and EX1046).

transmittance of that representative sample was equal for all other similar parts,” as Dr. Reitman had. EX2042, 113:10-114:10. Petitioner admits that only the “*silver regions*” block “approximately 85%” “of incident light.” Reply, 5. However, those regions cover at most 68% of the label surface, yielding a whole-label average of approximately 57%—far short of 80%. EX2013 ¶73.

The plain language of the claim is clear: “the light blocking layer being constructed for the *recyclable shrink label*”—not the light blocking layer—“to block at least 80% of incident light.” A POSITA would understand that some portions of the claimed label can block less than 80% of incident light, so long as the *label as a whole* blocks 80% of the total incident light. Reply, 6; EX2046 ¶16; EX2042, 118:19-22. The specification confirms that the light blocking layer must be constructed such that the *label* achieves 80% blocking overall, EX1001, 23:21-28:19, as the labels “serve to block light from reaching a product inside the package.” POR, 5 (quoting EX1001, 6:23-29, Fig.2); EX2042, 120:3-13.

MCC’s late-presented construction (Reply, 5-6 citing EX1046 ¶¶27-31) measuring only silver ink in isolation departs from the claim language. Any other reading would substantially undermine the label’s functions: if the claim were satisfied whenever any portion of a label blocks 80%, then a label with a single opaque speck on entirely transparent material would meet the limitation. EX2042, 110:25-111:12.

- c. “light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm ” (Claim 1 only)

Petitioner failed to show “a *particulate*” with the claimed size. Dr. Deible used as a “proxy for particle size” by measuring the aluminum layer *thickness*, but that does not necessarily correlate to a single particle. EX2042, 123:8-124:18, 126:21-127:24; POR, 21. Dr. Deible’s complaint that he could not conduct laser diffraction³ on a printed label to confirm particle size is of no moment, as a POSITA could measure particulates before they are deposited onto the film. EX1046 ¶37.

Petitioner provided no evidence of particulate size whatsoever. Petitioner’s belated third-party publications should be disregarded, Reply, 7; EX1046 ¶¶38, 41, as they cannot demonstrate a POSITA’s knowledge before the ’422 Patent’s filing date. EX2042, 126:10-14; *see also id.*, 123:5-23.

- d. “wherein the recyclable shrink label is recyclable with a PET container”

It is Petitioner’s burden to show the Gatorade Label *is recyclable*, *not* PO’s burden to show the Gatorade Label *is not recyclable*. Reply, 7-8. Despite the Board stating for anticipation, “that any of the[] standards [described in the ’422 Patent] can be used to determine if a shrink label is ‘recyclable,’” Paper 14, 13, Dr. Deible

³ PO does not require laser diffraction as Petitioner contends, Reply, 6, but explains that tests exist to determine particulate size. *See* POR, 21-22.

continuously changed the “recyclability” standard he applied to opine that the Gatorade Label meets this limitation. And Petitioner and Dr. Deible cast aspersions on Dr. Reitman’s testing (e.g., lacking plaque inspection, wash-water evaluation, and quantitative contamination assessment), but her testing merely replicated Dr. Deible’s testing. EX2012 ¶¶59-70; EX2042, 58:3-24; 95:18-96:7, 102:14-103:18.

Petitioner has not shown the Gatorade Label meets any recyclability description in the ’422 Patent.

i. Petitioner’s Shifting Standards

Petitioner’s shifting recyclability standard is obvious when comparing Dr. Deible’s declarations. In the first, Dr. Deible stated a label is “...considered recyclable if no inks are retained on the film after a caustic wash cycle” and performed a caustic wash test to attempt to meet this standard. EX2042, 77:12-78:19; 80:23-81:18; Pet., 30.

By contrast, Dr. Deible changes course in his second declaration, claiming his caustic wash testing was “not intended to establish recyclability in the first instance” but show “the Gatorade Label behaved consistently with what would be expected of an APR-recognized recyclable label system” and not “contaminate” clear PET. EX1046 ¶¶46-48; *see also* Paper 63, 10-11.

Yet in his second deposition, Dr. Deible reverted to requiring ink “[n]o longer on the PET film” standard consistent with his *first declaration*. EX2042, 49:4-20.

Regardless of the flip-flopping, Petitioner fails to show the Gatorade Label meets *any* definition of recyclable.

It is Petitioner's burden to show that the Gatorade Label *is recyclable*. The Board unequivocally explained that contamination of clear PET is evidence that a label is *not recyclable*, not that it shows a label without contamination *is recyclable*. Paper 14, 11. Petitioner has no explanation for why a POSITA would use such a standard.

ii. "no inks are retained on the film"

Petitioner fails to show the Gatorade Label meets this purported standard of "recyclability." Both Dr. Reitman and Dr. Deible confirm the Gatorade Label retained ink on the PET label flakes after a caustic wash. POR, 27. The ink retained is similar to a third-party test which "does not meet all APR guidelines for PET." EX2013 ¶93 (citing EX2038, 5):

B+W Unsuccessful Wash Test Performed by PFE	Gatorade Label Results from Dr. Reitman	Gatorade Label Results from Dr. Deible
 EX2038, 13	 EX2012, FIG. C11a (water bath preshrunk Gatorade label)	 EX1014, FIG 11d (zoomed in)

Petitioner's observation that ink "separated" during washing (Reply, 8) is not the same as demonstrating that "no inks are retained." *Id.*, 16. That some ink washes off while visible ink remains on the PET label flakes is precisely the opposite of Petitioner's chosen standard. *Id.*

Petitioner's reliance on the specification's statement that "[g]enerally clear crystallizable heat shrink films (e.g., PET shrink films) are considered recyclable if no inks are retained on the film after a caustic wash cycle" for the proposition that any ink being removed confers recyclability (EX1001, 6:61-65) is misplaced. It is undisputed that ***inks are retained*** on the Gatorade Label after a caustic wash cycle.

This limitation requires "the recyclable shrink ***label*** is recyclable with a PET container." EX1001, cls. 1, 19. Dr. Bushman agrees that the terms "label" and "film" are not interchangeable. EX2043, 63:2-11. As such, a POSITA would have understood this passage describes that ink removal is ***required*** for a film to be "generally considered recyclable," not that the removal of inks alone is dispositive. This is consistent with PO's proposed construction, which recognizes that "recyclable" requires the label's inks to wash off such that the resin can be reclaimed. POR, 13-14.

Petitioner's criticism of Dr. Reitman's statement that a "significant" amount of ink remains on the PET label flakes is a red herring. Reply, 7; EX1046 ¶44. This standard is not PO's proposed construction. POR, 11-15. Moreover, when asked how

much ink must be removed for a label to be “recyclable,” Dr. Deible testified that his test was “more qualitative than quantitative,” but stating the amount must be “significant,” and defining “significant” as “more than some,” “some” as “a little,” and “a little” as “more than zero.” EX2042, 53:6-54:15. Petitioner failed to meet its burden under this or any standard.

iii. “meeting or exceeding APR’s Critical Guidance Protocol”

Petitioner’s unsupported assertion that “[t]he Gatorade Label is ... recognized as meeting or exceeding [the APR’s] Critical Guidance Protocol for recyclability,”⁴ does not satisfy Petitioner’s burden to demonstrate that the *prior art* Gatorade Label *itself* meets or exceeds APR Critical Guidance. Reply, 3, 7. This evidence is not properly before the Board. Paper 59, 12-14.

Dr. Deible is unequivocal that the only evidence to support that the Gatorade Label is “recognized as recyclable” is Dr. Bushman’s first declaration. EX1046 ¶45;

⁴ As described in PO’s Motion to Strike and below, Petitioner’s argument that APR guidance is so biased and unworkable as to render recognition meaningless is incompatible with Petitioner’s use of APR recognition as primary evidence of prior-art recyclability. See Paper 60, 9; see also *infra* §IV.D.

EX2042, 72:1-8 (citing EX1013 ¶¶47-48). Yet Dr. Deible had no recollection of ever reading it and confirmed that “there is no statement” in the cited paragraphs that the Gatorade Label has APR recognition. EX2042, 8:7-16, 68:16-70:17, 74:14-17, 75:10-76:8. Aside from Dr. Bushman—a biased former MCC employee—there is simply *no evidence* the Gatorade Label is an SKC Ecolabel, consistent with the Fort Dearborn washable ink system, or uses Watson Standard silver ink. POR, 39-44. Indeed, none of EX1016, EX1018, and EX1019, make any reference to the Gatorade Label. That MCC, the manufacturer of the Gatorade Label, cannot produce a single contemporaneous APR certification letter, test report, or recognition correspondence for its own product speaks volumes about whether such certification ever existed.

2. Claims 2, 3, and 5-18: Dependent Claim Deficiencies

Like claim 1, Petitioner fails to demonstrate that any dependent claim is anticipated. *See also* POR, §V.A. Petitioner's Reply on dependent claims is slightly over a page yet improperly incorporates over 30 paragraphs of new opinions from Dr. Deible. *Compare* Reply, 8-10, *with* EX1046 ¶¶81-85, 92, 94-96, 101-26; *see supra* §IV.A.1.a.

Petitioner fails to identify specific, distinct “layers” as required by claims 2-3, 10-12, and 14-16. For example, claim 2 requires a distinct “indicia layer.” While Dr. Deible now opines that the claim “does not require that the indicia layer be formed by stacked inks, comprise discrete ink layers deposited on top of one

another” in a “particular layered printing arrangement,” EX1046 ¶¶82-83, he previously conceded that for something “to be a layer” that he “would expect it to overlap with something else.” EX2011, 178:7-19.

The '422 specification specifically envisions a distinct layer: “[t]he indicia layer may be an ink or graphics *layer*,” may be “a mono-colored or multi-colored print *layer*.” EX1001, 16:49-53. That the layer is not required to be “constant, continuous, or complete” does not demand a different reading; the claimed indicia layer that exists is a distinct layer. *Id.*, 16:47-48.

With regard to claims 12 and 13, Dr. Deible erroneously assumes the light blocking layer covers the entire Gatorade Label when it actually covers 52-68% of the label.⁵ *See supra* §IV.A.1.b. Dr. Deible’s opinion that the ppr of the light blocking layer refers only to “the coating weight of the layer where it is applied” (EX1046 ¶111) misreads the claim as requiring the *label* must be light blocking, not

⁵ *See* POR, 48. Dr. Deible’s late explanation that his calculation was a floor because the light blocking layer consists of more than the aluminum he measured (EX1046 ¶108) is contradicted by his prior unsupported assumption that the other solid components are 10% of the layer. EX1014 ¶93.

the portions of the label where a light blocking layer is present. Moreover, Dr. Deible's *post hoc* rationalization that aluminum constitutes only 10% of the light-blocking layer's weight is derived from *the '422 Patent itself*, not from the Gatorade Label's actual composition. EX1046 ¶109. Using the '422 Patent's disclosed embodiment to fill evidentiary gaps in the prior art is impermissible hindsight.

Dr. Reitman's calculations do not support Dr. Deible's latest theory. Dr. Reitman's measured 0.3 ppr is not the claimed 0.5 ppr. EX1046 ¶112 (citing EX1001, 4:12-22). Nothing in the specification allows Dr. Deible to handwave this claim to argue that these numbers are "about" the same. *See* EX1046 ¶112.

Claim 13 also fails because if Petitioner is correct that "light blocking layer comprises the entire light blocking component," Pet., 38, it cannot logically comprise "from 0.1 ppr to 10 ppr of the light blocking component." EX1001, 29:7-9. This is also inconsistent with Dr. Deible's new opinion that his calculation was a floor.

Claims 14 and 15 both require a container comprising PET, yet Petitioner never identifies any prior art container. Nothing in the record establishes the Gatorade bottle as comprising PET. *See* EX1013 ¶53 (no evidence of bottle composition). Petitioner has not remedied this failure of proof. POR, 49-51; *see also* EX2042, 129:12-131:17.

B. Ground 2: The Gatorade Label/POSITA (Mitchell) Combination Does Not Render Claim 4 Obvious

Ground 2 fails for all the reasons explained for Ground 1 and because Petitioner's combination rests on impermissible hindsight. Reply, 10.

Dr. Deible did not review Mitchell prior to his first declaration. EX2011, 118:1-9; *see also* Paper 59, 2-3. Dr. Deible remained unsure of which reference he relied on as of his second deposition. EX2042, 17:17-21, 18:5-11. Dr. Deible relied only on *characterizations* of Mitchell *in the prosecution history* and the '422 Patent despite recognition that POSITA would consider the entire reference. EX1046; EX2042, 19:15-20. Dr. Deible's improper hindsight using the '422 Patent to justify his combination cannot be resolved by *post hoc* perfunctory review of Mitchell. EX1046 ¶135.

1. Motivation to Combine

Dr. Deible's only identified motivation for reordering the Gatorade Label's layers comes from working backward from the '422 Patent. Pet., 44-45. Confronted with Dr. Bushman's admission that label design is driven by brand and market needs, Petitioner appears to drop this argument. *See* Reply, 11.

Petitioner raises a new argument that instead of "*promoting* visibility of the label," (Pet., 45) combining the Gatorade Label with Mitchell would "*preserve*[]" graphic visibility and vibrancy while maintaining the metallic appearance." Reply, 11. Dr. Deible disavowed his *promotion-based* motivation to combine, supplanting

it with a reformulated opinion. *Compare* EX2011, 239:24-241:2, *with* EX1046 ¶140 (citing EX1002, 239, EX1001, 19:15-20).

Even accepting Dr. Deible's new motivation, there is no evidence of motivation to combine other than the '422 Patent disclosure. EX1046, ¶139 (citing EX1001, 19:15-23).⁶ Dr. Deible impermissibly "read[s] into the prior art the teachings of the invention in issue." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421, (2007) (*quoting Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 36 (1966)); *see also* POR, 55-56; EX2042, 26:24-28:10.

Petitioner states "[s]electing among a few known arrangements for a known benefit is routine design choice, and Dr. Deible agreed visibility motivated the arrangement." Reply, 11. Yet prior art taught away from the '422 Patent's arrangement of layers. POR, 56. Dr. Deible provides no independent support for his opinion aside from the '422 Patent itself. EX1046 ¶141; EX2042, 30:19-31:1.

Dr. Deible invokes PO's own evidence of a long-felt unmet need as supposed motivation to combine. EX1046 ¶143. This argument defeats itself: if the need existed and yet no one combined the Gatorade Label with Mitchell's layer ordering,

⁶ Dr. Deible suggests the "'422 Patent confirms this was the art-recognized function" yet cites an embodiment of the invention, not the background which describes the state of the art. EX1046, ¶139.

the combination was *not* obvious—despite the “market forces” Dr. Deible invokes. *Id.*

2. Reasonable Expectation of Success

Petitioner conflates manufacturing capability with the expectation of achieving the *claimed invention*. The argument that “[t]he combination adds and removes no layers and introduces no new materials” and “Mitchell does not teach away ... as Ground 2 relies on it *solely for layer ordering*,” Reply, 11; EX2042, 33:9-38:15, does not explain *how* the references would be successfully combined to meet the claimed invention. *Intelligent Bio-Sys.*, 821 F.3d at 1367.

Each limitation of claim 1 (from which claim 4 depends), must also be met. Therefore, the modified Gatorade Label must still be recyclable and block at least 80% of incident light. Yet Dr. Deible never analyzed whether reordering the layers would impact either property. EX2011, 132:1-10, 229:12-17. Petitioner cannot simultaneously assert the modification is trivial while ignoring its potential impact on claimed features.⁷

⁷ Petitioner also misstates *In re Keller* and *In re Mouttet* to suggest PO “attack[s] references individually on unrelated matters.” Reply, 11. *In re Keller* rejected an argument by PO on the obviousness of a claim element based on one reference alone, unrelated to motivation to combine or expectation of success in

3. Secondary Considerations

Petitioner's attempt to discredit PO's objective indicia fails. Reply, 12, 13. Under Petitioner's authority, nexus exists where the objective evidence is the "direct result of the unique characteristics of the claimed invention." *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1374 (Fed. Cir. 2019). That standard is met. Evidence directly links the praised features to the claimed invention: PO's GreenLabel® BlockOut™ is a recyclable, light-blocking PET shrink sleeve that uses washable inks—precisely the features recited in claims 1 and 19 (a "heat shrink film comprising polyethylene terephthalate," a "light blocking layer...to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm," and "recyclable with a PET container"). EX1001, cls. 1, 19; EX2019, 6-7; EX2021, 1. Petitioner cherry-picks ancillary award criteria (artwork quality, shelf appeal) while ignoring the dispositive basis for the recognition—a recyclable shrink label that blocks up to 99% of light—which maps claim-by-claim to the '422 Patent. EX2019, 6-7; EX2013, ¶212.

combining references. 642 F.2d 413, 426 (CCPA 1981). *In re Mouttet* rejected a requirement that features in different references were equivalent. 686 F.3d 1322, 1333 (Fed. Cir. 2012). Here, neither case applies.

C. Ground 3: The Gatorade Label/Febreze Label Combination Does Not Render Obvious Claim 4

Petitioner's Reply for Ground 3 largely incorporates its arguments for Ground 2; PO likewise incorporates its responses. As in Ground 2, Petitioner has not shown that a POSITA would have been motivated to modify the Gatorade Label, let alone to combine it with the Febreze label for the *specific* arrangement of layers. Reply, 14; *see also supra* §IV.B.1; POR, 71.

Regarding motivation to combine, Petitioner again argues that a combination can be used for specific elements rather than the invention as a whole and relies on the specification of the '422 Patent to motivate the combination. *See* EX1046 ¶150.⁸ This is legally incorrect. *See supra* §IV.B.1.

Regarding expectation of success, Petitioner fails to respond to PO's challenges that Petitioner cannot "bootstrap a motivation to combine merely by pointing to a common manufacture," POR, 73, or that the Febreze label is a "commercially sold label" has no bearing on its combination with the Gatorade Label. Reply, 15. Dr. Deible similarly ignores the expectation of success of the invention *as a whole*. EX1046, ¶152; *see Intelligent Bio-Sys.*, 821 F.3d at 1367.

⁸ Petitioner seemingly abandons its argument that the Gatorade Label and Febreze labels are "similar in purpose, composition, and structure." Pet., 52.

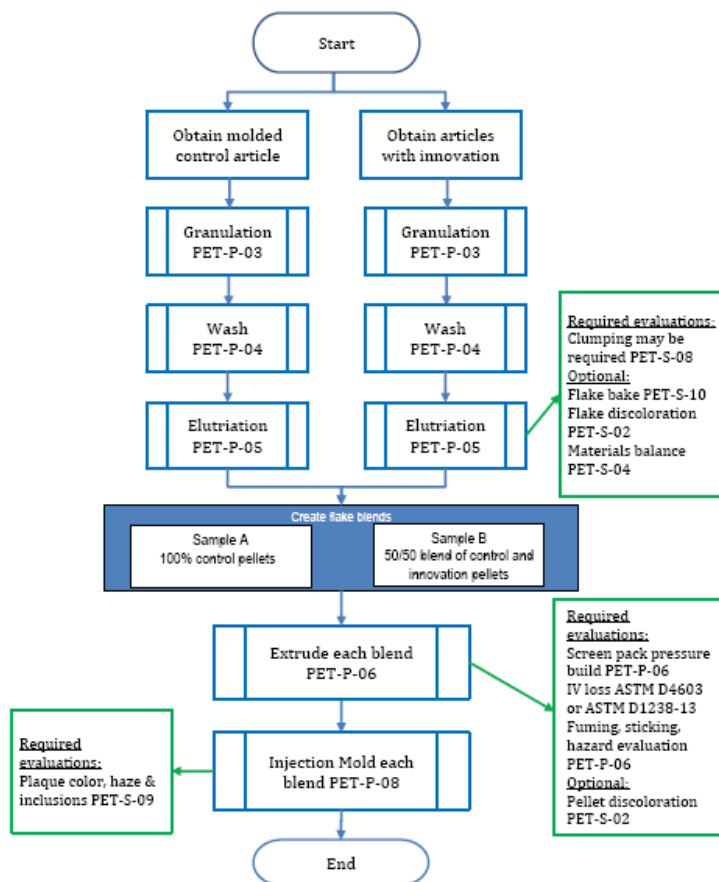
D. Ground 4: The Claims of the '422 Patent are Definite under 35 U.S.C. §112

The claims are definite for a simple, irrefutable reason: a POSITA understands that a label substrate that can be reclaimed as resin, including because the inks wash off the film, is recyclable in light of the specification. POR, 75, 78. Failing to find any inconsistencies in the '422 Patent, Petitioner changes targets, attacking the APR *itself*. These new arguments are untimely, legally incorrect, and fail on the merits.

1. The '422 Specification's Consistent Scope

Recycling is a sequential, multi-step process—not a menu of alternative tests.

See EX1048, 74:16-75:1, 77:17-78:14; EX1001, 11:32-44; EX1027, 1, 3.



EX1027, 7. Dr. Phillips' refusal to reduce recyclability to a single test reflects the sequential and well-understood nature of recycling—not indefiniteness. EX1048, 99:15-20; *see* Reply 18, 20, 23, 25.

A POSITA understands a label is recyclable if it results in reusable resin after the recycling process.

First, a label must be correctly sorted: If a feature (*e.g.*, metallic ink) causes a container and label together to be sorted out of the recycling stream, the label will not be reclaimed. POR, 94-95; EX1027, 3. Sortation as a gatekeeper does not render the claims indefinite—it reflects well-understood recycling steps that Petitioner itself applies. *See* EX2043, 99:5-101:9; EX1038; EX2035.

After sorting, a POSITA would understand that film inks may be contaminants, warranting a caustic wash test. *See* EX1048, 77:17-78:14; EX1027; EX1030, 1. In addition to quantitative tests for measuring the impact of inks on the PET flake (*see, e.g.*, EX1027, 6), a POSITA would have the experience to qualitatively judge caustic wash results. “[N]o inks” ***retained*** on film confirms that the inks do not impact the ability to reclaim the film resin. EX1001, 6:62-65. If no ink washes off, PET is contaminated and the label is not recyclable. EX1048, 182:2-7; EX2010, 166:24-168:4, 180:3-8. For partially removed inks, a POSITA would understand how to test whether sufficient ink was removed.

The '422 Patent provides explicit numerical benchmarks: “substantially” removing inks means removal of “at least 90%, at least about 95%, or at least about 98%.” EX1001, 3:34-37, 11:49-51; *see also id.*, 7:9-13, 11:29-53. The APR guidance provides additional numerical thresholds for evaluating the resulting PET flake: color values, haze percentages, and inclusion counts. EX1027, 6. Both experts agree the '422 Patent discloses tests that a POSITA can perform to enable a reasoned judgment regarding recyclability. EX1048, 182:6-7; EX2043, 104:8-11. That is all that is legally required. *Sonix Tech. Co., Ltd. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1378-79 (Fed. Cir. 2017).

Petitioner's mathematical precision demand is unnecessary and improper as a matter of law. *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371-72 (Fed. Cir. 2014); Reply, 22; EX1047 ¶45.⁹ Dr. Phillips correctly testified—in addition to the caustic wash test—there are “a number of other tests that should be

⁹ Petitioner suggests because an embodiment with “no inks” retained is disclosed, a label is only recyclable *if* no inks remain. Reply, 16-17; EX1047 ¶45.

Petitioner provides no justification for limiting to this embodiment.

performed.”¹⁰ EX1048, 122:16-17. After caustic wash, the *plaque evaluation test* uses numerical thresholds to evaluate whether the amount of remaining ink contaminates the resin. EX1027, 7 (citing PET-S-09 guidance).¹¹ Not only are the patent's descriptions of recyclability consistent, but they provide a POSITA reasonable guidance to determine whether a label is recyclable with a PET container. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 898-99 (2014).

2. The '422 Patent's Standard Is Not Improperly Subjective

For the first time on Reply and without supporting case law, Petitioner contends the '422 claims are indefinite because they incorporate “subjective considerations.” Reply, 15-16, 17-26; Paper 60. Petitioner is wrong. *Nautilus* requires only “reasonable certainty”—not mathematical precision. 572 U.S. 898,

¹⁰ The wash water test does not assess individual label recyclability but highlights the importance of clean wash water. EX1030, 1. Regardless, Dr. Bushman agrees the wash water test provides a predetermined set of evaluation criteria. EX1008; EX2043, 106:3-110:7.

¹¹ Dr. Phillips' testimony that measuring ink retention is “not what the tests measure” is consistent with the APR testing because what is actually measured is the “quantitative features of the material after the washing step.” EX1048, 93:6-9.

910 (2014). The Federal Circuit has repeatedly held that claims requiring skilled artisans to apply their judgment to evaluate objective measurements are not indefinite. *Sonix Tech. Co., Ltd. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1378-79 (Fed. Cir. 2017). Recyclability is not a matter of aesthetic taste, but an objective, testable characteristic determined by whether the label substrate can be reclaimed as reusable resin.

Petitioner argues the “APR guidelines” are a “subjective determination made by” a three-member panel. Reply, 18. Not so. The APR guidelines provide objective, numerical thresholds, as described below. That skilled practitioners apply their judgment to evaluate test results against those objective thresholds does not render the thresholds themselves subjective. *Sonix*, 844 F.3d at 1378-79. Nor does the '422 Patent condition recyclability on APR ***recognition*** by a three-member panel; instead, it teaches that “***meet[ing]***” industry standards can certify recyclability. *See* EX1001, 11:32-38.

Petitioner relies solely on untimely, conclusory assertions of a biased witness. *See* EX2010, 7:22-8:20, 38:2-40:6, 41:7-20, 45:11-46:6; EX2043, 24:24-25:17 (Dr. Bushman unaware of what his APR-panel subjectivity arguments are “responsive” to), 26:4-32:17 (refusing to answer questions about his first declaration), 53:9-54:1 (refusing to answer whether he reviewed the '422 Patent). Even if recyclability were conditioned upon APR recognition, Dr. Bushman testified that the APR panel

applies skilled artisan's judgment—evidence that the claims are definite. EX2043, 104:8-11; *Sonix*, 844 F.3d at 1378-79.

Nevertheless, Petitioner is wrong: the APR guidelines have objective parameters to determine whether a label is recyclable. The plaque test (PET-S-09) provides quantitative thresholds, as Dr. Bushman admits. *See* EX2043, 120:11-12, 120:17-22 (EX1027 “provide[d] numerical thresholds[.]”). Both parties' experts agree APR provides quantitative parameters. EX2043, 118:17-120:12, 120:17-22; EX1048, 14:17-15:3; *see also, e.g.*, EX1027, 4-6 (clumping test), 5 (IV loss threshold), 6 (plaque evaluations).

Petitioner's reliance on APR guidance—both inside and outside of this proceeding—belies Petitioner's grievances. Dr. Bushman previously relied on APR guidance documents (EX1012; EX1031) to draft MCC's internal test protocol used to assess the recyclability of test articles, submitted labels for third-party testing and relied upon those results (reported in pass/fail terms in EX1038), for APR testing. *See, e.g.*, Pet., 15 (tests according to “internal PET standard”), 30 (“conduct[ing]” “laboratory tests ... in reference to ... [EX1012]”), 31 (receipt of “APR Critical Guidance recognition.”); EX1038 (third-party testing). Petitioner and Dr. Bushman promote APR recognition in public-facing marketing. EX2045, EX2046.

Dr. Bushman was unable to reconcile MCC's public marketing representations with Petitioner's positions in this proceeding. EX2043, 42:12-53:1.¹² Dr. Bushman testified MCC's participation in the APR provided an "understand[ing of] the framework and requirements" for recyclability. EX2043, 34:4-35:11; *see also id.*, 37:5-38:18. Petitioner's position here—that APR guidance is too subjective to inform claim scope—is flatly inconsistent with MCC's real-world conduct. MCC uses APR guidance to design its labels, submits labels for APR testing, markets APR recognition to customers, and relies on alleged APR recognition in this very proceeding to prove the Gatorade Label is recyclable. Pet., 31; EX2045, EX2046. Both parties' experts *applied* those guidelines in interpreting "recyclable" in Grounds 1-3—evidence under *Sonix* that the term is not indefinite. 844 F.3d at 1380.

¹² Dr. Bushman's characterizations of Dr. Phillips' testimony ought to be heavily scrutinized. *Compare* EX1047 ¶35 ("Dr. Phillips agrees that a POSITA does not know whether the '[c]lumping test...' is required to meet PET-CG-02"), *with* EX2043, 89:1-9 ("Q: So isn't it fair to conclude that Dr. Phillips is testifying that if the prior tests are passed, then the clumping test is necessary? ... A: Yeah, but I—I guess I said that it wasn't clear what the prior tests were that he was discussing.").

Petitioner takes issue with the term “fully recyclable” and manufactures an ambiguity (Reply, 17), ignoring that “fully recyclable” appears only to describe APR guidance which itself uses the term. *See* EX1001, 11:38-45; EX1016. Dr. Bushman’s “disagree[ment]” is self-contradictory: Petitioner, Dr. Bushman, and Dr. Deible all relied on documents that use the term “fully recyclable” and defined the term during their depositions. EX2013 ¶273; *see* EX1016; Pet., 31 (citing EX1016 to show recyclability of Gatorade Label); EX1013 ¶56 (same); EX1014 ¶78 (same); EX2010, 62:19-23, 113:14-17, 112:25-113:17.

Petitioner takes issue with Dr. Phillips’ testimony that “material can still be considered recyclable resin if it doesn’t meet that highest standard [set by APR],” EX1048, 21:4-10, but fails to consider that Dr. Phillips acknowledged there is a minimum threshold of purity. *Id.*, 32:18-20, 44:21-45:6, 45:8-17.

The ’422 Patent’s statements reflect a consistent framework: (1) a unified definition—a label is recyclable when its inks wash off such that the PET substrate can be reclaimed as reusable resin; (2) numerical benchmarks—“substantially” removing inks means at least 90% removal; and (3) objective testing protocols—APR guidance with quantitative thresholds for clumping, IV loss, color, haze, and inclusions. This is far more guidance than *Nautilus* requires. Petitioner’s subjectivity arguments fail because judgment of skilled artisans applied to objective measurements is the hallmark of technical claim interpretation, not indefiniteness.

Sonix, 844 F.3d at 1378-79. Petitioner's belated arguments should be struck or given no weight.

V. CONCLUSION

Petitioner has failed to prove unpatentability beyond a preponderance of the evidence. PO respectfully requests the Board confirm claims 1-19 of the '422 Patent.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Patent Owner's Sur-Reply was served on the 29th day of July, 2026, via electronic mail directed to counsel of record for the Petitioner:

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CERTIFICATE OF COMPLIANCE

This Patent Owner's Sur-Reply complies with the type-volume limitations as mandated in 37 C.F.R. § 42.24. According to the word processing system used to prepare this document, the brief contains 5,479 (5,500 limit) words.

/s/ W. Todd Baker

W. Todd Baker