



Brook + Whittle Limited v. Multi-Color Corporation

PGR2025-00025 Hearing

August 7, 2026

Demonstrative Exhibit—Not Evidence

B + W EX2050
Multi-Color v. Brook + Whittle
PGR2025-00025

Petitioner's Case Rests on Unreliable Declarants



Dr. Michael Deible



- Contradictory declarations regarding caustic wash testing (Sur-Reply, 8-9)
- Falsely declared that he reviewed Mitchell and Dr. Bushman's declaration (POR, 54; Sur-Reply 12; Paper 59, 11-12)
- Indefiniteness opinion copied *verbatim* from Dr. Bushman (Paper 59, 11-12; Paper 64, 2-3)



Dr. Craig Bushman



- “Role-switched” from non-hourly fact witness to hourly-compensated expert mid-proceeding (Paper 59, 9)
- Biased former VP of R&D with equity stake and bonus tied to Petitioner's financial performance (Paper 59, 10)
- Relies on APR recognition for Grounds 1–3 while attacking APR for Ground 4 (Paper 59, 6-8)

Other Courts And Other Companies In the Recycling Bottle Market Agree With Patent Owner's Construction

Case 2:24-cv-00735-JRG-RSP Document 112 Filed 12/12/25 Page 1 of 24
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IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

BROOK + WHITTLE LTD.
Plaintiff,

v.
NESTLE USA, INC. and FUJI SEAL
INTERNATIONAL, INC.,
Defendants.

CASE NO. 2:24-CV-00735-JRG-R

CLAIM CONSTRUCTION ORDER

On December 10, 2025, the Court held a hearing to determine the proper construction of disputed terms in United States Patent No. 11,961,422.

Before the Court are the Opening Claim Construction Brief (Dkt. No. 93) filed by Plaintiff Brook + Whittle Ltd., the Responsive Claim Construction Brief (Dkt. No. 97) filed by Defendants Nestlé USA, Inc. and Fuji Seal International, Inc. (collectively, "Defendants"), and Plaintiff's Reply (Dkt. No. 98). Also before the Court is the parties' August 26, 2025 Joint Claim Construction and Prehearing Statement Pursuant to Patent L.R. 4-3 (Dkt. No. 83) and the parties' November 2025 Joint Claim Construction Chart (Dkt. No. 99).

Having reviewed the arguments made by the parties at the hearing and in their construction briefing, having considered the intrinsic evidence, and having made subsidiary findings about the extrinsic evidence, the Court hereby issues this Claim Construction Order. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (*en banc*); *Teva Pharm. USA, Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

I. BACKGROUND

Plaintiff alleges infringement of United States Patent No. 11,961,422 ("the '422 Patent"). Dkt. No. 93, Ex. 1.

- 1 -

B + W EX
Multi-Color v. Brook + Whittle
PGR2025-00025

At the December 10, 2025 hearing, the parties agreed to the Court's preliminary constructions. The Court therefore hereby construes these terms as set forth in the following chart:

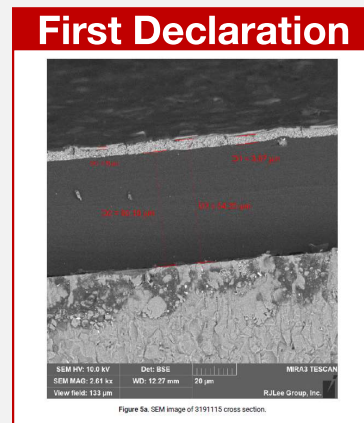
<u>Term</u>	<u>Construction</u>
"recyclable"	Plain meaning (apart from construction of "wherein the recyclable shrink label is recyclable with a PET container")
"wherein the recyclable shrink label is recyclable with a PET container"	"wherein the shrink label is capable of being recycled without separating the shrink label material from a PET container material before or during the recycling process"

EX2037, 7

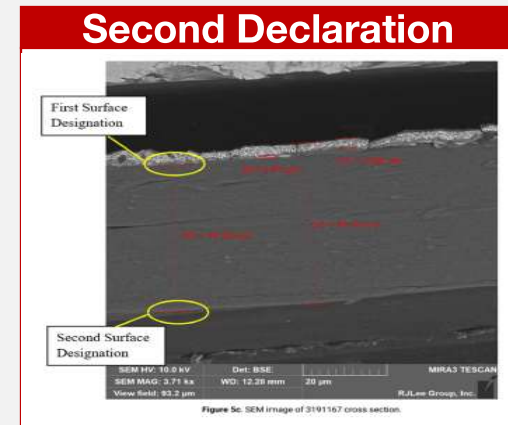
Dr. Deible Admits It's Possible To Print Layers On The Second Surface



Dr. Michael Deible



EX1014, Appx. B, Fig. 5a



EX1046, ¶¶ 14, 20

11 Q. So you would agree with me that in
12 figures 1A through 1E that the film that is
13 designated as 120 is not the outermost layer of each
14 of these embodiments, correct?
15 A. Correct.
16 Q. These figures demonstrate that you can
17 print layers on the portion of the film that faces
18 the container as well as portions of the film that
19 face away from the container, correct?
20 A. Yes.

EX2042, 121:11-20

Dr. Deible Only Evaluated the Silver Ink, Not The Label



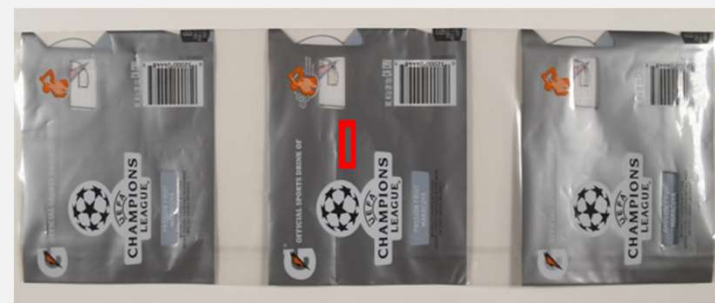
Dr. Michael Deible



Second Declaration

32. Patent Owner further contends that I failed to identify the regions of the Gatorade Label from which the transmittance measurements were obtained. POR, 18. In clarification of paragraph 68 of my First Declaration, the portions of the Gatorade Label that were tested were the silver portions of the label, which contained the light blocking layer identified in my analysis. See EX1014, ¶¶ 65-69. Specifically, the transmission measurements reported in Figure 7 of my First

EX1046 ¶ 32



EX1014, Fig. 4

Dr. Deible's Own Testing Proves the Gatorade Label Is Not Recyclable



Dr. Michael Deible



First Declaration

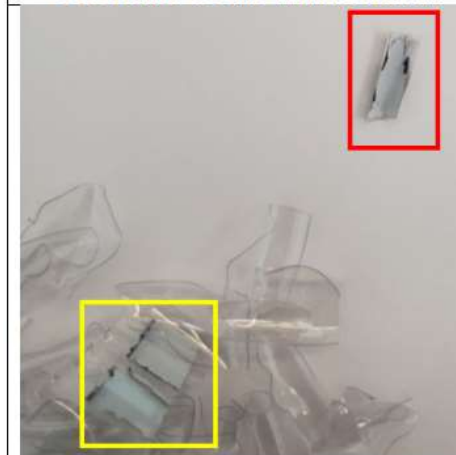
A label is "...considered recyclable if **no inks** are retained on the film after a caustic wash cycle typically used in PET reclaiming processes."

EX1014 ¶ 71

- 5 Q. Okay. Looking at **Figure 11B**, this shows a
6 representative image from a Gatorade label,
7 the sample ending in 1157, correct?
8 A. Yes.
9 Q. And this is a post-caustic wash image,
10 correct?
11 A. After caustic wash, warm water wash, float
12 test, and drying.
13 Q. The portion of the label that is in the center
14 of this image, **you would agree with me that**
15 **not all inks and pigments are removed from**
16 **that portion of the label, correct?**
17 A. **Correct.**

EX2011, 208:5-17

Dr. Deible's Post-Wash Results



EX1014, FIG 11b (annotated)

Petitioner Never Proves The Gatorade Label Received APR Recognition



Dr. Michael Deible



Second Declaration

45. Patent Owner contends that caustic wash testing performed by both parties' experts purportedly demonstrates that the Gatorade Label is not recyclable.

In response, I disagree. I understand from Mr. Bushman's declaration that the Gatorade Label is an SKC Ecolabel™ sleeve label; that the APR (Association of Plastic Recyclers) has recognized that label system as meeting or exceeding APR's Critical Guidance Protocol for Clear PET Articles with Labels and Closures requirements; and that the Watson Standard silver ink used in connection with the Gatorade Label passes recyclability/bleed testing under the APR protocol.

EX1013, ¶¶ 47-48; EX1016; EX1018; EX1019. Accordingly, before I conducted any testing, the available evidence already indicated that the Gatorade Label system had been recognized as recyclable.

EX2046 ¶ 45

16 Q. Okay. Turning to Exhibit 1013,
17 paragraphs 47 and 48, there is no statement in
18 either of those paragraphs that the Gatorade label
19 is an SKC Ecolabel, correct?

20 A. I do not see the term SKC Ecolabel in
21 paragraphs 47 or 48 of Exhibit 1013.

16 Q. Can you please review Exhibit 1016 and
17 let me know if there is any reference to the
18 Gatorade label in this document?

19 A. (Witness reviewing.) After a quick
20 review I don't see the word Gatorade on here
21 anywhere.

23 Q. Can you please turn to Exhibit 1018. And
24 can you please -- let's start. Exhibit 1018 is
25 dated June 13, 2019, correct?

1 A. Yes.

2 Q. And can you please review this document
3 and let me know if you see any reference to the
4 Gatorade label specifically that you are relying on
5 as prior art in this document?

6 A. (Witness reviewing.) This document does
7 not say Gatorade label on it anywhere.

12 Q. Can you please review Exhibit 1019 and
13 let me know if there's any reference specifically to
14 the Gatorade label that you are relying on as prior
15 art in this case in Exhibit 1019?

16 A. So Exhibit 1019 does not say Gatorade on
17 it.

EX2042, 68:16-21, 69:23-70:7,
70:12-17, 75:16-21

MCC manufactured this label yet cannot produce its own certification documents.

Petitioner Never Proves The Gatorade Container Comprises PET



Dr. Michael Deible



12 Q. Okay. Do you see anywhere in
13 paragraph 53 where Mr. Bushman states that the
14 bottle to which the Gatorade labels were affixed are
15 recyclable PET bottles?
16 A. I do not see the word bottle in this
17 sentence -- in this paragraph 53.

22 Q. Okay. We'll keep moving. Exhibit 1013
23 is where I'm going next. You can go back to that,
24 and then if you could turn to paragraph 58. So in
25 paragraph 58 Mr. Bushman does say "The containers to
1 which the Gatorade labels are attached are found in
2 the image above," correct?
3 A. Yes.
4 Q. He doesn't identify that those containers
5 were made of PET in that statement, correct?
6 A. That statement does not contain PET.
7 Q. And there's no way to tell from the image
8 on the bottom of page 24 if that container contains
9 PET?
10 A. There's no way to say if this contains
11 PET.
12 Q. Correct. And you never tested any
13 container in the context of this case to determine
14 whether it contained PET, correct?
15 A. All the testing data is included in the
16 first deposition -- the declaration which did not
17 contain testing of the bottle.

**Claims 14 and 15 not anticipated
Petitioner never established the
PET container element**

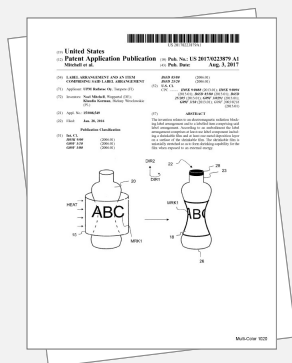


EX1003

EX2042, 129:12-17, 130:22-131:17

Mitchell and Febreze Labels Missing Key Limitations

Mitchell



[0240] The item may also be recyclable, such as clear PET bottle. At the time of recycling the PET bottle, a label attached to the PET bottle, is separated and removed.

EX3002, [0240]

Febreze Label



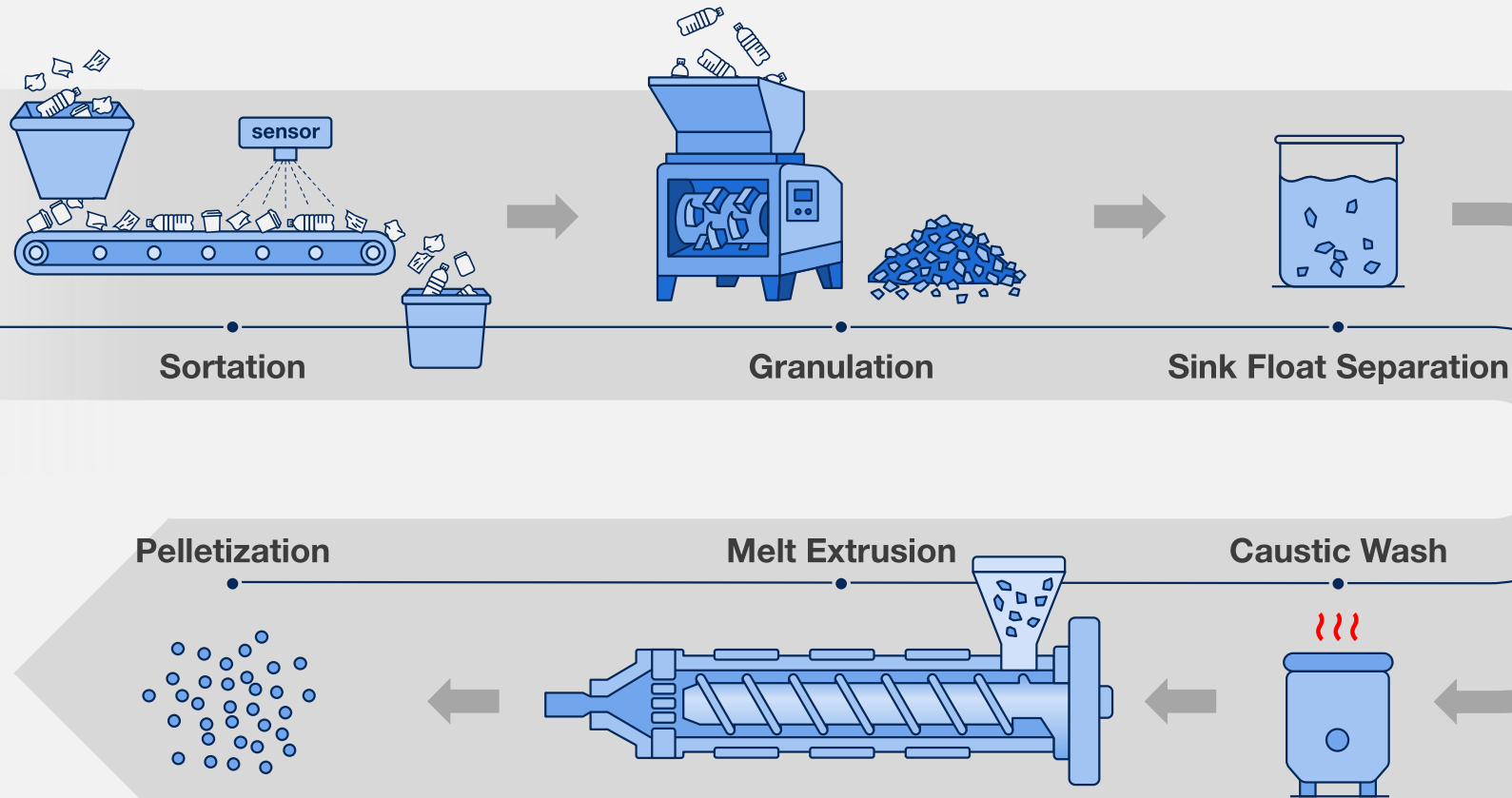
Dr. Craig Bushman



7 Q. And the label itself was not meant
8 to be washed off in a recycling process,
9 correct?
10 A. The aerosol container does not go
11 through the recycling stream.

EX2010, 111:7-11

Recycling Is A Well-Known and Sequential Process Tested Through Objective Metrics



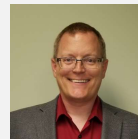
POSITA Understands What Recyclable Means

'422 Patent Specification

According to an embodiment, the labels of the present disclosure can meet certain industry standards, including for example the Association for Plastic Recyclers (APR) Critical Guidance Protocol for Clear PET Articles with Labels and Closures (PET-CG-02), which can be considered as certifying that the film is fully recyclable with the container or bottle.

EX1001, 11:33-38

Dr. Bushman Understands “Fully Recyclable”



Dr. Craig Bushman
MCC
Plastic Industry Solutions

Q. And so what does it mean that it's certified fully recyclable?

A. They are using the APR guidance as a statement of recyclability.

EX2010, 113:14-17

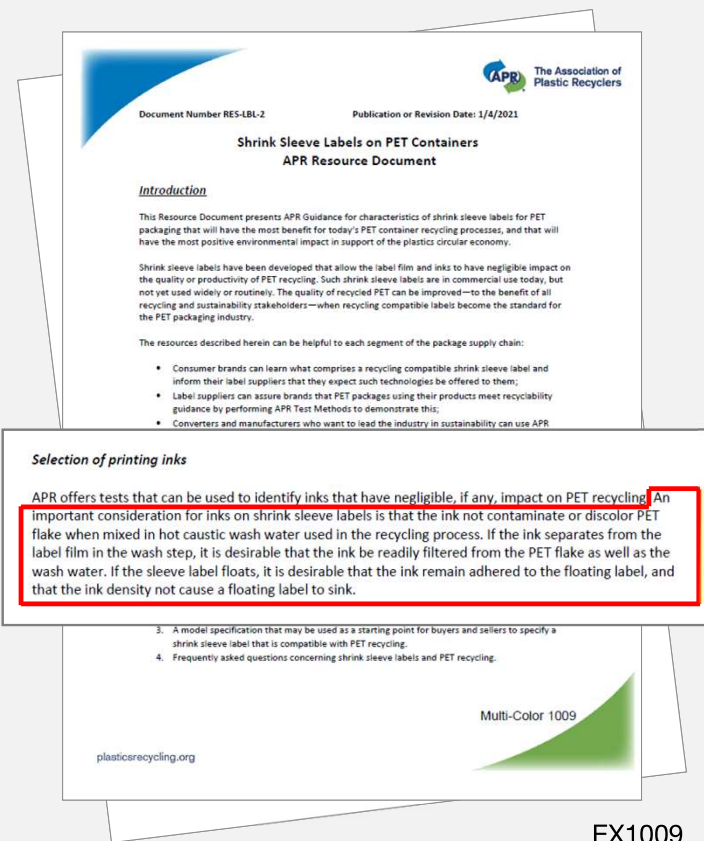
• Sustainability

EL62 met requirements per APR's Critical Guidance - Therefore, it is certified fully recyclable

EX1016

Petitioner's Internal Testing Based On APR Guidance

Verbatim from APR RES-LBL-2 Guidance:



EX1009

Document #:	RD-TM-210-4		Effective Date:	12/21/2018
Revision #:	2		Written By:	B. Pelgen
Revision Date:	12/28/2024		Approved By:	B. McKillip
Revised By:	C. Bushman		Page 1 of 5	
Test Method (TM)		Caustic Evaluation (PET Container) Shrink Sleeve Label		

1.0 Purpose:

1.1 The purpose of this Test Method is to detail the procedure for conducting floatability and ink bleed of shrink sleeve labels used for clear PET bottles. An important consideration for inks on shrink sleeve labels is that the ink not contaminate or discolor PET flake when mixed in hot caustic wash water used in the recycling process. If the ink separates from the label film in the wash step, it is desirable that the ink be readily filtered from the PET flake as well as the wash water. If the sleeve label floats, it is desirable that the ink remain adhered to the floating label, and that the ink density not cause a floating label to sink.

4.0 Associated Documents, Forms and Records:

APR PET-P-00 PET Standard Laboratory Processing Practices
APR PET-P-04 Washing and Sink/Float Separation of PET Flake
APR PET-CG-02 Critical Guidance Protocol for Clear PET Articles with Labels and Closures
APR PET-B-02 Benchmark Evaluation for Clear PET Articles with Labels and Closures
APR PET-S-05 PET Packaging Component Sink or Float Evaluation
APR RES-LBL-2 Shrink Sleeve Labels on PET Containers APR Resource Document, 01/04/2021

EX1012

Petitioner Relies On APR Testing For Certification



Summary of Testing

The objective of testing was to evaluate PET bottles with printed sleeve labels through the recycle process. The testing was done with 50% inked bottles with 6% coverage of the bottle with label or its equal (3% label weight of the bottle plus label) and that it meets the instruction of the Critical Guidance protocol.

The APR specifies that plaque sample meet the following parameters in comparison to the control in order to be acceptable:

- A. $L^* > 82$ for all Blends
- B. Δa^* and $b^* < 1.5$, (no problem)
- C. Control Haze $< 9.5\%$, Test Haze not to exceed 20% (no problem)

Conclusions

This study analyzed a printed sleeve label. Using the APR's guidelines for Sleeve Label Evaluation the following conclusions were determined from testing:

Substrate Evaluation

- Labels substrate did not float during wash/rinse and sink/float.
- During elutriation, an increase percent was seen due to thin label substrate residual.

Ink Evaluation

- The dominantly white black and green printed colors were present in the wash waters as a sediment vs in solution.
- Ink system on test label had high bleeding and minimal staining.
- The ink that did stay with the substrate shows a slight color of greens and black.

Label substrate 870 - TEST does meet the APR Sleeve Label Critical Guidance guidelines.

EX1038, 1, 10-11

Petitioner's Arguments Improperly Demand Absolute Certainty

 *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370-71 (Fed. Cir. 2014)

"[A]bsolute or mathematical precision is not required"

Petitioner's Reply

Free vs Substantially Free Of Colored Plastics. The '422 patent provides "the labels are free or substantially free of colored plastics (including white plastics) that cannot be recycled." EX1001, at 11:29-53. Consideration of ink removal has nothing to do with and is inconsistent with criteria relating to colored plastics. EX1047, ¶¶48-49. In addition, PO provides no objective criteria regarding the fact that colored plastics are "often," but not all of the time, not recyclable. EX2010, 238:12-242:16; EX1047, ¶50.

Reply, 24

'422 Patent Specification

According to an embodiment, the **labels are free or substantially free of colored plastics** (including white plastics) that cannot be recycled.

EX1001, 11:51-53

The **term "substantially"** as used here has the same meaning as "nearly completely," and **can be understood to modify the term that follows by at least about 90%**, at least about 95%, or at least about 98%.

EX1001, 3:34-37

Claims 1–19 Should Be Confirmed

Ground	Key Failure	Record Citation
Ground 1 (Anticipation)	No proof of recyclability — Dr. Deible’s own tests confirmed ink retention; no contemporaneous APR certification exists for the Gatorade Label	<i>EX2011, 208:13–17;</i> <i>EX2042, 74:14–17</i>
Grounds 2–3 (Obviousness)	No credible motivation or expectation of success — hindsight reconstruction using the patent as a template; objective indicia (long-felt need, industry praise, competitor copying) confirm nonobviousness	<i>KSR, 550 U.S. at 421;</i> <i>EX2017, 3–4; EX2016</i>
Ground 4 (Indefiniteness)	The claims are definite — specification, prosecution history, and APR guidance consistently inform a POSITA of claim scope with reasonable certainty; subjectivity argument is untimely new theory contradicting Petitioner’s own positions	<i>Sonix, 844 F.3d at 1380;</i> <i>Reply, §§VII.C–E</i>
Expert Credibility	Petitioner’s experts should be excluded or given no weight — Dr. Deible made false statements under oath and never reviewed key prior art; Dr. Bushman holds irreconcilable positions on APR reliability	<i>EX2011, 118:1–9; EX2043,</i> <i>42:12–53:1</i>

Appendix

Overview of Argument

- Petitioner's experts are unreliable
- Ground 1 (Gatorade Label Anticipation) fails
- Grounds 2–3 (Obviousness) fails
- Ground 4 (Indefiniteness) fails

Claims 1–19 should be confirmed.

Petitioner Improperly Seeks to Shift its Burden



35 U.S.C. § 326(e)

“In a post-grant review instituted under this chapter, the **petitioner shall have the burden** of proving a proposition of unpatentability **by a preponderance of the evidence.**”



Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.,
800 F.3d 1375, 1378-79 (Fed. Cir. 2015)

“In an *inter partes* review, the burden of persuasion is on the petitioner to prove ‘unpatentability by a preponderance of the evidence,’ 35 U.S.C. § 316(e), and that **burden never shifts to the patentee.** ‘Failure to prove the matter as required by the applicable standard means that the party with the burden of persuasion loses on that point—thus, if the fact trier of the issue is left uncertain, the party with the burden loses.’” (citation omitted).

Petitioner's Experts Are Unreliable

Dr. Deible Is An Unreliable Witness



Interactive Commc'ns Int'l v. Blackhawk Network, Inc.

“The Board abused its discretion by improperly crediting expert testimony that has **multiple material contradictions** and that the Board found **lacked credibility** at least in certain respects.”

IPR2024-00465; Paper 40, 3 (PTAB Oct. 9, 2025) (Director Review)



Mitchell v. Holt

“**Telling a lie while under oath is a big deal, no matter what a witness is lying about.** A person submitting testimony swears under oath that the statements they make are true, subject to penalties of perjury. In a situation like the one before us, where a witness has lied while under oath and admits as much, the veracity of the witness is questionable.”

Pat. Interference No. 105,746; Paper 352, 21 (BPAI Apr. 27, 2012)

Dr. Deible Is Not A POSITA Under The Correct Definition

PO's Definition

A bachelor's degree in one of chemical engineering, chemistry, or polymer chemistry, as well as **experience related to packaging films or containers**, but different experiences could cure a deficit.

Petitioner's Definition

A bachelor's degree in one of chemical engineering, chemistry, or polymer chemistry, as well as experience related to packaging films or containers, but different experiences could cure a deficit.



Dr. Craig Bushman



3 A. In terms of maybe I'll -- I'll give
4 a general -- my general understanding of POSITA
5 in this case. It's someone who has a
6 Bachelor's degree and more than **five years of**
7 **experience in the field.** What's how I would
8 view a POSITA in a general way.
9 Q. What's the field?
10 A. **Labels and recycling.**

EX2043, 129:3-10

Dr. Deible Not A POSITA Under *Dr. Bushman's* Definition



Dr. Michael Deible



13 Q. And would you hold yourself out as an expert
14 in recycling?
15 A. I hold myself out as an expert in materials
16 characterization and analysis in chemistry.

16 Q. Okay. Prior to being retained in this case,
17 were you familiar with APR guidance documents?
18 A. No.

13 Q. Are you familiar generally with the recycling
14 process that is used in the United States?
15 MR. SCHATZ: Object to form.
16 A. I would say that I'm generally familiar with
17 some of the techniques that are used, but I
18 would say that, again, as a materials
19 characterization analysis expert, that is not
20 where I spend a lot of my time, in that world.
21 So I guess no.

EX2011, 23:13-16, 24:13-21, 26:16-18

Dr. Phillips Is A POSITA Under *Dr. Bushman's* Definition



Dr. Scott Phillips



11. In addition to my work in academia, I have experience working in the recycled plastics and plastic films industry, including developing new types of pressure-sensitive adhesives for recyclable labels in collaboration with Avery Dennison Corporation from 2018 to present. Much of this work specifically focuses on meeting APR guidelines for pressure-sensitive adhesive labels, including the APR guidelines for caustic washes in bottle and label recycling processes. From 2022 to 2025, I was the founder and owner of Remix Materials, which was a company that aimed to convert mixed, hard-to-recycle plastic waste into lumber and ultimately into robust benches, planters, and related products. Our work focused on repurposing

plastics that do not meet APR recycling guidelines, and thus are discarded as waste during a recycling process. From 2023 to 2024, I was part owner of Citizen Scientific Workshop, which is a company that manufactures small, workshop-scale machines and molds for shredding waste plastics, extruding, and injection molding. Since 2022, I am a co-founder and part owner of Fives Designs, which manufactures mosaic tile building toys out of recycled plastic. A primary feature of our products is their ability to be recycled again, following APR guidelines.

EX2013 ¶ 11

Dr. Deible's Inconsistencies – Caustic Wash Testing



Dr. Michael Deible



First Declaration

[Claim 1 (cont.)] ...and where in the recyclable shrink label is recyclable with a PET container.

71. To determine if a label is recyclable with a PET container, laboratory tests were conducted in reference to the disclosures in the '422 patent (Ex. 1001, at 6:61-64; 11:29-53) and RD-TM-210-4 (Ex. 1012). For example, the '422 patent states in column 6 line 61 that a label is "...considered recyclable if no inks are retained on the film after a caustic wash cycle typically used in PET reclaiming processes." Lab scale

EX2014 ¶71

Second Declaration

46. My testing was therefore not intended to establish recyclability in the first instance, as Patent Owner suggests. *See* POR, 23. Rather, my testing was performed to confirm that the Gatorade Label behaved consistently with what would be expected of an APR-recognized recyclable label system. Specifically,

EX2046 ¶ 46

Dr. Deible's Inconsistencies – Mitchell Reference



Dr. Michael Deible



First Declaration

3. In writing this Declaration, I have considered the following: the '422 patent, the prosecution history of the '422 patent, the prior art cited below, the materials discussed and referenced herein, and my own knowledge and experience, including my work experience in the fields described herein, and my experience of working with others in those fields during the relevant period.

EX1014 ¶ 3

3 The Mitchel prior art reference is being
4 cited in the patent prosecution history that
5 we're reviewing right now. My question is,
6 did you independently review the patent
7 application, Mitchel, in connection with
8 forming your opinion?
9 A. No.

EX2011, 118:3-9

Dr. Deible's Inconsistencies – Mitchell Reference



Dr. Michael Deible



134. In my First Declaration, I opined that claim 4 would have been obvious over the Gatorade Label in view of the knowledge of a POSITA, including Mitchell et al. (US 2017/0223879) ("Mitchell"), because the only

look to the label." Ex. 1002, at 239. In addition, since then, I have reviewed Mitchell (EX1020) in its entirety, together with the prosecution history applying it (EX1002). My opinions are unchanged.

EX1014, ¶ 123; Figs. 5b-5d, 6b-6d, 15b-15d. Mitchell supplies the ordering teaching that bridges this difference, as the Examiner found, "[i]t would have been obvious ... to provide the metallization layer (high opacity layer) such that it is

138. Patent Owner argues the applicant "traversed" the Mitchell rejection during prosecution. POR, 59. The prosecution history shows the applicant distinguished Mitchell on a different basis, namely, that Mitchell's pigments are

solution then existed. POR, 64. Thus, the design need was recognized and pressing before the priority date which is precisely what prompts a POSITA to pursue known solutions, such as the Gatorade Label's construction, and art-recognized refinements such as the claimed layer ordering recognized by Mitchell. The '422

146. Patent Owner's "teaches away" argument, that Mitchell is non-recyclable and contemplates label removal, does not change my opinion. POR, 56-57. Ground 2 relies on Mitchell solely for the ordering of the printed layers; the

147. Accordingly, it remains my opinion that claim 4 would have been obvious over the Gatorade Label in view of the knowledge of a POSITA, including Mitchell.

EX1046 ¶ 134, 135, 137, 138, 146, 147

Dr. Deible's Inconsistencies – Dr. Bushman's Declaration



Dr. Michael Deible



First Declaration

25. Accordingly, my analysis and conclusions expressed in this Declaration are based on the perspective of a POSITA having this level of knowledge and skill. My education, technical expertise, and personal knowledge discussed above demonstrates that I meet and exceed the qualifications of a POSITA. In addition, as indicated herein, I have considered and relied upon the Declaration of Mr. Craig Bushman, who I understand has experience in, among other fields, labels and the design and manufacturing of labels.

EX1014 ¶ 25

Second Declaration

45. Patent Owner contends that caustic wash testing performed by both parties' experts purportedly demonstrates that the Gatorade Label is not recyclable. In response, I disagree. I understand from Mr. Bushman's declaration that the Gatorade Label is an SKC Ecolabel™ sleeve label; that the APR (Association of Plastic Recyclers) has recognized that label system as meeting or exceeding APR's Critical Guidance Protocol for Clear PET Articles with Labels and Closures requirements; and that the Watson Standard silver ink used in connection with the Gatorade Label passes recyclability/bleed testing under the APR protocol.

EX1013, ¶¶ 47-48; EX1016; EX1018; EX1019. Accordingly, before I conducted

EX1046 ¶ 45

First Deposition

4 Q. All right. You've testified twice today that
5 you have not reviewed the Bushman declaration,
6 correct?
7 A. Yes.

EX2011, 162:4-7

Second Deposition

14 Q. Okay. Now that you have Exhibit 1013 in
15 front of you, do you recall having ever reviewed
16 this document before?
17 A. No.

EX2042, 74:14-17

Petitioner Suggests Counsel Relayed information



Dr. Craig Bushman



Dr. Michael Deible



In any event, Dr. Deible made no materially false statement. As to Dr. Bushman's declaration, the portions of that declaration on which Dr. Deible relied were conveyed to him by counsel, as Dr. Deible testified. EX2011, 162:4-24. FRE

Paper 63, 6

18 Q. Okay. So to -- just so that we're on the same
19 page so I don't have to ask this for a ton of
20 paragraphs in your declaration, is it fair to
21 say that for every citation to Exhibit 1013 in
22 your expert report, that that information was
23 relayed to you through Counsel?
24 A. Yes.

EX2011, 162:18-24

Petitioner Suggests Counsel Relayed information

patent. That is, it should be no surprise that Petitioner's Gatorade Label was offered for sale and sold in light of the undisputed fact that recyclable packaging has been known for decades. **Ex. 1013, at ¶36.** In addition, the market has required light

39. For similar reasons, it is my opinion that the fact that Petitioner's Febreze Label, a shrink label with a light blocking layer, was offered for sale and sold before the priority date of the '422 patent, should not be any surprise given the market forces acknowledged by the '422 patent. **Ex. 1013, at ¶37.** As noted above, the market has

date and/or publication date according to the below table. I am relying upon the **Declaration of Mr. Craig Bushman (Ex. 1013, at ¶¶43-57)** relating to relevant dates and the respective qualification of the art as prior art, including the disclosed dates relevant to the Gatorade Label and the Febreze Label.

57. The Gatorade Label is a shrink sleeve label that is recyclable with a PET container. **Ex. 1013, at ¶44.** It is a PET film and a washable ink system designed to

58. The Gatorade Label was produced and sold publicly in 2020, in substantial quantities. **Ex. 1013, at ¶¶45-46.**

59. Based on **discussions with Craig Bushman** of Multi-Color, I understand that the Gatorade Label and the Febreze Label are heat shrink labels. **Ex. 1013, at ¶¶44-51.** My analysis herein confirms this.

78. In connection with my analysis, I have considered that the Gatorade Label is an SKC Ecolabel™ sleeve label. **Ex. 1013, at ¶47;** Ex. 1016. And, the APR, the

is an SKC Ecolabel™ sleeve label. **Ex. 1013, at ¶47;** Ex. 1016. And, the APR, the Association of Plastic Recyclers, has recognized this label as meeting or exceeding APR's Critical Guidance Protocol for Clear PET Articles with Labels and Closures Document requirements. **Ex. 1013, at ¶47;** Ex. 1018. The SKC Ecolabel™ has received

79. In connection with my analysis, I have also considered that the silver ink used in connection with the Gatorade Label is supplied by a company, Watson Standard, which confirms that the silver ink passes recyclability/bleed testing set forth in the protocol established by the Association of Postconsumer of Plastic Recyclers. **Ex. 1013, at ¶48;** Ex. 1019. This supports and confirms my analysis and my

98. **Attached to the Craig Bushman declaration** is what I understand to be the bottles to which the tested labels are affixed, which are accordingly recyclable PET bottles. **Ex. 1013, at ¶49.** The internal surface of the sleeve or tube is the

a PET standard matched to the Wiley KnowItAll Library. As can be seen, all samples are consistent with PET. In addition, I am relying on the Declaration of Mr. Craig Bushman with regard to PET that is crystallizable. **Ex. 1013, at ¶44;** Ex. 1017.

the field of labels to change the order of the layers. For example, changing the order of the layers with regard to the Gatorade Label, to apply the printed white ink opacity layer and then the printed metallic layer, is simply a matter of changing the ink printed within each printing station on the press. **Ex. 1013, at ¶50.** Such a change

EX1014 ¶ 38, 39, 55, 57-59, 78, 79, 98, 102, 109, 111, 112, 115, 125, 126, 129

111. The Gatorade Label is a recyclable shrink label that comprises an indicia layer, a high opacity layer, and a light blocking layer, in close proximity to each other. **Ex. 1013, at ¶¶44, 50.** In like manner, and as explained (e.g., above at ¶¶42-43 visible and provide (sic) a metallic look to the label." Ex. 1002, at 239. In connection herewith, I am considering and relying upon the Examiner's determination and **accompanying information from Mr. Craig Bushman. Ex. 1013, at ¶¶40-41 and 47-48.**

115. In connection herewith, I am considering and relying upon the **Declaration of Mr. Craig Bushman, Ex. 1013.**

125. As explained above, the Gatorade Label is a shrink sleeve label that is recyclable with a PET container. **Ex. 1013, at ¶44.** It is a PET film and a washable

126. The Febreze Label is a shrink sleeve label. **Ex. 1013, at ¶¶52-57.** It includes light blocking features (including ink layers of metal particulates, and including aluminum and titanium dioxide for the silver and white ink). **Id. at ¶52.** The Febreze Label is structured such that the high opacity layer is disposed between the indicia layer and the light blocking layer. **Id. at ¶56.**

129. The Gatorade Label is a recyclable shrink label that comprises an indicia layer, a high opacity layer, and a light blocking layer, in close proximity to each other. **Ex. 1013, at ¶¶44, 50.** In like manner, the Febreze Label is a shrink label that comprises an indicia layer, a high opacity layer, and a light blocking layer, in close proximity to each other. **Id. at ¶56.** Thus, the Gatorade Label and the Febreze Label

Petitioner Suggests Counsel Relayed information



Fed. R. Evid. 703

“An expert may base an opinion on facts or data in the case that the expert has been **made aware of** or personally observed.”

3. In writing this Declaration, **I have considered the following:** the ‘422 patent, the prosecution history of the ‘422 patent, the prior art cited below, the **materials discussed and referenced herein,** and my own knowledge and experience, including my work experience in the fields described herein, and my experience of working with others in those fields during the relevant period.

25. Accordingly, my analysis and conclusions expressed in this Declaration are based on the perspective of a POSITA having this level of knowledge and skill. My education, technical expertise, and personal knowledge discussed above demonstrates that I meet and exceed the qualifications of a POSITA. In addition, as indicated herein, **I have considered and relied upon the Declaration of Mr. Craig Bushman,** who I understand has experience in, among other fields, labels and the design and manufacturing of labels.

EX1014 ¶¶ 3, 25

Dr. Deible's Verbatim Indefiniteness Opinions

Dr. Deible (EX1013)

76. Sixth, the '422 patent provides "That is, according to an embodiment, the labels of the present disclosure are fully recyclable." *Id.*

77. Seventh, the '422 patent provides "For example, the labels may include inks that can be washed off in a typical PET recycling wash (caustic wash) and the polymers used in the labels are preferably clear (preferably clear PET)." *Id.*

78. Eighth, the '422 patent provides "According to an embodiment, the labels are free or substantially free of inks that cannot be washed off in a caustic wash." *Id.*

Dr. Bushman (EX1014)

149. Sixth, the '422 patent provides "That is, according to an embodiment, the labels of the present disclosure are fully recyclable." *Id.*

150. Seventh, the '422 patent provides "For example, the labels may include inks that can be washed off in a typical PET recycling wash (caustic wash) and the polymers used in the labels are preferably clear (preferably clear PET)." *Id.*

151. Eighth, the '422 patent provides "According to an embodiment, the labels are free or substantially free of inks that cannot be washed off in a caustic wash." *Id.*

***The entire indefiniteness opinions (sixteen paragraphs)—
are copied and pasted down to extraneous spacing.***

Compare EX1013 ¶¶ 70-86 with EX1014 ¶¶ 144-160

Claim Construction

PO's Construction Is Consistent With the Board's

Board's Preliminary Two-Prong Test

A label is **NOT** recyclable if:

- 1) The label must be removed from the PET recycling stream for the container to be recycled; or
- 2) The label contains inks or pigments that could not be removed during recycling such that they would contaminate the PET polymer flake.

Institution Decision; Paper 14, 11 (preliminary construction)

Patent Owner's Proposed Construction

“Capable of being recycled without removing the label from a container before or during the recycling process.” (Paper 8, 19)

✓ **Consistent** with the Board's construction and the intrinsic record.

Patent Owner's Construction Is Consistent With The Prosecution History

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	Unassigned	Attorney Docket No.:	0644.00
Confirmation No.:	Unassigned	Customer No.:	26813
Filing Date:	Herewith	Examiner Name:	Unassigned
First Named Inventor:	Andrew Sharp	Group Art Unit:	Unassigned
Title of Invention:	RECYCLABLE HEAT SHRINK FILM FOR RECYCLABLE CONTAINER		

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Prior to taking up the above-identified application for examination, please examine the application as follows:

Amendments to the Specification begin on the page entitled "Amendments to the Specification."

Amendments to the Claims are reflected in the listing of claims which begin on the page entitled "Amendments to the Claims."

Remarks begin on the page entitled "Remarks."

The term "recyclable" does further limit the claim in that the claimed label **must be capable of being recycled**. Not all combinations of shrink films and light blocking materials are capable of being recycled, as further discussed below. It should also be noted that removing the label before or during the recycling process is not evidence of the recyclability of the label. If anything, the desire to provide a removable label implies that the label may not be recyclable and must be removed before the container itself can be recycled. Removing the label during the recycling process is not equivalent to actually recycling the label.

EX1002, 335

Multi-Color 1002
1

Petitioner's Grounds

1

Anticipation: Gatorade Label

2

Obviousness: Gatorade Label & Febreze Label

3

Obviousness: Gatorade Label & Mitchell

4

Indefiniteness

Ground 1

Anticipation: Gatorade Label

Independent Claim 1 of the '422 Patent

Claim 1

A recyclable shrink label comprising:

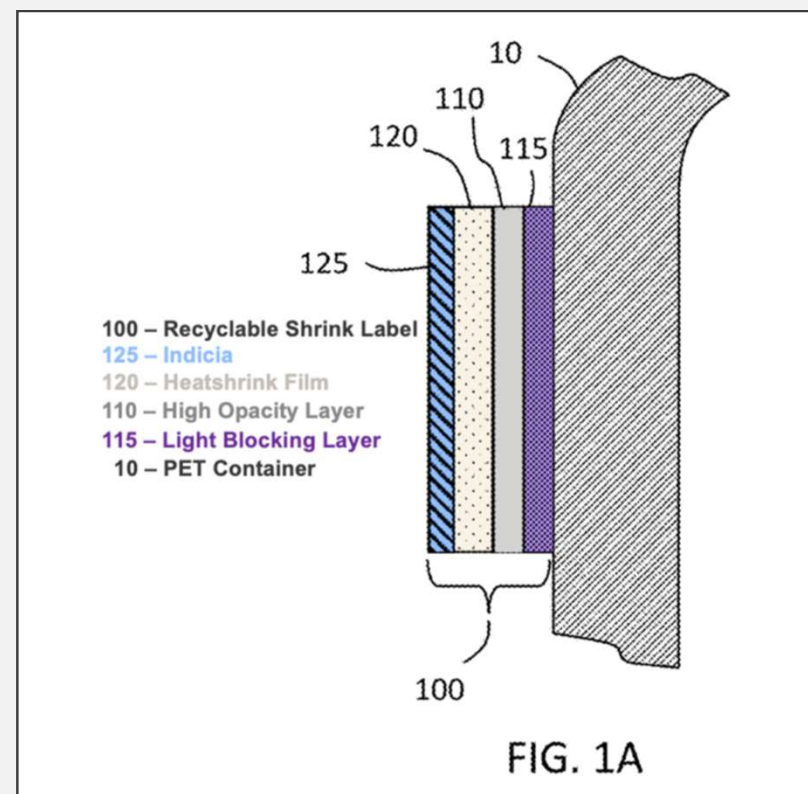
a heat shrink film having **a first surface and a second surface opposite of the first surface**, the heat shrink film having a thickness from 15 μm to 100 μm ;

and a **light blocking layer disposed adjacent the first surface** and comprising a light blocking component, the **light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm**,

wherein the light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm , wherein the particulate comprises metal, metal oxide, a reflective pigment, carbon black, mica, or a combination thereof, and

wherein the recyclable shrink label is recyclable with a PET container.

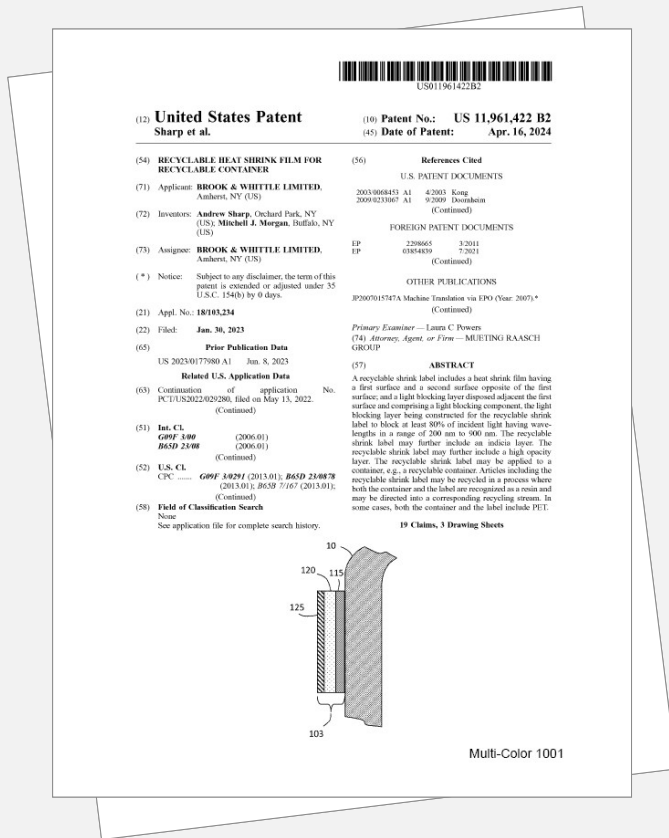
Ex. 1001, Cl. 1



EX2012, 14 (annotating EX1001, Fig. 1A)

1[a] / 19[a]: “a first surface and a second surface”

1[b] / 19[b]: “disposed adjacent the first surface”



Claim 1

A recyclable shrink label comprising:

a heat shrink film having **a first surface and a second surface opposite of the first surface**, the heat shrink film having a thickness from 15 μm to 100 μm ;

and a **light blocking layer disposed adjacent the first surface and comprising a light blocking component**, the light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm,

wherein the light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm , wherein the particulate comprises metal, metal oxide, a reflective pigment, carbon black, mica, or a combination thereof, and

wherein the recyclable shrink label is recyclable with a PET container.

Ex. 1001, Cl. 1

Petitioner Failed to Comply With Board Requirement to Identify With Particularity



Intelligent BioSys., Inc. v. Illumina Cambridge Ltd.

“[T]he initial **petition** [must] identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim.’”

821 F.3d 1359, 1369 (Fed. Cir. 2016)

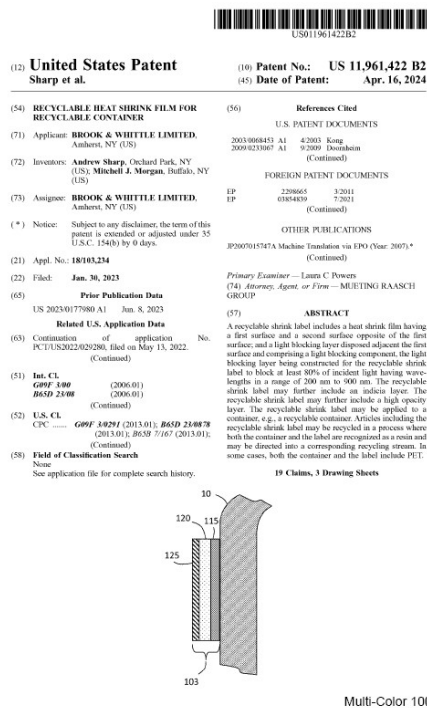


ATEN Int’l Co. v. Uniclass Tech. Co

“Testimony concerning anticipation must typically ‘**explain in detail**’ how each claim element is disclosed in the prior art reference. The **testimony is insufficient if it is merely conclusory.**”

932 F.3d 1364, 1368 (Fed. Cir. 2019) (quoting *Schumer v. Lab’y Comput. Sys., Inc.*, 308 F.3d 1304, 1315–16 (Fed. Cir. 2002))

1[b] / 19[b]: “recyclable shrink label to block at least 80% of incident light”



Claim 1

A recyclable shrink label comprising:

a heat shrink film having a first surface and a second surface opposite of the first surface, the heat shrink film having a thickness from 15 μm to 100 μm ;

and a light blocking layer disposed adjacent the first surface and comprising a light blocking component, the light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm,

wherein the light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm , wherein the particulate comprises metal, metal oxide, a reflective pigment, carbon black, mica, or a combination thereof, and

wherein the recyclable shrink label is recyclable with a PET container.

Ex. 1001, Cl. 1

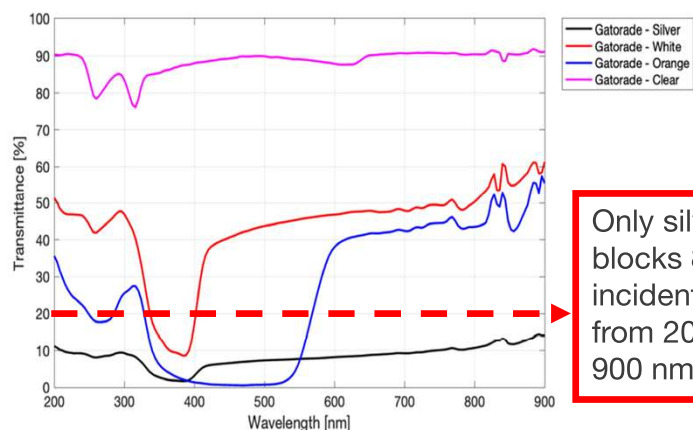
The Experts Agree How To Measure Light Transmittance of the Label

Second Declaration

Moreover, Dr. Reitman's underlying measurements do not contradict mine. Dr.

EX1046, ¶ 33

Reitman Declaration



Only silver ink blocks 80% of incident light from 200 to 900 nm.

Figure C29: Integrated, spectrally-resolved transmittance measurements of different regions of the Gatorade Label.

EX2012, Fig. C29

Deible Deposition

If you wanted to measure the light transmittance of the entire label, how would you do that?

A. So the instrument that was used only has a space for a small portion of the label. So you couldn't just take the entire label and load it into the instrument to analyze transmittance. So you would have to do representative sections.

Q. And that's exactly what Dr. Reitman did, correct?

A. I believe that's what she did with the white, orange and clear portions, right.

Q. And also the silver portion, correct?

A. Yeah, there's a silver on there, too.

EX2042, 113:10-17, 114:5-10

The Gatorade Label Blocks At Most 57% Of Incident Light



Dr. Scott Phillips



Phillips Declaration

72. Petitioner's analysis assumes that the silver portion of the label covers the entire label, however, I understand Dr. Reitman performed cross-section SEM analysis and quantitative color thresholding measurements and determined the percentage of the Gatorade Label incorporating aluminum to be between 52-68%, leaving 32%-48% exposed to greater amounts of light. EX2012 ¶¶ 78-80. Moreover, Dr. Deible's transmittance testing shows that the silver portion of the Gatorade label purportedly blocks only around 85% of light near the 900nm range. EX1014 at FIG. 7 (maroon, green, and purple lines).

73. The claims require that the light blocking layer must allow the claimed recyclable shrink label to block 80% of incident light across the 200-900 nm range and I understand Petitioner points to the entire label as the claimed "recyclable shrink label." Pet. at 14. Therefore, even assuming 68% silver ink coverage (the high end of Dr. Reitman's range), the Gatorade label still leaves 32% of the label exposed to much higher quantities of light that Dr. Deible does not measure. Under Dr. Deible's analysis, therefore, the Gatorade label, as a whole, blocks at most 57% of incident light according to the weighted average calculation below.

$$\text{Weighted Average} = (68\% \text{ silver portion coverage} \times 85\% \text{ transmittance}/100)$$

EX1013, ¶¶ 72-73

Petitioner's New Construction Attempts to Belatedly Rewrite Claim Language



Dr. Michael Deible



Second Declaration

Rather, claim 1 recites "a light blocking layer" that is "constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm." EX1001, cl. 1. The claim language does not use the term "entire" and does not require that every portion of the shrink label independently satisfy the recited threshold. Nor does the claim require that the light blocking layer itself be deposited continuously across, or extend over, the entirety of the shrink label. In my opinion, a POSITA would understand that the recited light-blocking functionality is attributable to the claimed light blocking

layer and is satisfied where that light blocking layer is present and performing its intended function.

EX1046, ¶ 28

Petitioner's Rewriting of Claim Renders Light Blocking Limitation Meaningless



Dr. Michael Deible



'422 Patent

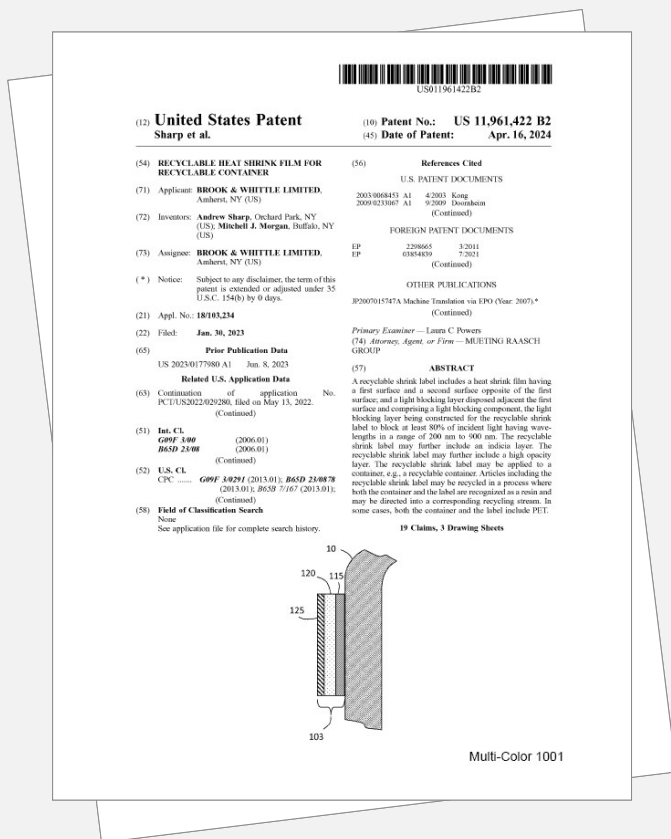
The term label is used here broadly. Although many embodiments described herein may be characterized as shrink sleeves, the disclosure and the term label are not limited to such embodiments only. The label may cover at least some clear or transparent parts of a package. The label may serve to block light from reaching a product inside the package. The label may be used to provide graphic elements and information about the product, such as product information required by law, if applicable (e.g., ingredient list and/or nutritional facts).

EX1001, 6:23-32

25 Q. If you had a label that had one square
Page 111
1 centimeter of aluminum and the rest of the label was
2 covered in white ink made of titanium dioxide, would
3 you only evaluate that one square centimeter of
4 aluminum in order to determine whether the label
5 blocked at least 80 percent of incident light having
6 wavelengths in a range from 200 nanometers to 900
7 nanometers?
8 A. I would test the portion of the label
9 that contained the stated light-blocking layer.
10 Q. Regardless of how big or small that
11 section of the label was.
12 A. Correct.

EX2042, 110:25-111:12

1[c]: “light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm”



Claim 1

A recyclable shrink label comprising:

a heat shrink film having a first surface and a second surface opposite of the first surface, the heat shrink film having a thickness from 15 μm to 100 μm;

and a light blocking layer disposed adjacent the first surface and comprising a light blocking component, the light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm,

wherein the light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm, wherein the particulate comprises metal, metal oxide, a reflective pigment, carbon black, mica, or a combination thereof, and

wherein the recyclable shrink label is recyclable with a PET container.

Ex. 1001, Cl. 1

There Is No Dispute Dr. Deible Did Not Measure “Particle Size”



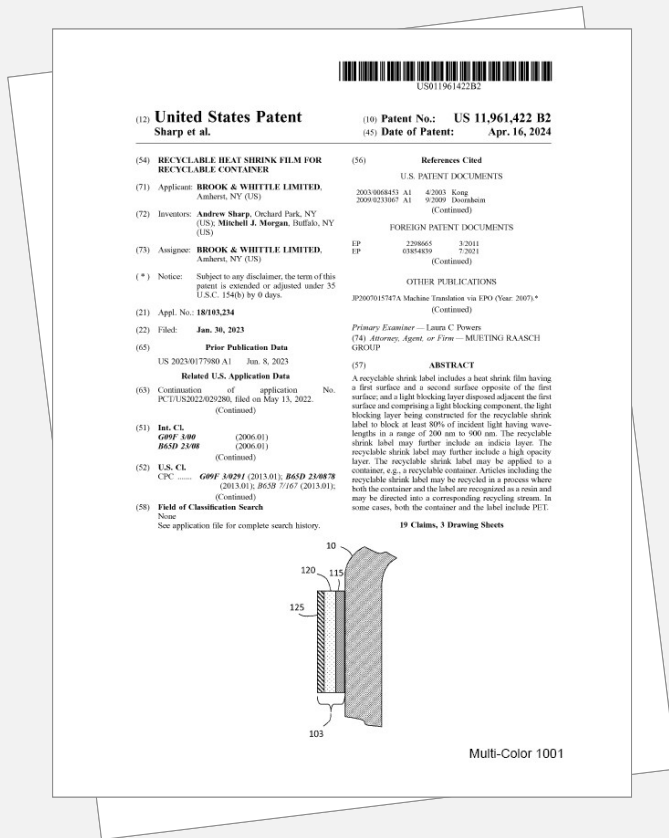
Dr. Michael Deible



7 Q. You measured the layer of aluminum to
8 establish particle size, correct?
9 A. To establish particle thickness, yes.
10 Q. Okay. And then you used particle
11 thickness as a proxy for particle size, correct?
12 A. So in the images that are in my first
13 declaration from the testing, the specific dimension
14 that is measured is the thickness. The other
15 dimension that's visible would be the length, and
16 that can be inferred from the scale bar in the
17 image. So it's not a direct measurement, but the
18 scale bar's still there for measurement.

EX2042, 124:7-18

1[d] / 19[d]: “wherein the recyclable shrink label is recyclable with a PET container”



Claim 1

A recyclable shrink label comprising:

a heat shrink film having a first surface and a second surface opposite of the first surface, the heat shrink film having a thickness from 15 μm to 100 μm ;

and a light blocking layer disposed adjacent the first surface and comprising a light blocking component, the light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm,

wherein the light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm , wherein the particulate comprises metal, metal oxide, a reflective pigment, carbon black, mica, or a combination thereof, and

wherein the recyclable shrink label is recyclable with a PET container.

Ex. 1001, Cl. 1

Dr. Deible's Shifting Recyclability Standard—Yet, Both Fail



Dr. Michael Deible



First Declaration

[Claim 1 (cont.)] ...and where in the recyclable shrink label is recyclable with a PET container.

71. To determine if a label is recyclable with a PET container, laboratory tests were conducted in reference to the disclosures in the '422 patent (Ex. 1001, at 6:61-64; 11:29-53) and RD-TM-210-4 (Ex. 1012). For example, the '422 patent states in column 6 line 61 that a label is "...considered recyclable if no inks are retained on the film after a caustic wash cycle typically used in PET reclaiming processes." Lab scale

EX1014 ¶ 71

Second Declaration

46. My testing was therefore not intended to establish recyclability in the first instance, as Patent Owner suggests. See POR, 23. Rather, my testing was performed to confirm that the Gatorade Label behaved consistently with what would be expected of an APR-recognized recyclable label system. Specifically,

EX1046 ¶ 46

Claims 14 and 15 Require A “Container Comprising PET”

(12) **United States Patent**
Sharp et al.

(16) **Patent No.:** US 11,961,422 B2
(45) **Date of Patent:** Apr. 16, 2024

(54) **RECYCLABLE HEAT SHRINK FILM FOR RECYCLABLE CONTAINER**

(71) Applicant: **BROOK & WHITTLE LIMITED**,
Amherst, NY (US)

(72) Inventors: **Andrew Sharp**, Orchard Park, NY
(US); **Michelle J. Morgan**, Buffalo, NY
(US)

(73) Assignee: **BROOK & WHITTLE LIMITED**,
Amherst, NY (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **18103,234**

(22) Filed: **Jan. 30, 2023**

(65) **Prior Publication Data**

US 2023/0177980 A1 Jan. 8, 2023

Related U.S. Application Data

(63) Continuation of application No.
PCT/US2022/029280, filed on May 13, 2022.
(Continued)

(51) **Int. Cl.**

B65D 1/00 (2006.01)

B65D 23/00 (2006.01)

(Continued)

(52) **U.S. Cl.**

B65D 1/0071 (2013.01); **B65D 23/0078**
(2013.01); **B65D 23/0079** (2013.01);
(Continued)

(58) **Field of Classification Search**

None

See application file for complete search history.



US011961422B2

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(Continued)

Primary Examiner—Laura C. Powers

(74) **Attorney, Agent, or Firm**—MUEITING RAASCH
GROUP

ABSTRACT

A recyclable shrink label includes a heat shrink film having

a first surface and a second surface opposite of the first

surface; and a light blocking layer disposed adjacent the first

surface and comprising a light blocking component, the light

blocking layer being constructed for the recyclable shrink

label to block at least 90% of incident light having wave-

lengths in a range of 200 nm to 500 nm. The recyclable

shrink label may further include an indicia layer. The

recyclable shrink label may be applied to a

container, e.g., a recyclable container. Articles including the

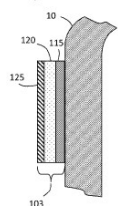
recyclable shrink label may be recycled in a process where

both the container and the label are recognized as a resin and

may be directed into a corresponding recycling stream. In

some cases, both the container and the label include PET.

19 Claims, 3 Drawing Sheets



Multi-Color 1001

Claim 14

An article comprising:

a **container comprising polyethylene terephthalate (PET)** and
defining an external surface; and

the recyclable shrink label of claim 1 disposed on the container.

Claim 15

The article according to claim 14, wherein the first surface of the heat
shrink film faces the external surface of the **container**.

Ex. 1001, Cls. 14, 15

Dependent Claims 2-3 and 5-18 Also Fail

First Deposition

7 Q. Okay. In order for something to be a layer,
8 and for layers to be disposed between each
9 other, would you agree that those layers have
10 to overlap?

14 A. Would it be incorrect to say that you could
15 have layers side by side?

16 BY MS. STONE:

17 Q. I'm asking you your opinion on that.

18 A. Yeah. I guess at some point we would expect
19 it to overlap with something else. But you
20 could have one substrate with something else
21 on top of it, and something else beside it
22 potentially. So.

EX2011, 178:7-22

Second Declaration

label "further compris[es] an indicia layer." EX1001, cl. 2. A POSITA would understand that the claim requires the presence of an indicia layer. It does not require that the indicia layer be formed by stacked inks, comprise discrete ink layers deposited on top of one another, or otherwise include the additional limitations that Patent Owner seeks to import into the claim.

EX1046, ¶¶82-83

This directly contradicts his own concession.

Trial Practice Guide

Thus, parties that incorporate expert testimony by reference in their petitions, motions, or replies without providing explanation of such testimony risk having the testimony not considered by the Board. See *Cisco Systems, Inc. v. C-Cation Techs., LLC*, IPR2014-00454 (PTAB Aug. 29, 2014) (Paper 12) (informative).

D. Claims 5-19

PO advances no independent arguments regarding claims 6-9 and 14-19.

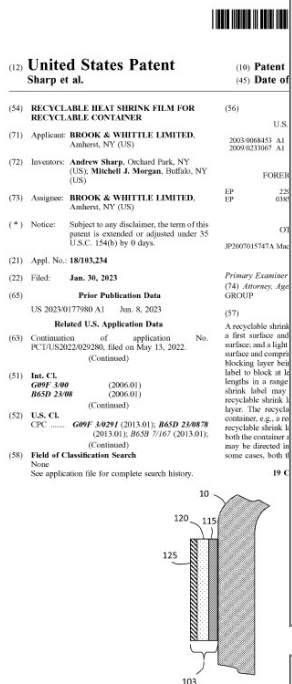
The record confirms: FTIR establishes the film consists of PET (claim 5), EX1046, ¶¶94-96; the rutile TiO₂ satisfies claim 10, EX1046, ¶¶101-103; the EDS spectra identifying aluminum satisfy claim 11, EX1046, ¶¶104-106; and even adopting Dr. Reitman's figures, the Label falls within the recited ppr ranges of claims 12 and 13—PO's evidence confirming, not rebutting, anticipation, EX1046, ¶¶107-117. Claims 14-16 follow from the undisputed structural arrangement: the Label on its PET bottle is the claimed "article" (claim 14), EX1046, ¶¶118-120; the container-facing first surface faces the container's external surface (claim 15), EX1046, ¶¶121-123; and the printed indicia on that surface satisfy claim 16, EX1046, ¶¶124-126.

Reply, 9-10

Grounds 2 and 3

**Obviousness:
Gatorade Label in view of:
POSA's Knowledge
(Mitchell) & Febreze Label**

'422 Patent, Claim 4



1. A recyclable shrink label comprising:
a heat shrink film comprising polyethylene terephthalate (PET) and having a first surface and a second surface opposite of the first surface, the heat shrink film having a thickness from 15 μm to 100 μm ; and
a light blocking layer disposed adjacent the first surface and comprising a light blocking component, the light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm, wherein the light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm , wherein the particulate comprises metal, metal oxide, a reflective pigment, carbon black, mica, or a combination thereof, and
wherein the recyclable shrink label is recyclable with a PET container.

3. The recyclable shrink label of claim 1 further comprising a high opacity layer comprising a white pigment.

4. The recyclable shrink label of claim 3, wherein the recyclable shrink label comprises an indicia layer and wherein the high opacity layer is disposed between the indicia layer and the light blocking layer.

EX1001, Cl. 4

EX1001, Cls. 1, 3

Obviousness Over Gatorade Combinations

1

No Reasonable Expectation of Success

2

No Motivation to Combine

3

Secondary Considerations

Obviousness Over Gatorade Combinations

1

No Reasonable Expectation of Success

2

No Motivation to Combine

3

Secondary Considerations

Secondary References Used Solely for One Element

PGR2025-00025
U.S. PATENT NO. 11,961,422

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MULTI-COLOR CORPORATION,
Petitioner,

v.

BROOK & WHITTLE LIMITED,
Patent Owner.

Case PGR2025-00025
U.S. Patent No. 11,961,422

PETITIONER'S REPLY TO
PATENT OWNER'S RESPONSE

Mitchell does not teach away on the alleged basis that it is not recyclable, as Ground 2 relies on it solely for layer ordering. It is improper to attack reference

Reply, 18

POR, 72-73; EX1046, ¶150; *In re Keller*, 642 F.2d at 426. Ground 3 relies on the Febreze Label only for the layer ordering; the recyclable PET label remains the Gatorade Label. EX1046, ¶150.

Reply, 14

Dr. Deible Never Analyzed Whether Rearranging Layers Would Impact Other Claim Limitations of Claim 4



Dr. Michael Deible



Q. Okay. My question for you is, did you do any analysis or consider whether that different order of layers would have any impact on the recyclability of that resulting label with respect to whether that label could be recyclable with a PET container?

MR. SCHATZ: Object to form.

A. So outside of the analysis of the Gatorade label and the Febreze label that's in the declaration, no.

EX2011, 132:1-10

Did you consider whether changing the order of the light-blocking layer and the high opacity layer of the Gatorade label would have any impact on any other claim limitation required by claim 4?

A. No.

EX2011, 229:12-17

Petitioner Recognizes Layer Order Can Dramatically Alter Functionality of Labels



(21) Appl. No.: 19/061,153
(22) Filed: Feb. 24, 2025

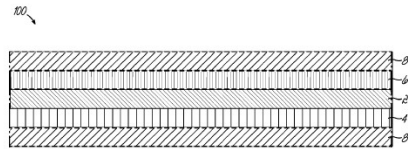
Related U.S. Application Data

(57) **ABSTRACT**
A light-blocking label configured to be affixed to an article made of a polymeric material such as polyethylene terephthalate (PET), high density polyethylene (HDPE), other

Publication Classification	
(51)	Int. Cl. G09F 3/02 (2006.01) B32B 2708 (2006.01) B32B 2736 (2006.01) B41M 1/30 (2006.01) B41M 3/00 (2006.01) G09F 3/00 (2006.01)

ABSTRACT

A light-blocking label configured to be affixed to an article made of a polymeric material such as polyethylene terephthalate (PET), high density polyethylene (HDPE), other similar polymeric materials, or some combination thereof. The light-blocking label includes a light-blocking ink layer that may be reverse printed onto the label substrate while other ink layers (e.g., white ink layer, color ink layer) may be surface printed on the label substrate. The light-blocking label may also include an optional varnish and/or adhesive layer. In some embodiments, the label substrate and article comprise PET and are configured to be collected as recycled PET (i.e., a recyclable light blocking label). In such an embodiment, the one or more ink layers and optional layers in the light-blocking may be configured to be removed prior to collection of the light-blocking label as recycled PET.



B + W EX2016
Multi-Color v. Brook + Whittle
PGR2025-00025

ues at 200 nm. Notably, samples printed in accordance with the present invention showed an improvement in a lower max transmittance (1.498% for sample 7; 1.552% for sample 8). This reduction in transmittance was more pronounced at 900 nm (approximately 0.24 for sample 7; approximately 0.87 for sample 8).

EX2016, [0162]

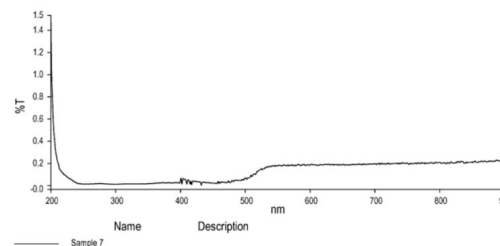


FIG. 15G

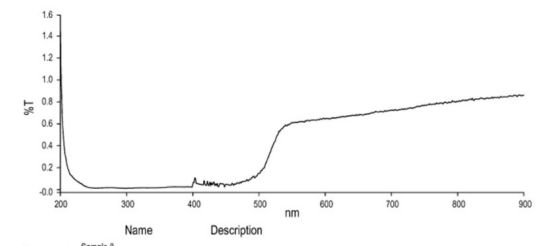


FIG. 15H

EX2016, Figs. 15G, 15H

Combination Ignores Overall Invention



KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007)

[A] patent composed of several elements is **not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.**



Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd., 821 F.3d 1359, 1367 (Fed. Cir. 2016)

The Board seemed to believe that the “reasonable expectation of success” inquiry looked to whether one would reasonably expect the **prior art references to operate as those references intended once combined. That is not the correct inquiry**—one must have a motivation to combine accompanied by a reasonable expectation of **achieving what is claimed in the patent-at-issue.**

Obviousness Requires More Than “Obvious to Try”



Armodafinil Pat. Litig. Inc., 939 F. Supp. 2d 456, 501 (D. Del. 2013)

“Obvious to try” is not equivalent to obviousness

Obviousness Over Gatorade Combinations

1

No Reasonable Expectation of Success

2

No Motivation to Combine

3

Secondary Considerations

No Analysis on Gatorade Label's Benefits



Dr. Michael Deible



Q. Okay. In that analysis did you determine whether the layer configuration of the Gatorade label as-is had any benefits?

A. Benefits?

Q. Yep.

A. What do you mean, benefits to what?

Q. Any commercial benefits, benefits to recyclability, did you do any analysis on whether there were any reasons why the Gatorade label was designed the way that it was?

A. No.

EX2011, 225:19-226:5

Gatorade Label Design Driven by Market Demands



Dr. Craig Bushman



14 Q. And you say for this particular
15 label, Each printed layer is applied in
16 sequence on the printing press as needed to
17 meet the graphical design intent for the brand,
18 right?

19 A. Yes.

20 Q. So the order of the layers is
21 dictated by the brand needs, fair?

22 A. Yes.

EX2010, 136:14-22

“Getting the hue right is critical, since many consumers know products like Gatorade by their color and not necessarily their name”

- Damian Brown,
VP of R&D for PepsiCo’s

EX2014, 6

54. The Gatorade Label was produced and sold publicly by my company in 2020, in substantial quantities.

EX 1013, ¶54

Rearranging Layers Would Not *Promote* Light-Blocking or Recyclability



Dr. Michael Deible



118. Third, a POSITA would have recognized such construction as **promoting light blocking and recyclability**. That is, it was known to use recyclable labels, such

119. Fourth, a POSITA would have recognized such construction as **allowing visibility of the label**. Indeed, the Examiner notes that such construction “ensure[s] the printing is visible and provide (sic) a metallic look to the label.” Ex. 1002 at 239.

EX1014, ¶118, 119

Q. I'm simply trying to understand your opinion in Paragraph 119.

A. **So if you flip the layers, the label's still visible.**

Q. Okay. **It is not more visible?**

A. **It doesn't say that.**

EX2011, 240:22-241:2

240:4-9. The testimony Patent Owner cites concerned a different question — whether reordering would **make the label as a whole “more visible.”** EX2011, 240:10-241:2. **The label as a whole is visible in either configuration;** as I explained then, the relevant question is “what you would see or not see when the labels were flipped relative to the indicia layer, relative to ... the metallic look or the white pigments.” EX2011, 240:15-21. **That is the point of the claim 4 ordering, it governs how the printed graphics appear, “ensur[ing] the printing is visible”**

EX1046 ¶140

Motivation Solely Based on Hindsight



Dr. Michael Deible



139. The most fundamental motivation is functional. A white, opaque layer positioned between the graphics and the metallic light blocking layer prevents the metallic layer from showing through and washing out the printed colors. The '422 Patent confirms this was the art-recognized function of exactly this arrangement—the high opacity coating is applied "to provide a white opaque background for the label's artwork or graphics," and the specification describes printing "the graphics ... directly onto the film, followed by the high opacity layer (e.g., a white ink) and then the light blocking layer." EX1001, 19:15-23. Example 5 reports that labels so constructed showed indicia colors "more vibrant." EX1001, 27:35-39. The benefit of the claim 4 ordering was not the '422 Patent's invention – it was the known reason a printer places white between graphics and a metallic layer, as the Examiner found. EX1002, 239; *see* EX1014, ¶¶ 117-122.

EX1046 ¶139

Hindsight Bias



KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 421 (2007)

A factfinder should be aware, of course, of the **distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning.**



Orexo AB v. Actavis Elizabeth LLC, 903 F.3d 1265, 1271 (Fed. Cir. 2018)

It is **inappropriate to use the template provided by the inventor**, to render the inventor's contribution obvious.

Insufficient that Labels Shared Common Manufacturer



*Securus Techs., Inc. v. Glob. Tel*Link Corp.*, 701 F. App'x 971, 977 (Fed. Cir. 2017)

We agree with the Board that a **broad characterization** of Susen and Gainsboro as both **falling within the same alleged field** of “telecommunications monitoring and control,” without more, **is not enough** for Securus to meet its burden of presenting a sufficient rationale to support an obviousness conclusion.



Microsoft Corp. v. Enfish, LLC, 662 F. App'x 981, 990 (Fed. Cir. 2016)

[The] Board correctly concluded that [the petitioner] did not articulate a sufficient motivation to combine. With respect to [certain challenged claims], [the petitioner] gave no reason for the motivation of a person of ordinary skill to combine [the two references] **except that the references were directed to the same art or same techniques....**

Obviousness Over Gatorade Combinations

1

No Reasonable Expectation of Success

2

No Motivation to Combine

3

Secondary Considerations

Nexus to Success of B+W's BlockOut

 **Fox Factory, Inc. v. SRAM, LLC, 944 F.3d 1366, 1374 (Fed. Cir. 2019).**

Nexus exists where the objective evidence is the “**direct result of the unique characteristics** of the claimed invention.”

1. A recyclable shrink label comprising:
a heat shrink film comprising polyethylene terephthalate (PET) and having a first surface and a second surface opposite of the first surface, the heat shrink film having a thickness from 15 μm to 100 μm ; and
a light blocking layer disposed adjacent the first surface and comprising a light blocking component, the light blocking layer being constructed for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200 nm to 900 nm, wherein the light blocking component comprises a particulate having a particle size of 0.1 μm to 100 μm , wherein the particulate comprises metal, metal oxide, a reflective pigment, carbon black, mica, or a combination thereof; and
wherein the recyclable shrink label is recyclable with a PET container.

EX1001, Cl.1



Meanwhile, **Brook + Whittle** took home the trophy in the **Recyclable Packaging** category for **GreenLabel BlockOut**, its **APR**-recognized **recyclable, light-blocking shrink sleeve**.

Since coloured PET is considered a low-value resin, GreenLabel BlockOut is designed to enable manufacturers to transition into clear PET without compromising on light-blocking performance. **This solution is able to block up to 99% of light from 200nm to 900nm.**

At the same time, it achieves a **100% sorting rate through NIR sortation equipment when applied to a clear PET bottle** (according to the company's MRF studies), thus keeping plastic out of landfill.

EX2019, 6

212. The industry praise garnered by Patent Owner's GreenLabel BlockOut product (which is a recyclable, light-blocking shrink sleeve label blocking 99% of light in the 200–900 nm range) further supports my opinions that the claimed invention of the '422 Patent was nonobvious.

EX2013, ¶1212

Long-Felt, Unmet Need

APR 12, 2024

Nesquik® Makes Bottles Easier to Recycle for Consumers

Five Years of R&D to Bring the Solution to Life

The solution took nearly five years to bring to life and Nestlé began the process in late 2019 with conversations across multiple different packaging suppliers, exploring different materials, light transmittance, and aesthetics.

When Nestlé first set out to transition its Nesquik bottles to a recyclable sleeve in 2019, there was no recyclable solution available in market yet that also leveraged the light-blocking features required for the product.



EX2017



DIVE BRIEF

Nestlé to use recyclable, light-blocking shrink sleeves on some beverage products

Shrink sleeves, when they use certain materials, inks and adhesives, can be a common barrier to proper bottle recycling. Problematic label constructions landed on the U.S. Plastics Pact's list of problematic and unnecessary materials.

Senior Editor

Courtesy of Nestle

EX2005

Copying By Others: *Brook + Whittle v. Fuji*

Case 2:24-cv-00735-JRG-RSP Document 1 Filed 09/08/24 Page 1 of 21 PageID #: 1

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

Brook + Whittle LTD,

Plaintiff,

v.

Nestlé USA, Inc., Fuji Seal International, Inc.

Defendants.

CASE NO. 2:24-cv-735

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Brook + Whittle LTD (“B+W”) files this Complaint against Nestlé USA, Inc. (“Nestlé”) and Fuji Seal International, Inc. (“Fuji Seal”) (collectively, “Defendants”) for patent infringement of United States Patent No. 11,961,422 (“the ‘422 Patent”) (Ex. A) and alleges as follows:

Case 2:24-cv-00735-JRG-RSP Document 244 Filed 07/14/26 Page 1 of 1 PageID #: 11056

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

BROOK + WHITTLE LTD,

Plaintiff,

v.

NESTLE USA, INC. and FUJI SEAL
INTERNATIONAL, INC.,

Defendants.

§
§
§
§
§
§
§
§

CASE NO. 2:24-CV-00735-JRG-RSP

ORDER

Before the Court is the Joint Stipulation of Dismissal Pursuant to Rule 41(a)(1)(A)(ii) (the “Stipulation”) filed by Plaintiff Brook + Whittle LTD (“Plaintiff”) and Defendants Nestlé USA, Inc. and Fuji Seal International (“Defendants”). (Dkt. No. 241.) In the Stipulation, the parties represent that **the above-captioned case has been resolved and request dismissal of the above-captioned action WITH prejudice.** (*Id.* at 1.)

EX2024; EX2025

Ground 4

Indefiniteness

'422 Claims Are Definite

1

Recyclability Can Be Tested

2

New “Subjectivity” Theory Is Improper And Incorrect

3

'422 Patent Provides Consistent Guidance

4

Dr. Phillips' Is Consistent With APR Guidance

5

Other Courts Agree '422 Claims Definite

'422 Claims Are Definite

1

Recyclability Can Be Tested

2

New “Subjectivity” Theory Is Improper And Incorrect

3

'422 Patent Provides Consistent Guidance

4

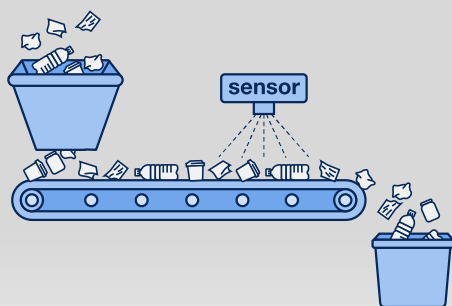
Dr. Phillips' Is Consistent With APR Guidance

5

Other Courts Agree '422 Claims Definite

Proper Sortation Can Be Tested

Sortation



Evaluation of the Near Infrared (NIR) Sorting Potential of a Whole Plastic Article

Method steps.

1. Snap the NIR Signature of the Candidate Article:
 - a. Using the method appropriate to the specific sorter, place one candidate article at a time under the sensor and take a snap shot of the article
 - b. If possible, adjust the sorter to incorporate that profile into the correct polymer classification.

EX1010

Evaluation of Sorting Potential for Plastic Articles Utilizing Metal, Metalized, or Metallic Printed Components

Method/Practice steps.

1. Obtain one empty candidate article complete with all closures, attachments and labeling. Metal and metalized tamper evident seals and rings should be in the state that they would be expected to enter the recycling stream (punctured, removed or broken, whichever is applicable).
2. Compare the candidate article to the list of metallic items manually removed from the recycling stream due to severe quality or equipment damage concerns. The list can be found at: <http://plasticrecycling.org/apr-design-guide/design-guide-resources>
3. Determine if the metal is ferrous. If not, go to step 10.
4. Suspend the plate magnet with the magnetic surface facing down.

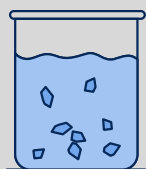
EX1011



Proper Granulating, Separation, Washing Can Be Tested



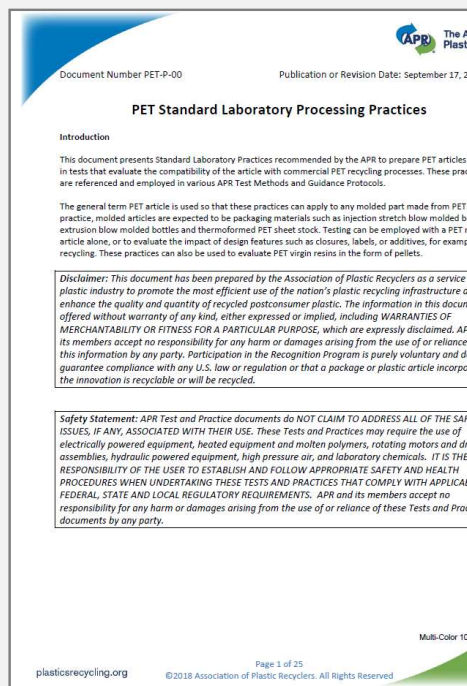
Granulation



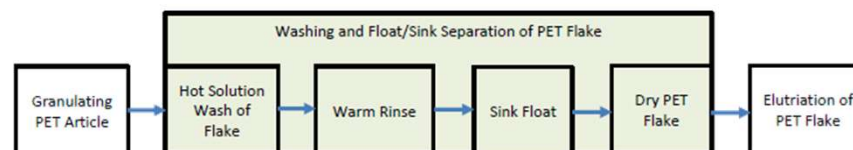
Sink Float Separation



Caustic Wash



Washing and Sink/Float Separation of PET Flake, PET-P-04



Practice Steps

Weigh the amount of PET flake required for the evaluation as specified in the test or Critical Guidance Protocol.

Hot Wash

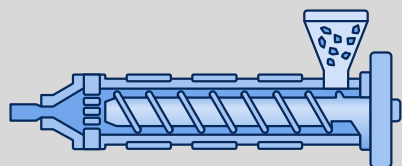
1. Prepare the wash solution

- Add tap water to the stainless wash vessel. The weight of water to be four times the weight of PET flake planned for use in wash, for example, 2000g (2000 ml) water, 500 g of granulated PET flake.
- Place the container on the hot plate or heat source.
- Position the impellor between 0.5 to 1 impellor diameter from the bottom of the mix container.
- While the water is heating, add NaOH granules or concentrate solution to the water with agitation to create a 1% by weight content of NaOH.
- Add surfactant to the tap water to create a 0.3% by weight content of surfactant. (If the alternative MacDermid RP24 detergent is used, employ the RP24 at 0.3 wt% in a 1 wt% solution of NaOH.)

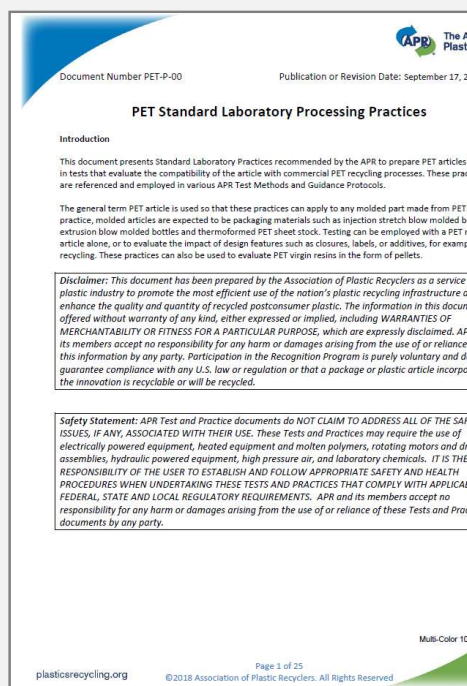
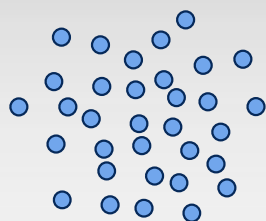
EX1028

Proper Extrusion and Resin Quality Can Be Tested

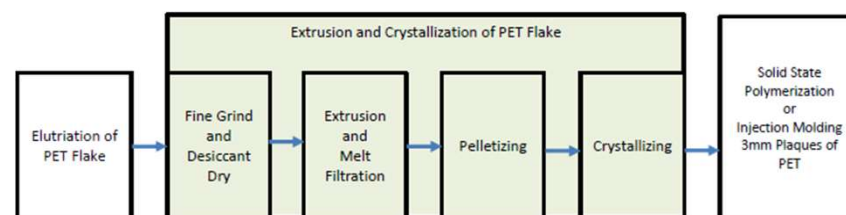
Melt Extrusion



Pelletization



Melt filtration, Pelletization and Crystallization, PET-P-06



Practice steps

1. Crystallization of flake – if flake is largely amorphous material, it will necessary to crystallize the flake prior to the drying step below. The crystallization steps used for pellets below may also be used when it is necessary to crystallize a flake sample.
2. Finer Grinding – The flake size used for washing and elutriation will generally will not feed well on a small laboratory extruder. Finer grinding of flake is acceptable and may be required to allow good feeding into the extruder feed throat and to achieve steady pressure readings ahead of the screen pack. Each sample will be dry ground separately using a standard mechanical grinder, using a screen between 4 and 6.5 mm. It is important that the machine be cleaned well and all the material be captured.

EX1028

Argument That APR Is Unreliable Belied By Petitioner's Marketing of APR Certification

PGR2025-00025
U.S. PATENT NO. 11,961,422

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MULTI-COLOR CORPORATION,
Petitioner,

v.

BROOK & WHITTLE LIMITED,
Patent Owner.

Case PGR2025-00025
U.S. Patent No. 11,961,422

PETITIONER'S REPLY TO
PATENT OWNER'S RESPONSE

Not Shown To Customers: APR Guidance Unreliable

These various assessments and testing cannot provide any objective standard because whether APR guidelines such as PET-CG-02 are met is a subjective determination made by a panel of three members. EX2010, 238:12-242:16; EX1047, ¶39. Unlike PO's experts, Dr. Bushman has personal knowledge

Reply, 18

Petitioner Publicly Markets Products as APR Certified

Shown To Customers: APR Certifies Recyclability



< NEWS

MCC Receives APR Recognition for recycLABEL™ Roll-Fed Label on PET Bottles

The APR recognized MCC's recycLABEL™ cPET Roll-Fed Label as meeting or exceeding the APR PET-CG-01 Critical Guidance Protocol for PET Rigid Containers. The submitted data was reviewed by a qualified laboratory and demonstrated that the label is compatible with the PET recycling stream, contributing to increased rPET yield and maintaining the integrity of the recycling process.

EX2035

Petitioner and Dr. Bushman Agree APR Provides Industry Standards for Recyclability



Dr. Craig Bushman



THE WITNESS: Yeah. There's a lot to unpack there. I think there is an advantage to participate in the APR because you understand what the requirements are for recycling. Whether or not it provides some benefit commercially or not, I think that's for others to answer.

EX2043, 38:12-18

Shown To Customers: APR Identifies Industry Standards



< NEWS

APR Recognition for HDPE containers

The APR is the national trade association representing companies who acquire, reprocess and sell the output of more than 90% of the postconsumer plastic processing capacity in North America. We have been an active member for over 10 years and we part of the Technical Committee for Olefins and PET. Being part of these committees helps us understand the current industry standards for recycling. This way, we can develop the label solutions that meet the existing infrastructure.

EX2046

Petitioner's Own Expert Was Unable To Identify Or Reconcile Inconsistency



Dr. Craig Bushman



11 Q. You're a smart man. You have a
12 Ph.D. I believe you're capable of recognizing
13 whether or not there's a conflict between those
14 two positions, are you not?

17 THE WITNESS: So I believe I gave
18 an answer.

19 Q. What was your answer?

20 A. I don't know.

EX2043:5:11-20

 | *Interactive Communications Int'l v. Blackhawk Network, Inc.,
IPR2024-00465; Paper 40, 3 (PTAB Oct. 9, 2025)*

“The Board abused its discretion by improperly crediting expert testimony that has multiple material contradictions and that the Board found lacked credibility at least in certain respects.”

Petitioner Relies On APR Testing For Certification



FORT DEARBORN COMPANY

May 1, 2019

Dave Cornell
The Association of Plastic Recyclers (APR)
1776 K Street, NW
Washington, DC 20006

Re: Summation Report for Critical Guidance Recognition

Company Information

Fort Dearborn is a leading supplier of high impact decorative labels, specializing in a variety of solutions to fit product packaging needs. We are committed to customer intimacy and customers with value, service and the highest quality attainable. We deliver solutions to meet customer's needs and exceed their expectations every single day. Our ability to manage the diverse needs of our customer base has been through aggressive capital and selective acquisitions. Fort Dearborn has the financial strength, established infrastructure and technical expertise to support our customers today and in the future.

Sustainable and recyclable solutions are an important part of our culture at Fort Dearborn. Developing sustainable and recyclable products in various labeling formats, one is a Recycle Sleeve. The recyclable shrink sleeve was sent to Plastics Forming Enterprises, LLC for Critical Guidance testing.

Summary of Testing

The objective of testing was to evaluate PET bottles with printed sleeve labels through process. The testing was done with 50% inked bottles with 6% coverage of the bottle wall equal (3% label weight of the bottle plus label) and that it meets the instruction of the Critical Guidance testing.

The PET control bottles were processed with no label applied. Test variable was process shrink sleeve labels to meet the APR critical guidance requirement. Control PET bottle was applied. The control bottle was produced using a non APR control resin. The APR Guid was completed to verify acceptability.

Control PET bottles with test labels applied:

- 870 – Control
- 870 – Test

		Control	Test		
Clumping	Sample weight tested, grams	2.165	2.165	<1% at 407F	Pass
	Weight % of PET clumps	0.0%	0.2%		
Color of flake	L*, transmission, 3 mm plaques	70.510	67.740	ΔL from control < 5 Δa^* from control < 2 Δb^* from control < 2, all < 3	Pass
	a*, transmission, 3 mm plaques	-0.250	-2.020		Pass
	b*, transmission, 3 mm plaques	-0.300	1.630		Pass
Extrusion/Pelletization 2nd Melt Heat History for Polymer First with Label and Decoration Making pellets	Drying Temperature (°F)	320	320	$\leq +0.025$, No Problem $+0.025$ to $+0.040$, Needs Study $> +0.040$ Problematic	Pass
	Initial IV (dL/g)	0.816	0.750		
	Extruded IV (dL/g)	0.768	0.763		
	IV Drop (dL/g)	0.048	0.027		
	ΔIV Drop from Control (dL/g)		-0.015		
3rd Melt Heat History for Polymer 2nd Melt History of Label, Making 3 mm Plaques	IV			$\leq +0.025$, No Problem $+0.025$ to $+0.040$, Needs Study $> +0.040$ Problematic	Pass
	Extrusion Back Pressure (bar)	533	507		
	% Increase in Back Pressure	11.9%	-4.9%		
	Run time	4.5 min	4.5 min		
	Extrusion Rate (gms/cm2/hrs.)	2.375	2.375		
Color	Pre-mold IV (dL/g)	0.768	0.763	$\leq +0.025$, No Problem $+0.025$ to $+0.040$, Needs Study $> +0.040$ Problematic	Pass
	Post-molding IV (dL/g)	0.722	0.715		
	IV Drop (dL/g)	0.046	0.048		
	ΔIV Drop from Control (dL/g)		0.007		
	L*, transmission, 3 mm plaques	90.26	84.88		
	a*, transmission, 3 mm plaques	-0.75	-2.25		
	b*, transmission, 3 mm plaques	6.65	7.67		
	Δa^* from Control		-1.50		
	Δb^* from Control		1.02		
Haze (%)		4.07	18.46	$< 5\%$, control $< 20\%$ Test Sample	Pass
Black Specs	Number/plaque (50 plaque min.)	1	1	Failures, Control vs Test 0 vs 2 max 1 vs 4 max 2 vs 6 max	Pass
Observations	Fluorescence	N/A	None	No more than Control No more than Control No more than Control No more than Control No more than Control No more than Control No more than Control	Pass, none observed Pass Pass Pass Pass Pass Pass
	Fuming during extrusion		None		
	Smoking during extrusion		None		
	Unusual odor during extrusion		None		
	Pellet sticking on drying		None		
	Equipment fouling		None		
	Unsafe condition		None		

<1% at 407F

Pass

ΔL from control < 5

Pass

Δa^* from control < 2

Pass

Δb^* from control < 2, all < 3

Pass

EX1038, 13

Petitioner Relies on APR Certification In This PGR

EL62



• Product Description

EL62 is clear recyclable shrink PET film with anti-static coating, medium TD shrinkage, low shrink force.

• Sustainability

EL62 met requirements per APR's Critical Guidance - Therefore, it is certified fully recyclable



Property	Unit	Value	Method
Thickness	Micron (µm)	40, 45, 50, 60, 70	SKC Method
Thickness tolerance	%	±10	SKC Method
TD Shrinkage (100°C)	%	73	Water bath, 10 sec
TD Shrinkage (80°C)	%	62	Water bath, 10 sec
MD Shrinkage (100°C)	%	1.8	Water bath, 10 sec
MD Shrinkage (80°C)	%	-1.8	Water bath, 10 sec

Sustainability

EL62 met requirements per APR's Critical Guidance - Therefore, it is certified fully recyclable

Gloss	78	130	0023
COF (coated vs. metal)	Kinetic	0.25	D1894

• FDA Compliance

EL62 is compliant with the FDA 21 CFR 177.1630 regulation, and are acceptable for food contact applications as follows:
 - indirect food contact on the chemically treated surface
 - direct food contact on the untreated/plain surface

This information is the best currently available on the subject. This results should, however, only be regarded as a general guide to material properties and not as a guarantee. Some of the properties can be changed as a result of supplier's effort to improve the quality or production efficiency on the subject. Revision: 11.12.2019

SKC Inc. • 1000 SKC Dr. • Covington GA 30014 • USA • Phone: 866-SKC-FILM(866-752-3456) • info@skc.com • www.skcfilms.com
 Multi-Color 1016

EX1016

Dr. Bushman: Gatorade Film is APR Certified

56. The Gatorade Label is an SKC Ecolabel™ sleeve label. Ex. 1016. And, the APR, the Association of Plastic Recyclers, has recognized this label as meeting or exceeding APR's Critical Guidance Protocol for Clear PET Articles with Labels and Closures Document requirements. Ex. 1018. The SKC Ecolabel™ has received APR Critical Guidance recognition. *Id.* In particular, a Review Committee, appointed per

EX1013, ¶156

Petitioner: SKC APR Certification Shows Gatorade Recyclability

In connection with this analysis, Petitioner notes that the Gatorade Label is an SKC Ecolabel™ sleeve label. Ex. 1013, at ¶47; Ex. 1016. And, the APR, the

Paper 2, 31



Sonix Tech. Co., Ltd. v. Publ'ns Int'l, Ltd., 844 F.3d 1370, 1378-79 (Fed. Cir. 2017)

"Again, [parties] did not express any uncertainty... or encounter **any apparent difficulty** in applying the term to the references."

'422 Claims Are Definite

1

Recyclability Can Be Tested

2

New “Subjectivity” Theory Is Improper And Incorrect

3

'422 Patent Provides Consistent Guidance

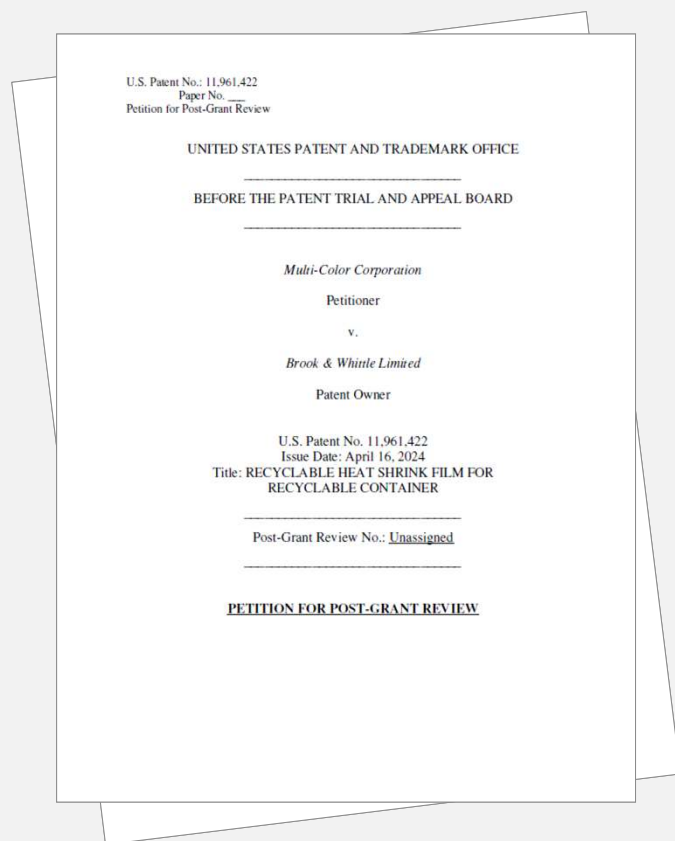
4

Dr. Phillips' Is Consistent With APR Guidance

5

Other Courts Agree '422 Claims Definite

APR Subjectivity Is A New Reply Theory

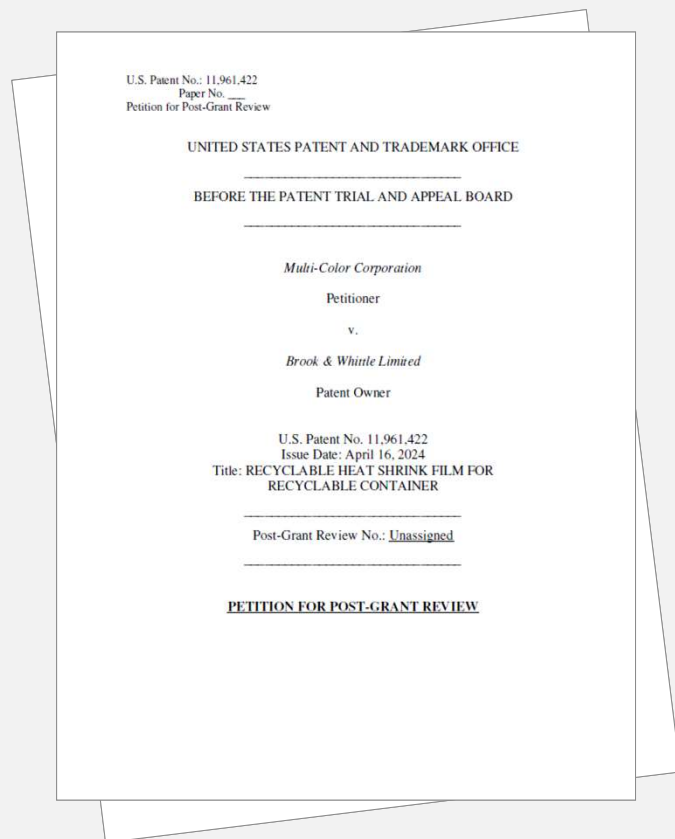


Petitioner's Reply Theory

And, both Parties' experts agree these guidelines are subjective, lacking objective criteria. Under *Nautilus*, such a claim does not inform a POSITA of its scope with reasonable certainty, and is therefore invalid as indefinite.

Pet., 1

APR Subjectivity Is A New Reply Theory

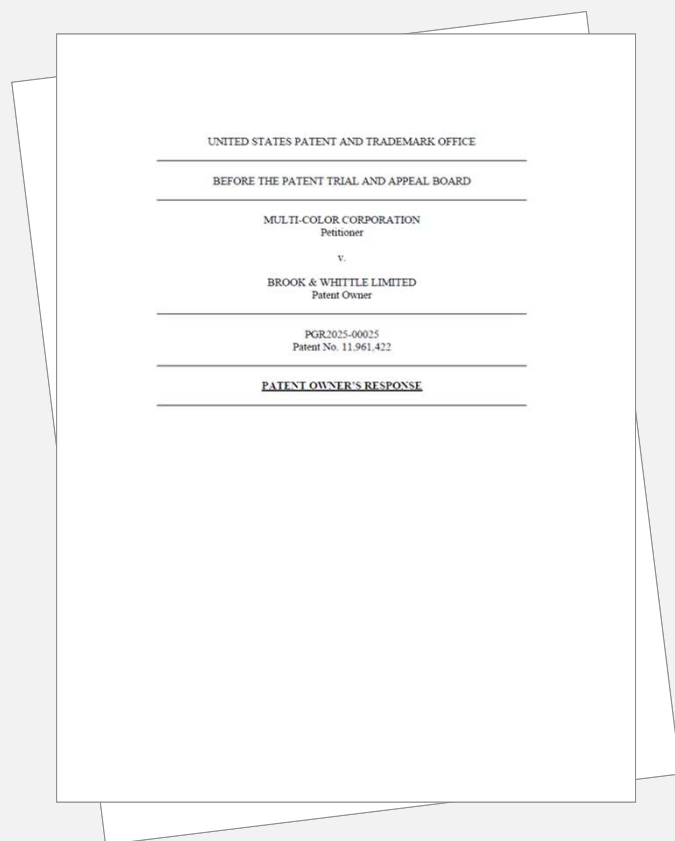


Petitioner's Original Theory

Independent claim 1 and independent claim 19 (and therefore all dependent claims) each recite “wherein the recyclable shrink label is recyclable.” Ex. 1001, at Claims 1 and 19. The claim language has multiple possible meanings, making it impossible for a POSITA to determine a definitive meaning and thus scope of the claim. Therefore, these claims are indefinite. In particular, the ‘422 patent defines what makes a shrink label recyclable, but does so in several disparate ways.

Pet., 53-54

PO's Response Clearly Rebutted Petitioner's Original Theory



Patent Owner's Response

Petitioner admits “the ’422 patent defines what makes a shrink label recyclable,” identifying several statements in the specification of the ’422 Patent, but characterizes the statements as “disparate.” Pet., 53-54. Yet, neither Petitioner nor its expert provide any analysis of how these statements create inconsistencies that would lead a POSITA to conclude the ’422 Patent claims are insufficiently defined. When read in light of the claims, specification, and prosecution history, the statements cited by Petitioner as allegedly “disparate” are entirely consistent with one another and a POSITA would reasonably be able to ascertain the scope of the claims. EX2013, ¶¶258-305.

POR, 75-76

Petitioner's Reply Headings Identify Its New Subjectivity Theory

Petitioner's Initial Petition Theory

E. GROUND 4: CLAIMS 1-19 ARE INDEFINITE UNDER 35 U.S.C. § 112

Independent claim 1 and independent claim 19 (and therefore all dependent claims) each recite “wherein the recyclable shrink label is recyclable.” Ex. 1001, at Claims 1 and 19. The claim language has multiple possible meanings, making it impossible for a POSITA to determine a definitive meaning and thus scope of



Intelligent Bio-Sys., 821 F.3d at 1369

“Petitioner “chose which grounds...to assert in its petition and it chose not to assert th[ese].”

Petitioner's New Theory In Reply

Initial

A. The law governing indefiniteness

Reply, 15

B. The '422 patent describes what renders a label “recyclable” in several disparate ways

Reply, 16

New

C. PO concedes the '422 patent guidelines have no objective criteria

Reply, 17

D. The '422 patent identifies that PET-CG-02 “certif[ies]” whether a label is “recyclable,” but that guideline incorporates other subjective criteria

Reply, 19

E. The '422 patent identifies other guidelines to determine whether a label “recyclable” and PO’s expert admits they are subjective

Reply, 21

Petitioner Itself Injected “Subjectivity” Before POR



Dr. Craig Bushman



2 REDIRECT EXAMINATION
3 BY MR. SCHATZ:
4 Q. Mr. Bushman, I have some questions I
5 want to ask you based upon some of your
12 Q. Okay. And do the APR documents that
13 are referred to in the '422 patent, do they
14 provide clarity as to the meaning of the claim
15 term, quote, wherein the recyclable shrink
16 label is recyclable with a PET container,
17 closed quote?
19 A. No.
20 BY MR. SCHATZ:
21 Q. Why not?
22 A. Because the APR documents are among
23 a variety of determination of whether or not
24 something is recyclable. And the APR guidance
25 specifically, is broad and subjective in terms
Page 239
1 of the meaning of the Critical Guidance
2 recognition.

EX2010, 238:2-239:2

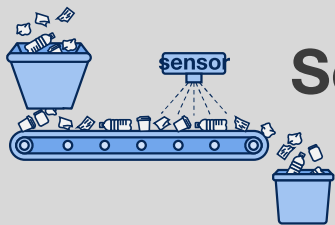
January 2025: Petition filed

November 2025: Dr.
Bushman Deposition

February 2026: POR

First Time “Subjective”
used in these proceedings

APR Guidance Provide Objective Metrics for NIR Sortation



Sortation

Petitioner's Reply

These various assessments and testing cannot provide any objective standard because whether APR guidelines such as PET-CG-02 are met is a subjective determination made by a panel of three members. EX2010, 238:12-242:16; EX1047, ¶39. Unlike PO's experts, Dr. Bushman has personal knowledge

Reply, 18

Evaluation of the Near Infrared (NIR) Sorting Potential of a Whole Plastic Article

Variance is $\leq 5\%$: The candidate article is most likely to be sorted correctly by NIR and the APR Design Guidance category for the design feature of "optical sorting potential" is preferred

Variance is $>5\%$ and Capture rate is $\geq 51\%$: A high percentage of the test articles will be missorted by NIR, but will most likely get sorted into the appropriate bale. The APR Design Guidance category for the design feature "optical sorting potential" is detrimental

Capture rate % is $< 51\%$: The candidate article will most likely be missorted by NIR and therefore the APR Design Guidance category for the design feature "optical sorting potential" renders the package unrecyclable per the APR definition of recyclability.

EX1010

Based on the APR Design Guidance for plastic packaging recyclability.

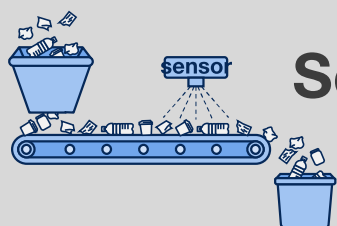
Typically, today's newer single stream MRFs and PET facilities employ automated equipment that sort plastic packaging and other items by their NIR (near infrared) signature, either in transmission or reflection. For this equipment to operate effectively it must accurately identify the plastic article and direct it to the correct location. Otherwise, the article is either directed to the waste stream or becomes a contaminant in another recyclable stream where it is likely to not be recycled.

This specific NIR sorting potential test method provides a means of evaluating whether a plastic article can be accurately identified and sorted on pilot scale NIR sorting equipment that performs similarly to that used in production facilities. Good results in this screening test indicate that a plastic article has the potential to be sorted well in production conditions. Poor results indicate that an improvement to plastic product design is desirable to promote recovery. An optional, second part of this test method incorporates a means of determining whether the pilot equipment & software has the ability to be adjusted to correctly identify and sort the article and if so, to capture this adjustment in production facilities.

The test involves establishing the baseline performance of a pilot NIR sorting machine by processing a known blend of material while targeting the polymer of the test article. Then, 20 samples of the test article are added.

Page 1 of 25
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Multi-Color 1010
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APR Guidance Provide Objective Metrics for Metallic Sortation



Sortation

Petitioner's Reply

These various assessments and testing cannot provide any objective standard because whether APR guidelines such as PET-CG-02 are met is a subjective determination made by a panel of three members. EX2010, 238:12-242:16; EX1047, ¶39. Unlike PO's experts, Dr. Bushman has personal knowledge

Reply, 18

Evaluation of Sorting Potential for Plastic Articles Utilizing Metal, Metalized, or Metallic Printed Components

PET:

- 0 – 2mm - This item is rarely removed by the metal detectors employed in the sorting systems and the APR recyclability category in relation to this design feature is "preferred".
- > 2 to 16mm - This item is rarely removed by the metal detector employed in the sorting systems but negatively affects quality, yield and operating costs of the recycler. The APR recyclability category in relation to this design feature is "detrimental to recycling".
- 16mm or more - This item is most likely removed by the metal detectors employed in the sorting systems and the APR recyclability category in relation to this design feature is "renders the package not recyclable per the APR definition of recyclability".

EX1011

The sorting system recycler is required to determine specific design features that may cause a plastic article to be lost to the recycling process. The consequences of a plastic article being lost prior to use within are more significant than in processes that follow size reduction, since the entire package is lost to the plastic recycling stream rather than a mere component of the package. The modeling of sorting behavior in this test enables design engineers to focus their improvement efforts and is designed to complement the wide range of tests offered by APR that form the foundation of APR's design guidance for plastic package recyclability.

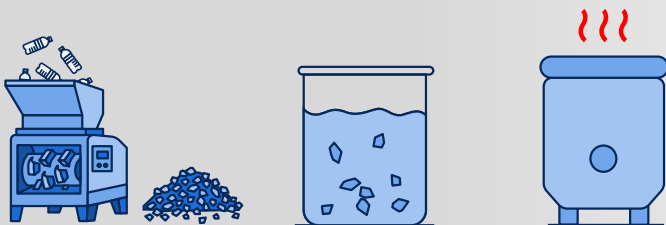
Typically, today's newer single stream MRFs and PET reclaimers employ automated equipment that sort plastic packaging and other items by their NIR (near infrared) signature, either in transmission or reflection. For this equipment to operate effectively it must accurately identify the plastic article and direct it to the correct location. Otherwise, the article is either directed to the waste stream or becomes a contaminant in another recyclable stream where it is likely to not be recycled.

This specific NIR sorting potential test method provides a means of evaluating whether a plastic article can be accurately identified and sorted on pilot scale NIR sorting equipment that performs similarly to that used in production facilities. Good results in this screening test indicate that a plastic article has the potential to be sorted well in production conditions. Poor results indicate that an improvement in plastic product design is desirable to provide recovery. An optional, second part of this test method incorporates a means of determining whether the pilot equipment & software has the ability to be adjusted to correctly identify and sort the article and if so, to capture this adjustment in production facilities.

The test involves establishing the baseline performance of a pilot NIR sorting machine by processing a known blend of material while targeting the polymer of the test article. Then, 20 samples of the test article are added

Page 1 of 15
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Multi-Color 1010

APR Guidance Provides Objective Metrics For Washing



Caustic Wash

Petitioner's Reply

These various assessments and testing cannot provide any objective standard because whether APR guidelines such as PET-CG-02 are met is a subjective determination made by a panel of three members. EX2010, 238:12-242:16; EX1047, ¶39. Unlike PO's experts, Dr. Bushman has personal knowledge

Reply, 18

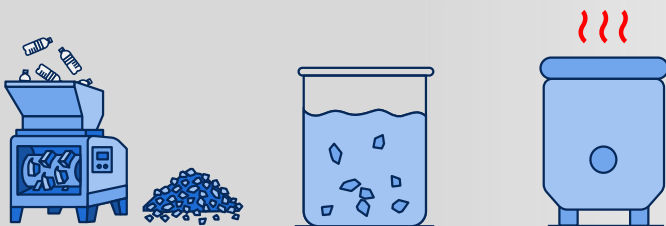
Critical Guidance Protocol for Clear PET Articles with Labels and Closures

Measurements, report, and guidance values

Wash and elutriation evaluations

Property	Test method	APR Guidance Preferred values	Additional Guidance
<u>Required values</u>			
Clumping test with flake sample B	PET Flake Clumping Evaluation, PET-S-08	<1 wt% retention on screen	
Wash water evaluation report	Labels for PET - Wash Water Evaluation, PET-S-01	Observe and report only, no guidance values	Required only for label and direct printing evaluations
<u>Optional values</u>			
Flake bake test	PET Flake Oven Bake Evaluation, PET-S-10		
Flake color	Measurement of PET Flake or Pellet Discoloration, PET-S-02		
Materials balance	PET Package Materials Balance, PET-S-04		

APR Guidance Provides Metrics To Evaluate Washing



Caustic Wash

Petitioner's Reply

These various assessments and testing cannot provide any objective standard because whether APR guidelines such as PET-CG-02 are met is a subjective determination made by a panel of three members. EX2010, 238:12-242:16; EX1047, ¶39. Unlike PO's experts, Dr. Bushman has personal knowledge

Reply, 18

Labels for PET - Wash Water Evaluation

Measurement or observation	Report values	Result
Visual Evaluation		
Describe label format or style	1. Film label 2. Direct print on PET	
Wash impact on printed area appearance and legibility comparison with unwashed label	3. No impact 4. All ink/adhesive removed 5. Some ink/adhesive adhering	
Presence of ink in wash water	1. No ink in wash water, incidental ink is acceptable 2. Bleeding ink, discoloring wash water as a solution or fine dispersion 3. Thermoset ink in wash water as discrete particles	
Presence of free adhesive in wash water	1. No adhesive in wash water 2. Adhesive visible in wash water.	

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EX1030

Dr. Bushman Agrees APR Guidance Provides Observable Metrics



Dr. Craig Bushman



5 Q. I would prefer to look at the
6 Annex 1 report form. Doesn't that indicate or
7 provide pre-defined categories for evaluating
8 the presence of ink and wash water?
9 A. It provides a variety of -- of
10 measurements and observations.
11 Q. The middle column says report
12 values, correct?
13 A. Okay.
14 Q. Is that true, the middle column
15 says report value?
16 A. Yes. It says report value.

EX2043, 108:5-16

Labels for PET - Wash Water Evaluation

Measurement or observation	Report values
Visual Evaluation	
Describe label format or style	1. Film label 2. Direct print on PET
Wash impact on printed area appearance and legibility comparison with unwashed label	3. No impact 4. All ink/adhesive removed 5. Some ink/adhesive adhering
Presence of ink in wash water	1. No ink in wash water, incidental ink is acceptable 2. Bleeding ink, discoloring wash water as a solution or fine dispersion 3. Thermoset ink in wash water as discrete particles
Presence of free adhesive in wash water	1. No adhesive in wash water 2. Adhesive visible in wash water.

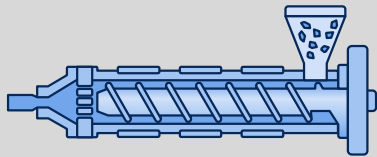
EX1030



Sonix Tech. Co., Ltd. v. Publ'ns Int'l, Ltd., 844 F.3d 1370, 1378-79 (Fed. Cir. 2017)

“The question whether something is “visually negligible” or whether it interferes with a user's perception, however, involves what can be seen by the normal human eye. This provides an objective baseline through which to interpret the claims.”

APR Guidance Provide Objective Metrics To Evaluate Extrusion



Melt Extrusion

Petitioner's Reply

These various assessments and testing cannot provide any objective standard because whether APR guidelines such as PET-CG-02 are met is a subjective determination made by a panel of three members. EX2010, 238:12-242:16; EX1047, ¶39. Unlike PO's experts, Dr. Bushman has personal knowledge

Reply, 18

Critical Guidance Protocol for Clear PET Articles with Labels and Closures

Extrusion evaluation

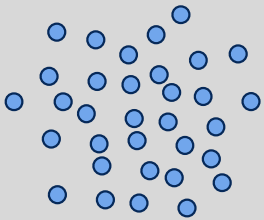
Property	Test method	APR Guidance Preferred values
<u>Required values</u>		
IV loss	ASTM D 4603 solution IV with phenol/tetrachlorethane at 30°, or ASTM D1238 – 13 method B	Difference in A' and B' is 0.025 units or less
Screen pack pressure build	Steps given in the Melt Filtration Practice, PET-P06	End pressure is no greater than 25% over starting pressure value
Observation for fuming or odor at feed throat and die exit	Visual evaluation, no method	No unusual fuming or odors observed
Observation for material sticking in drier or feed throat	Visual evaluation, no method	No material sticks in drier or feed throat
Observation for impact on hazards or safety	Visual evaluation, method	No safety or hazard conditions observed
<u>Optional values</u>		
Pellet color	Measurement of PET Flake or Pellet Discoloration, PET-S-02	

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Page 9 of 9
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EX1027

APR Guidance Provide Objective Metrics To Evaluate Resin Quality



Pelletization

Petitioner's Reply

These various assessments and testing cannot provide any objective standard because whether APR guidelines such as PET-CG-02 are met is a subjective determination made by a panel of three members. EX2010, 238:12-242:16; EX1047, ¶39. Unlike PO's experts, Dr. Bushman has personal knowledge

Reply, 18

Critical Guidance Protocol for Clear PET Articles with Labels and Closures

Evaluation of molded plaques

Property	Test method	APR Guidance Preferred values
		Required values
L value of plaques B	Evaluation of PET Plaques for Color, Haze and Inclusions, PET-S-09	>82
a* value of plaques A and B	PET-S-09	Less than 1.5 units difference between plaques A and B
b* value of plaques A and B	PET-S-09	Less than 1.5 units difference between A and B
% haze of plaques A and B	PET-S-09	Control not to exceed 9% value, and test not to exceed more than 10% units greater than control.
Inclusions and specks in plaques T5	PET-S-09	If A = 0; B is 2 or less If A = 1; B is 4 or less If A = 2; B is 6 or less
IV loss when pellets re molded to plaques	ASTM D 4603 solution IV with phenol/tetrachlorethane at 30°, or ASTM D1238 – 13 method B	The value of IV loss for sample B is no greater than 0.025 units when compared to sample A

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Page 1 of 8
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EX1027

APR Provides Benchmarks with Objective Metrics



Dr. Scott Phillips



A Of course. Well, I guess what I would say is the APR methods are one benchmark, one important benchmark, that people typically look to to determine whether a material is recyclable, in this case a PET label.

EX1048, 42:16-20

A So the '422 patent points, as examples of tests that can be performed, are the APR methods. So an example is the APR CG2 protocol. There are other examples as well a person of ordinary skill in the art would refer to.

In these example protocols, there's very clear objective measures of whether an article could go through the recycling process and be reclaimed.

EX1048, 14:18-15:3

APR Provides Minimum Threshold For Recyclability



Dr. Scott Phillips



Q And those reclaimers have different test procedures when evaluating label materials; correct?

MR. DIRKS: Objection. Outside the scope.

THE WITNESS: I can't answer correct or not in that case. My understanding is that everybody tends to refer to the APR methods as the benchmark.

EX1048, 32:15-20

Q Fair enough. I'm glad you said that. So there is some, you know, low level of purity of PET that has to be met for it to be recyclable in terms of the '422 patent?

A Correct.

Q Okay. And what level of quality is that?

A And so then that's typically around -- my understanding is that it's typically close to what is defined by the test results from an organization like APR.

EX1048, 45:8-17

'422 Claims Are Definite

1

Recyclability Can Be Tested

2

New “Subjectivity” Theory Is Improper And Incorrect

3

'422 Patent Provides Consistent Guidance

4

Dr. Phillips' Is Consistent With APR Guidance

5

Other Courts Agree '422 Claims Definite

Petitioner Conflates Label and Film

'422 Patent

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

Ex. 1001, 1:36-38

Petitioner's Reply

Dr. Phillips disagrees that “no inks” being retained is sufficient to determine whether a **label** is “recyclable.” EX1048, 92:17-93:9; 80:17-82:13. That is “[b]ecause there’s a number of other tests that should be performed.” EX1048, 121:22-122:17; 93:10-94:3. For this reason alone, it is unclear to a POSITA whether no inks being retained after a caustic wash is a sufficient requirement. EX1047, ¶21.

Reply, 16

'422 Patent, Claim 1

1. A recyclable shrink label comprising:
a heat shrink film...
a light blocking layer...

EX1001, 6:62-65



Dr. Craig
Bushman



Q. The question I asked is whether or not Claim 1 is directed to a label including a film and a light blocking layer.

THE WITNESS: I accept your statement that **it's related to a film and a light blocking layer, yes.**

EX2043, 59:21-60:4

✓ **Label Comprises Film And Light Blocking Layer**

Petitioner Conflates Label and Film

'422 Patent

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

Ex. 1001, 1:36-38

Petitioner's Reply

Dr. Phillips disagrees that “no inks” being retained is sufficient to determine whether a **label** is “recyclable.” EX1048, 92:17-93:9; 80:17-82:13. That is “[b]ecause there’s a number of other tests that should be performed.” EX1048, 121:22-122:17; 93:10-94:3. For this reason alone, it is unclear to a POSITA whether no inks being retained after a caustic wash is a sufficient requirement. EX1047, ¶21.

Reply, 16

'422 Specification

Generally 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 typically used in PET reclaiming processes.

EX1001, 6:62-65

✓ *Label Comprises Film And Light Blocking Layer*

Other Elements of Label Can Render It Not Recyclable

'422 Patent

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

Petitioner's Reply

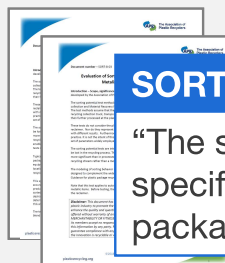
Dr. Phillips disagrees that “no inks” being retained is sufficient to determine whether a label is “recyclable.” EX1048, 92:17-93:9; 80:17-82:13. That is “[b]ecause there’s a number of other tests that should be performed.” EX1048, 121:22-122:17; 93:10-94:3. For this reason alone, it is unclear to a POSITA whether no inks being retained after a caustic wash is a sufficient requirement. EX1047, ¶21.

Reply, 16

APR Critical Guidance

Sortation qualification - If there is any concern that the test article will not sort properly in either a materials recovery facility or plastic reclaimer, the applicable APR sortation potential test(s) must be conducted prior to proceeding with the critical guidance test. Criteria for determining this can be found in the APR Design Guide® For Plastics Recyclability. Specific factors to consider are small size, more two dimensional than three dimensional, containing metal or metalized inks and material components that could influence NIR sortation. Molded articles that do not provide a “preferred” level of sortation performance are not candidates for Critical Guidance review.

EX1027, 3



SORT-B-01 and SORT-B-03

“The sorting potential tests are intended to identify specific design features that may cause an entire package to be lost in the recycling process.”

EX1010, 1

Dr. Bushman Agrees Label And Film Are Not Interchangeable



Dr. Craig Bushman



Q. And it's your understanding that a POSITA would read that passage as meaning that if no inks are retained on the label, the label is recyclable? Is that how you think a POSITA would read that passage?

A. I don't think I would interchange the term "label" and "film."

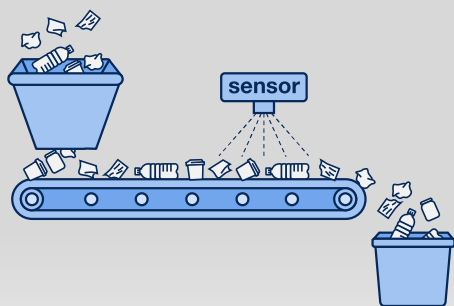
Q. Okay. Do you think you did so in your declaration?

A. I don't know.

EX2043, 63:2-8

Sortation Tests Determine Whether Label Feature Causes Entire Article To Be Discarded

Sortation



Sortation qualification - **If there is any concern that the test article will not sort properly** in either a materials recovery facility or plastic reclaimer, the **applicable APR sortation potential test(s) must be conducted prior to proceeding with the critical guidance test.**

Criteria for determining this can be found in the APR Design Guide® For Plastics Recyclability. Specific factors to consider are small size, more two dimensional than three dimensional, containing metal or metalized inks and material components that could influence NIR sortation.

EX1027, 3

The **sorting potential tests are intended to identify specific design features that may cause an entire package to be lost** in the recycling process. The **consequences of a plastic article being mis-sorted** prior to size reduction **are more significant** than in processes that follow size reduction, **since the entire package is lost** to the plastics recycling stream rather than a mere component of the package.

EX1011, 1

Petitioner Improperly Limits Claims To Certain Embodiments

Petitioner's Reply

In addition and **in direct contradiction, the '422 patent provides that labels meeting** "certain industry standards, including...**APR...PET-CG-02...can be considered as certifying that the film is fully recyclable** with the container or bottle." EX1001, at 11:29-53 (emphasis added); EX1047, ¶31. A POSITA understands when a label meets the PET-CG-02 guideline, that "certif[ies]" the label is fully recyclable, and requires meeting PET-CG-02. Id. This is **inconsistent with the '422 patent requirement of "no inks" retained on the film.** EX1047, ¶32.

Reply, 20

'422 Specification

Generally 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 typically used in PET reclaiming processes.

According to an embodiment, the **labels** of the present disclosure **can meet** certain industry standards, including for example the Association for Plastic Recyclers (APR) **Critical Guidance Protocol for Clear PET Articles with Labels and Closures (PET-CG- 02)**, which can be considered as certifying that the film is fully recyclable with the container or bottle.

EX1001, 6:62-65, 11:32-38

'422 Specification Consistently Explains That Inks Should Wash Off Films



(12) **United States Patent**
Sharp et al. (16) **Patent No.:** US 11,961,422 B2
(45) **Date of Patent:** Apr. 16, 2024

(54) **RECYCLABLE HEAT SHRINK FILM FOR RECYCLABLE CONTAINER**
(71) Applicant: **BROOK & WHITTLE LIMITED**, Amherst, NY (US)
(72) Inventors: **Andrew Sharp**, Orchard Park, NY (US); **Mitchell J. Morgan**, Buffalo, NY (US)
(73) Assignee: **BROOK & WHITTLE LIMITED**, Amherst, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **18103,234**
(22) Filed: **Jan. 30, 2023**

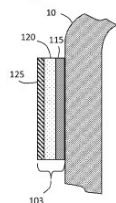
(65) **Prior Publication Data**
US 2023/0177880 A1 Jan. 8, 2023

Related U.S. Application Data
(63) Continuation of application No. PCT/US2022/029280, filed on May 13, 2022. (Continued)

(51) **Int. Cl.**
G09F 1/00 (2006.01)
B65D 23/00 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC — **G09F 1/0241** (2013.01); **B65D 23/0078** (2013.01); **B65D 7/167** (2013.01); (Continued)

(58) **Field of Classification Search**
None
See application file for complete search history.



Multi-Color 1001

Generally 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 typically used in PET reclaiming processes.

According to an embodiment, the **inks utilized in the labels** of the present disclosure, including the light blocking inks, **are designed to wash off the film** during a reclaiming process allowing the labels and containers they cover to be recycled.

According to an embodiment, the **labels are free or substantially free of inks that cannot be washed off** in a caustic wash.

EX1001, 6:62-65, 7:9-13, 11:49-51

Inks Retained On Film Can Contaminate PET Flake

Petitioner's Reply

Contamination or Discoloration of PET flake. Applicant cited the APR Resource Document that “[a]n important consideration for inks on shrink sleeve labels is that the ink not contaminate or discolor PET flake when mixed in hot caustic wash water used in the recycling process.” Evaluation of contamination or discoloration of PET flake is inconsistent with an evaluation of the amount of ink that washes off PET flake. EX1047, ¶¶51-53.

Reply, 23

APR Guidance

Introduction – Scope, Significance and Use

Products made with PET are often valued because they have high clarity along with low color and haze. When recycling clear PET, it is important that the PET resin, additives, and any other features employed such as labels or closures have the least possible impact on the color and transparency of the resin. Industry experience is that inks, adhesives, additives, layers and coatings, for example, can be sources of color formation and specks in recycled PET.

This document presents a standard method to evaluate any contribution to color, haze or inclusions that might result from recycling PET articles. The test measures the color and haze values of transparent injection molded plaques. This evaluation is an important part of many APR tests and is used to measure any impact of a design feature such as labels, inks, adhesives or additives on PET recycling.

EX2026, 1

POSITA Understands What Fully Recyclable Means

Petitioner's Reply

Fully Recyclable vs Recyclable. The '422 patent recites that labels are “recyclable” according to SORT-B-01, SORT-B-03, or both, and that “the labels of the present disclosure are ‘fully recyclable.’” EX1001, 11:29-53. The '422 patent does not provide any criteria distinguishing between fully recyclable and recyclable. EX1047, ¶¶41-42.

Reply, 21

'422 Specification

According to an embodiment, the labels of the present disclosure **can meet** certain industry standards, including for example the Association for Plastic Recyclers (APR) **Critical Guidance Protocol** for Clear PET Articles with Labels and Closures (PET-CG-02), **which can be considered as certifying that the film is fully recyclable** with the container or bottle.

EX1001, 11:32-38

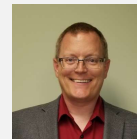
POSITA Understands What Fully Recyclable Means

Petitioner's Reply

Fully Recyclable vs Recyclable. The '422 patent recites that labels are “recyclable” according to SORT-B-01, SORT-B-03, or both, and that “the labels of the present disclosure are ‘fully recyclable.’” EX1001, 11:29-53. The '422 patent does not provide any criteria distinguishing between fully recyclable and recyclable. EX1047, ¶¶41-42.

Reply, 21

Dr. Bushman Understands “Fully Recyclable”



Dr. Craig Bushman
MCC
Member Center Solutions

Q. And so what does it mean that it's certified fully recyclable?

A. They are using the APR guidance as a statement of recyclability.

EX2010, 113:14-17

Material	Description	Weight	Volume	Recycled Content	Recyclability
Aluminum	Aluminum	2.70	0.00037	100%	100%
Steel	Steel	7.85	0.00013	100%	100%
Paper	Paper	0.70	0.00143	100%	100%
Plastic	Plastic	1.38	0.00072	100%	100%
Glass	Glass	2.50	0.00040	100%	100%
Cardboard	Cardboard	0.60	0.00200	100%	100%
Textile	Textile	1.48	0.00068	100%	100%
Leather	Leather	1.18	0.00085	100%	100%
Wood	Wood	0.35	0.00286	100%	100%
Composites	Composites	1.50	0.00067	100%	100%
Metals	Metals	7.85	0.00013	100%	100%
Plastics	Plastics	1.38	0.00072	100%	100%
Paper	Paper	0.70	0.00143	100%	100%
Glass	Glass	2.50	0.00040	100%	100%
Cardboard	Cardboard	0.60	0.00200	100%	100%
Textile	Textile	1.48	0.00068	100%	100%
Leather	Leather	1.18	0.00085	100%	100%
Wood	Wood	0.35	0.00286	100%	100%
Composites	Composites	1.50	0.00067	100%	100%

• Sustainability

EL62 met requirements per APR's Critical Guidance - Therefore, it is certified fully recyclable

EX1016

APR Guidelines are Precise Far In Excess of Patentability Requirements

 *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370-71 (Fed. Cir. 2014)

“[A]bsolute or mathematical precision is not required”

Petitioner’s Reply

“Those [benchmarks] are dictated by the manufacturers.” *Id.* And, according to Dr. Phillips, whether a label is recyclable depends upon the particular manufacturer and the level of PET quality each product requires. *Id.* Otherwise stated, standards are “dictated by downstream manufacturers of what material they would be willing to use.” EX1048, 22:15-23:22. Those downstream manufacturers have different criteria for what they are willing to use and not use. EX1048, 24:17-25:15. This is subjective and different for each manufacturer. EX1047, ¶¶59-60.

Reply, 24

Dr. Phillips Testimony

Again, everyone -- not everyone, but a person of ordinary skill in the art would be looking towards the industry recognized standards that are APR.

EX1048, 125:2-4

THE WITNESS: Yeah. Again, it's so far from what I've analyzed in this case, it's hard for me to say. What I can offer is that, from my experience, the purity that manufacturers require is typically very similar to the purity that is required through the APR methods.

EX1048, 126:15-20

Petitioner Demands Precision the Law Does Not Require

 *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370-71 (Fed. Cir. 2014)

“[A]bsolute or mathematical precision is not required”

Petitioner's Reply

With respect to PO's argument that whether a label is “recyclable” is determined by whether the label can be reclaimed as reusable resin, Dr. Phillips testified that “recyclable” could be where you reclaim all of the material and also “where you lost some of it in the process, but it is still recyclable.” EX1048, 133:3-134:3. When asked how much of the material can be lost for the label to still be deemed “recyclable,” Dr. Phillips testified that “[t]here's no number on that. That's not something I can answer.” *Id.*; EX1048, 144:8-15; EX1049, 31:5-32:2; 36:2-21. It is also dependent upon the use of the resin, which is different for each manufacturer. EX1048, 26:6-28:2.

Reply, 24

Dr. Phillips Testimony

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EX1048, 126:15-20

Dr. Bushman Testimony

Q. And so what does it mean that it's certified fully recyclable?

A. They are using the APR guidance as a statement of recyclability.

EX2010, 113:14-17

APR Guidelines are Precise Far In Excess of Patentability Requirements

 *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370-71 (Fed. Cir. 2014)

“[A]bsolute or mathematical precision is not required”

Petitioner's Reply

156:13. And, a POSITA does not know what level of contamination of the wash water would cause a POSITA to determine that a label is not recyclable because, according to Dr. Phillips, there is no criteria. EX1048, 157:2-10; 162:21-163:8.

Indeed, “if some inks wash off,” then “no person of ordinary skill in the art would have experience to be able to have a gauge of – not an absolute gauge...” EX1048, 181:19-182:15. When not enough ink is washed off “depends on the person and their experience.” *Id.*

Reply, 19

Dr. Bushman Testimony

5 Q. I would prefer to look at the
6 Annex 1 report form. Doesn't that indicate or
7 provide pre-defined categories for evaluating
8 the presence of ink and wash water?

9 A. It provides a variety of -- of
10 measurements and observations.

11 Q. The middle column says report
12 values, correct?

13 A. Okay.

14 Q. Is that true, the middle column
15 says report value?

16 A. Yes. It says report value.

EX2043, 108:5-16

Petitioner Demands Precision the Law Does Not Require

 *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370-71 (Fed. Cir. 2014)

“[A]bsolute or mathematical precision is not required”

Petitioner's Reply

Dr. Phillips then offered testimony regarding the subjective guidelines disclosed by the APR that further demonstrates that “recyclable” is indefinite. Dr. Phillips testified that while “the highest level of recycled material is when the material meets the specifications defined by the APR.” “the material can still be considered recyclable resin if it does not meet that highest standard.” EX1048, 20:21-22:5. That is because, according to Dr. Phillips, “[t]he APR method is – accepts a certain level of impurity.” *Id.* The level of impurities allowed for by the APR specifications “comes back to the experimental results.” *Id.* However, the level of impurity allowed is not defined, and is also subjective in that it is dependent upon the results of all of those results. EX1047, at ¶69.

Reply, 24

Dr. Phillips Testimony

THE WITNESS: Yeah. Again, it's so far from what I've analyzed in this case, it's hard for me to say. What I can offer is that, from my experience, the purity that manufacturers require is typically very similar to the purity that is required through the APR methods.

EX1048, 126:15-20

Petitioner Demands Precision the Law Does Not Require

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“[A]bsolute or mathematical precision is not required”

Petitioner's Reply

Third Party and FDA Guidelines. Dr. Phillips testified that while “the APR methods are one benchmark...there are other benchmarks that people can look at and do look at for a lower quality recyclable material.” EX1048, 42:7-45:6.

“Those [benchmarks] are dictated by the manufacturers.” *Id.* And, according to Dr. Phillips, whether a label is recyclable depends upon the particular manufacturer and the level of PET quality each product requires. *Id.* Otherwise stated, standards are “dictated by downstream manufacturers of what material they would be willing to use.” EX1048, 22:15-23:22. Those downstream manufacturers have different criteria for what they are willing to use and not use. EX1048, 24:17-25:15. This is subjective and different for each manufacturer. EX1047, ¶¶59-60.

Reply, 24

Dr. Phillips Testimony

Q Okay. So the FDA also has other benchmark requirements for a label to be deemed recyclable, as that term is used in the '422 patent?

THE WITNESS: To have a foreign material to have sufficient purity for FDA-related applications.

EX1048, 126:15-20

'422 Claims Are Definite

1

Recyclability Can Be Tested

2

New “Subjectivity” Theory Is Improper And Incorrect

3

'422 Patent Provides Consistent Guidance

4

Dr. Phillips' Is Consistent With APR Guidance

5

Other Courts Agree '422 Claims Definite

Dr. Phillips Correctly Testified That APR Tests Effects Of Ink Retention



Dr. Scott Phillips



Q Okay. Is there an objective test as to how much ink and pigment must be removed from the label for the label to be potentially recyclable, as that term is used in the '422 patent?

A And that's not what the tests measure. All right, the tests measures the consequence of the mixture after the fact and look at, like, quantitative features of the material after the washing step.

EX1048, 92:17-93:9

Property	Test method	APR Guidance Preferred values
<u>Required values</u>		
L value of plaques B	Evaluation of PET Plaques for Color, Haze and Inclusions, PET-S-09	>82
a* value of plaques A and B	PET-S-09	Less than 1.5 units difference between plaques A and B
b* value of plaques A and B	PET-S-09	Less than 1.5 units difference between A and B
% haze of plaques A and B	PET-S-09	Control not to exceed 9% value, and test not to exceed more than 10% units greater than control.
Inclusions and specks in plaques T5	PET-S-09	If A = 0; B is 2 or less If A = 1; B is 4 or less If A = 2; B is 6 or less

EX1027, 6

Plaque Test

Products made with PET are often valued because they have high clarity along with low color and haze. When recycling clear PET, it is important that the PET resin, additives, and any other features employed such as labels or closures have the least possible impact on the color and transparency of the resin. Industry experience is that inks, adhesives, additives, layers and coatings, for example, can be sources of color formation and specks in recycled PET.

Dr. Phillips Testified What Good Sortation Results Are



Dr. Scott Phillips



Q So if an article is entirely removed from the recycling stream because of a feature on a label, would that be a good result or a poor result?

A Well, that would be poor.

Q And similarly, if it is able to sort of get through the sortation process and continue into the recycling stream, would that be a good result or a poor result?

A That would be good.

EX1048, 206:10-18

Dr. Phillips Testified That POSITA Would Know Whether Other Tests Need To Be Performed



Dr. Scott Phillips



Q Okay. So looking at page 3 of Exhibit 1027, how does that inform your opinion as to whether the sortation guidance documents, for example, Sort-B-1, would be required in every circumstance?

A In this case, it's indicating that if there's metal links or other features that would block the NIR IR sorting step, the other sorting steps are not necessary for testing to see whether it's compatible with recycling.

EX1048, 207:11-19

Dr. Phillips Testified That POSITAs Would Not Inconsistently Apply APR Guidance



Dr. Scott Phillips



Q Okay. And as a person of skill in the art evaluates the data from all that test, could one person of skill in the art consider the impact merely negligible such that the label would be deemed recyclable and a different person of skill in the art determine that the results show that the impact is significant and therefore no longer recyclable?

THE WITNESS: The tests are quantitative, so you would not have different types of evaluation based on that.

EX1048, 146:22-147:11

Dr. Phillips Testified That POSITAs Would Know When To Use Clumping Test



Dr. Scott Phillips



Q Does a person of ordinary skill in the art understand that portion of the '422 patent which is at column 11 require that PET-S-08 not only be undertaken but met for a label to be recyclable, as that term is used in the '422 patent claims?

THE WITNESS: The label is that they cannot that they must meet these standards. My interpretation is that following the guidance of PET-CG-02 is the protocol that one would follow to measure whether a label is recyclable under the terms.

EX1048, 146:22-147:11

Dr. Phillips Testified That POSITAs Would Know How To Determine Recyclability Based On Testing



Dr. Scott Phillips



So ultimately, then, who determines whether the label material is recyclable as that term is used in the '422 patent?

A Well, I would have to speculate here. In this case it's -- the test results would be available, and then if people determine that those test results are acceptable for additional use, then they are using it.

Q And then in that case it would be deemed recyclable, as that term is used in the claims in the '422 patent?

THE WITNESS: I guess I can take a step back there as well in that I think any person of ordinary skill in the art could evaluate the data and say yes, this is consistent with what is normally considered a recyclable material.

EX1048, 34:18-35:12

'422 Claims Are Definite

1

Recyclability Can Be Tested

2

New “Subjectivity” Theory Is Improper And Incorrect

3

'422 Patent Provides Consistent Guidance

4

Dr. Phillips' Is Consistent With APR Guidance

5

Other Courts Agree '422 Claims Definite

Other Courts Other Courts And Other Companies In the Recycling Bottle Market Agree Claims Are Definite

Case 2:24-cv-00735-JRG-RSP Document 112 Filed 12/12/25 Page 1 of 24 PageID #: 2630

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

BROOK + WHITTLE LTD.
Plaintiff,

v.
NESTLE USA, INC. and FUJI SEAL
INTERNATIONAL, INC.,
Defendants.

CASE NO. 2:24-CV-00735-JRG-RSP

CLAIM CONSTRUCTION ORDER

On December 10, 2025, the Court held a hearing to determine the proper construction of disputed terms in United States Patent No. 11,961,422.

Before the Court are the Opening Claim Construction Brief (Dkt. No. 93) filed by Plaintiff Brook + Whittle Ltd., the Responsive Claim Construction Brief (Dkt. No. 97) filed by Defendants Nestlé USA, Inc. and Fuji Seal International, Inc. (collectively, “Defendants”), and Plaintiff’s reply (Dkt. No. 98). Also before the Court is the parties’ August 26, 2025 Joint Claim Construction and Prehearing Statement Pursuant to Patent L.R. 4-3 (Dkt. No. 83) and the parties’ November 4, 2025 Joint Claim Construction Chart (Dkt. No. 99).

Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing, having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Order. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (*per banc*); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

I. BACKGROUND

Plaintiff alleges infringement of United States Patent No. 11,961,422 (“the ‘422 Patent”).
Dkt. No. 93, Ex. 1.

- 1 -

B + W EX2037
Multi-Color v. Brook + Whittle
PGR2025-00025

At the December 10, 2025 hearing, the parties agreed to the Court’s preliminary constructions. The Court therefore hereby construes these terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“recyclable”	Plain meaning (apart from construction of “wherein the recyclable shrink label is recyclable with a PET container”)
“wherein the recyclable shrink label is recyclable with a PET container”	“wherein the shrink label is capable of being recycled without separating the shrink label material from a PET container material before or during the recycling process”

EX2037, 7

Claims 1–19 Should Be Confirmed

Ground	Key Failure	Record Citation
Ground 1 (Anticipation)	No proof of recyclability — Dr. Deible’s own tests confirmed ink retention; no contemporaneous APR certification exists for the Gatorade Label	<i>EX2011, 208:13–17;</i> <i>EX2042, 74:14–17</i>
Grounds 2–3 (Obviousness)	No credible motivation or expectation of success — hindsight reconstruction using the patent as a template; objective indicia (long-felt need, industry praise, competitor copying) confirm nonobviousness	<i>KSR, 550 U.S. at 421;</i> <i>EX2017, 3–4; EX2016</i>
Ground 4 (Indefiniteness)	The claims are definite — specification, prosecution history, and APR guidance consistently inform a POSITA of claim scope with reasonable certainty; subjectivity argument is untimely new theory contradicting Petitioner’s own positions	<i>Sonix, 844 F.3d at 1380;</i> <i>Reply, §§VII.C–E</i>
Expert Credibility	Petitioner’s experts should be excluded or given no weight — Dr. Deible made false statements under oath and never reviewed key prior art; Dr. Bushman holds irreconcilable positions on APR reliability	<i>EX2011, 118:1–9; EX2043,</i> <i>42:12–53:1</i>