

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VANTAGE SPECIALTY CHEMICALS, INC.

Petitioner,

v.

CARGILL, INCORPORATED,

Patent Owner

Case IPR2023-00589
U.S. Patent 11,248,245

PATENT OWNER'S PRELIMINARY RESPONSE

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LIST OF EXHIBITS

Exhibit Number	Description
2001	Declaration of Dr. Tom Schultz, Ph.D.
2002	G. Knothe, <i>Structure indices in FA chemistry. How relevant is the iodine value?</i> JAOCS, 79 (9) 847-854 (2002).
2003	Claim Construction Memorandum Opinion (Dkt No. 63) filed in <i>Cargill, Incorporated v. Vantage Specialty Chemicals, Inc.</i> , No. 1:22-cv-00979-RGA-SRF (D. Del. June 5, 2023)
2004	Excerpt of United States District Courts, Federal Court Management Statistics Report for the 12-month period ending March 31, 2023, <i>available at</i> https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_distprofile0331.2023.pdf
2005	Initial Invalidity Contentions (Dkt No. 27) filed in <i>Cargill, Incorporated v. Vantage Specialty Chemicals, Inc.</i> , No. 1:22-cv-00979-RGA-SRF (D. Del. Jan. 19, 2023)
2006	Markman Claim Construction Order (Dkt No. 67) filed in <i>Cargill, Incorporated v. Vantage Specialty Chemicals, Inc.</i> , No. 1:22-cv-00979-RGA-SRF (D. Del. June 15, 2023)

I. INTRODUCTION

Pursuant to 37 C.F.R. § 42.107(a), patent owner Cargill, Incorporated (“Patent Owner”) submits this Preliminary Response in response to the Petition for *Inter Partes* Review (“IPR”) of U.S. Patent No. 11,248,245 (“the ’245 patent”) filed by Vantage Specialty Chemicals, Inc. (“Petitioner” or “Vantage”).

Petitioner fails to present any ground in which the claims are rendered obvious by the combinations of references. In fact, Petitioner’s references do not disclose or suggest each and every claim limitation. Instead, Petitioner relies on general statements and inaccurate back-calculations from other properties disclosed in the references to allegedly show the claim limitations. Worse, the Petitioner attempts to combine references, most of which were already before the Office, in a piece-meal fashion without providing adequate—much less compelling—motivations as to why a POSITA would have made the combination. As we will describe further below, each of the Grounds is deficient.

First, the Petition fails to show that Cummings (Grounds 1, 4) or *Trans* Isomers 2 (Grounds 2, 3) discloses “an oxidative stability index (OSI) of [a] transesterified product [that] is greater than an OSI of the feedstock,” where the “feedstock compris[es] jojoba wax esters and hydrogenated jojoba wax esters.” Cummings’ disclosure of OSI values of jojoba esters relative to *refined jojoba oil* fails to meet the claimed feedstock including (1) jojoba wax esters and (2)

hydrogenated jojoba wax esters. Similarly, *Trans* Isomers 2’s description of OSIs of “Jojoba Esters 30” and “Jojoba Esters 60” relative to the OSIs of the “Jojoba Oil Partial Hydrogenate” does not meet the claimed comparison between OSIs of a transesterified product to a “feedstock comprising jojoba wax esters and hydrogenated jojoba wax esters.” The failure to demonstrate a comparison of transesterified product and feedstock meeting the claim limitations is a defect that cuts across the Petition’s challenges against claim 1 in all grounds.

Second, the Petition fails to show that Cummings (Ground 1), *Trans* Isomers 2 (Grounds 2 and 3), or Brown (Ground 4) disclose “wherein the amount of hydrogenated jojoba wax esters is 20% to 50% by weight of the feedstock,” as claim 1 requires. Each of the primary references describes only an iodine value associated with commercially available jojoba ester products, and does not describe a feedstock incorporating hydrogenated jojoba wax esters in the relevant weights. Petitioner’s attempt to back-calculate the weight percent of components of a feedstock based on the iodine values of commercial jojoba ester products relies on improper assumptions and does not provide a weight percent associated with a feedstock as claimed. Sessa, cited in the alternative in Grounds 1-4 for this feature, also fails to remedy the deficiencies of the primary references Cummings, *Trans* Isomers 2, and Brown.

Third, the Board should exercise its discretion to deny this Petition because overlapping invalidity arguments will be addressed, and resolved, in the co-pending district court proceedings before the Board would issue a final written decision here.

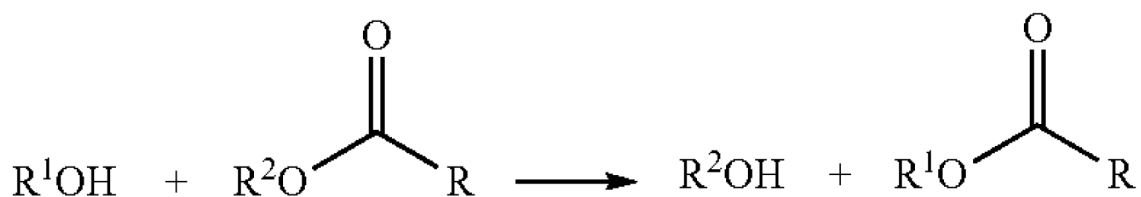
Finally, the Board should exercise its discretion to deny this Petition because the majority of the references cited in Petitioner's Grounds were before the Office during the more than seven years of examination prior to issuance of the '245 patent, of which many were even cited within the specification of the '245 patent itself.

Therefore, and for each of the reasons described herein, the Board should decline to institute *inter partes* review.

II. OVERVIEW OF THE '245 PATENT

A. Transesterifying jojoba wax esters

The '245 Patent describes methods for transesterifying jojoba wax esters using a lipase. EX-1001, 1:22-28. According to the specification of the '245 Patent, "[t]ransesterification involves the process of exchanging acyl groups located on each side of an ester group with an acyl group contained in an alcohol group. *Id.*, 3:28-30. The transesterification reaction illustrated in the '245 Patent is reproduced below:



EX-1001, 3:31-37.

Transesterification “permits altering of various physical properties of the transesterified product when compared to the original feedstock,” including properties like viscosity, dropping point, oxidative stability index (OSI), carbon chain distribution, and others. *Id.*, 3:38-46.

The '245 Patent describes that, at the time of filing of the patent, it was conventional to transesterify wax esters using acidic bentonite-type clay or chemical catalysts. *Id.*, 3:52-56 (acidic bentonite-type clay), 3:66-7:4 (chemical catalysts). The '245 Patent states that with use of chemical catalysts for transesterification processes, “side reactions between the catalyst and components of the feedstock and/or reactants occur during transesterification process” producing “byproducts that reduce the yield of the process and alter the properties of the transesterified product.” *Id.*, 4:1-6.

The '245 Patent describes that chemically catalyzed transesterification of jojoba oils by chemically catalyzed processes results in side reactions forming

various fatty acid methyl esters, and may remove or degrade “steryl esters, sterols, tocopherols, hydrocarbons, and volatile ingredients in the jojoba oil” resulting in “reduc[tion of] the OSI of the transesterified product to below the OSI of the original jojoba oil.” *Id.*, 7:34-42; *see also id.*, 8:29-33 (“the degradation/removal of tocopherols in the chemically catalyzed process adversely affects the oxidative stability (measured by the OSI) and accordingly, the shelf life, of the transesterified product.”).

The '245 Patent describes that enzymes including lipases can be used in transesterification of wax esters. *Id.*, 4:57-65. In the process of transesterifying a wax ester feedstock using enzymatic catalysis (illustrated in Fig. 2, reproduced below), a “wax ester feedstock passes through one or more catalytic reactors that allow a continuous catalytic transesterification reaction to take place.” *Id.*, 5:1-3. The use of enzymatic catalysis in transesterification of wax esters leads to “little or no side reactions between the enzyme catalysts and the reactants.” *Id.*, 5:12-13.

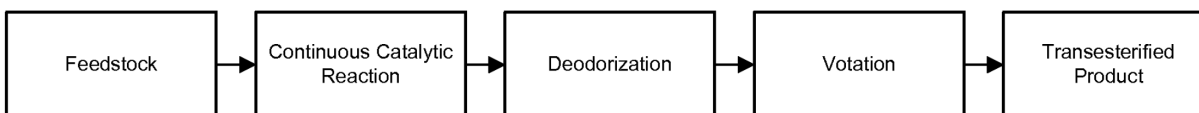


FIG. 2

EX-1001, Fig. 2.

The '245 Patent includes examples of processing feedstocks including jojoba wax esters with lipases. *Id.*, 6:43-56. And states that “[s]urprisingly... the OSI of the enzymatically catalyzed transesterified product is greater than that of the feedstock.” *Id.*, 9:56-58.

B. Claims

The '245 Patent includes one independent claim and four dependent claims. The independent claim is a process for transesterifying wax esters:

Independent Claim 1:

1. A process for transesterifying wax esters, the process comprising:
 - [1a] providing a feedstock comprising jojoba wax esters and hydrogenated jojoba wax esters, wherein the amount of hydrogenated jojoba wax esters is 20 % to 50 % by weight of the feedstock;
 - [1b] contacting the feedstock with a lipase; and transesterifying the jojoba wax esters and the hydrogenated jojoba wax esters in the feedstock with the lipase to form a transesterified product;
 - [1c] wherein an oxidative stability index (OSI) of the transesterified product is greater than an OSI of the feedstock.

Dependent Claims 2-5:

2. The process of claim 1, wherein the feedstock consists essentially of the jojoba wax esters and the hydrogenated jojoba wax esters.
3. The process of claim 1, wherein the feedstock does not comprise any free fatty alcohols.
4. The process of claim 1, wherein the transesterified product does not comprise any methyl esters.
5. The process of claim 1, wherein the feedstock does not comprise any methyl esters.

III. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) would have had at least a B.S. in Chemical Engineering, Chemistry, or a related field, and three years of work experience working in the specialty chemicals industry, including in the beauty, personal care, home care, food, or environmental chemical industries or in other specialty chemical industry areas. Less work experience may be compensated by a higher level of education and vice versa.

IV. CLAIM CONSTRUCTION

The district court issued a claim construction memo and order in the parallel proceeding in the District of Delaware. *See* EX-2006, 1; *see also generally* EX-2003. Given the arguments before the Board at this time, it is not currently necessary to resolve the issues related to claim construction. Patent Owner reserves the right to address any construction proposed by Petitioner or the Board.

V. THE PROPOSED GROUNDS DO NOT TEACH OR SUGGEST “AN OXIDATIVE STABILITY INDEX (OSI) OF [A] TRANSESTERIFIED PRODUCT [THAT] IS GREATER THAN AN OSI OF THE FEEDSTOCK”

Claim 1 specifies a feedstock “comprising jojoba wax esters *and* hydrogenated jojoba wax esters.” (Emphasis added). The feedstock as claimed contains at least two components: (a) jojoba wax esters and (b) hydrogenated jojoba wax esters. A transesterified product is formed by contacting the feedstock with the lipase. Claim 1 goes on to recite that the “oxidative stability index (OSI) of the transesterified product is greater than an OSI of the feedstock.” *See supra* §II.B.

In each of Grounds 1-4, none of the prior art references teach or suggest that the OSI of the transesterified product is greater than the claimed *feedstock* because the prior art references make no comparison between an OSI of a feedstock and an

OSI of the transesterified product of that feedstock, which comprises both jojoba wax esters and hydrogenated jojoba wax esters.

A. Ground 1

Petitioner fails to show that Cummings discloses the claimed relationship between OSI values of the claimed “feedstock” and its transesterified product formed by use of a lipase, or that Cummings discloses an OSI value representative of a feedstock containing both (a) jojoba wax esters and (b) hydrogenated jojoba wax esters.

1. Cummings does not teach an OSI value of the claimed “feedstock” and that there is an increase in OSI from the feedstock to the transesterified product

Petitioner fails to demonstrate that the refined jojoba oil described in Cummings is the claimed feedstock containing “jojoba wax esters and hydrogenated jojoba wax esters.” *See* EX-2001, ¶¶43-49. In Ground 1, Petitioner relies on the statement in Cummings “[j]ojoba esters demonstrate remarkable stability with OSI values of all jojoba esters greater than 100 hours and as high as 675 hours . . . the OSI of refined jojoba is around 35 hours.” EX-1004, 2; *see also* Pet., 38 (Ground 1). Cummings’ refined jojoba oil is not the claimed feedstock from which the jojoba esters are produced because nothing in Cummings discloses that the “refined jojoba oil” includes both “jojoba wax esters and hydrogenated jojoba wax esters” as required by claim 1.

Oxidative stability of many cosmetic ingredients can be measured to determine an Oxidative Stability Index (OSI).¹¹⁰⁾ Jojoba esters demonstrate remarkable stability with OSI values of all jojoba esters greater than 100 hours and as high as 675 hours. The OSI of refined jojoba oil is around 35 hours.

EX-1004, 2.

Petitioner fails to present evidence that Cummings discloses the claimed relationship of “an oxidative stability index (OSI) of [a] transesterified product [that] is greater than an OSI of the feedstock,” where the “feedstock compris[es] jojoba wax esters and hydrogenated jojoba wax esters.” (Element [1c]). *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art)).

The claimed feedstock includes the two components of “jojoba wax esters and hydrogenated jojoba wax esters.” Petitioner fails to demonstrate that Cummings discloses the feedstock as claimed. Instead, Petitioner and its expert, Dr. Rockstraw, rely on Cummings’ description of *refined jojoba oil* and its associated OSI value. *See* Pet., 38, 68; *see also* EX-1003, ¶122. Neither Cummings nor Petitioner explains or describes refined jojoba oil as a feedstock

that includes both “jojoba wax esters and hydrogenated jojoba wax esters.”

Accordingly, Petitioner fails to demonstrate that Cummings’ refined jojoba oil is representative of a feedstock as recited in claim 1.

Additionally, a POSITA would have understood that refined jojoba oil does not contain hydrogenated jojoba wax esters. *See* EX-2001, ¶¶46-48. Cummings does not describe the refined jojoba oil as including hydrogenated jojoba wax esters, and Petitioner does not provide any analysis that would indicate that Cummings’ refined jojoba oil would have contained this component. *See id.* The claimed feedstock includes both jojoba wax esters and hydrogenated jojoba wax esters, but there is no mapping to a feedstock including these two components. Hence, Petitioner’s reliance on the refined jojoba oil in Cummings fails to account for potential OSI contributions resulting from the presence of hydrogenated jojoba wax esters in the claimed feedstock. Even if the “refined jojoba oil” OSI given in Cummings were representative of the jojoba wax esters of the claimed feedstock (which is not conceded), Petitioner omits any reference to the second feedstock component; thus, the OSI associated with the “refined jojoba oil” is not representative of an OSI of the claimed feedstock containing both components. Indeed, Petitioner and Dr. Rockstraw acknowledge that the refined jojoba oil cannot be the claimed feedstock—“the refined jojoba oil that forms *part of* the feedstock.” Pet., 38 (emphasis added); *see also* EX-1003, ¶122.

Petitioner fails to address the fact that the refined jojoba oil pointed to as the alleged feedstock includes only one of the two required components of the claimed feedstock, and also fails to account for the contributions of both components of the feedstock (jojoba wax esters and hydrogenated jojoba wax esters) to the OSI. Cummings describes OSI values for jojoba esters and refined jojoba oil, but does not include an OSI value for a feedstock containing both jojoba wax esters and hydrogenated jojoba wax esters. Because Petitioner provides no OSI value corresponding to the claimed feedstock, Petitioner fails to meet the burden for Element [1c] — that the “oxidative stability index (OSI) of the transesterified product is greater than an OSI of the feedstock.”

2. Cummings’ jojoba wax esters are not the claimed “transesterified product”

Petitioner fails to provide evidence that Cummings’ jojoba esters are representative of the “transesterified product” as recited in claim 1. *See* EX-2001, ¶¶50-51. Instead, Petitioner relies on Cummings to demonstrate that the OSI value of a “transesterified product (jojoba esters)...is greater than the OSI of a feedstock” (Pet., 38) based on Cummings’ disclosure of the OSI values of jojoba esters relative to refined jojoba oil. *See* Pet., 38 (citing EX-1004, 2).

While Cummings describes “[j]ojoba oil is converted to jojoba esters through a process known as interesterification,” Cummings does not describe that

the jojoba esters for which an OSI value is provided are the transesterified product resulting from lipase-mediated reaction of a feedstock comprising the refined jojoba oil. EX-1004, 2. Cummings is also not specific as to the feedstock from which the jojoba esters are formed – whether it is the refined jojoba oil for which Cummings reports an OSI value or something else. The Petitioner does not provide any evidence or argument as to why the jojoba esters described in Cummings should be understood (or would have been understood by a POSITA) to be equivalent to the claimed transesterified product resulting from contacting the feedstock recited in claim 1. *CFMT, Inc. at 1342* (citing *In re Royka at 985* (holding that to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art)).

Accordingly, Petitioner fails to meet the burden of showing that Cummings teaches or suggests element [1c] in Ground 1.

3. Petitioner’s claim that it was well known that transesterification results in products with higher OSI does not remedy the deficiencies of Cummings in Ground 1

Petitioner fails to demonstrate that its claim that a higher OSI value in a transesterified product relative to a feedstock was well known. *See Pet.*, 38 (“[I]t was well known that the transesterification of fats, oils, and wax esters—including in lipase-catalyzed processes and processes involving jojoba wax esters and hydrogenated jojoba wax esters—can produce a product having improved, and thus

greater, oxidative stability[.]”), 52, 58, 69. Petitioner’s argument that the higher OSI value in a transesterified product relative to a feedstock was well known is based on references describing transesterification of triglycerides or similar materials. *See* Pet., 38 (citing EX-1015, EX-1016, EX-1017, and EX-1018). However, Petitioner’s cited references do not show that Cummings’ OSI values given for refined jojoba oil and commercial jojoba esters meet the requirements of element [1c]. *See* EX-2001, ¶¶52-61.

Kodali (EX-1015) describes “oils transesterified with short-chain fatty acid esters” and their lubrication properties. EX-1015, [0001]. Kodali transesterifies “short saturated fatty acid esters with triacylglycerol containing oils” which “improves oxidative stability.” *Id.*, [0005]. Kodali describes the oxidative stability and low temperature properties of transesterified vegetable oils in Table 1, but does not include or mention jojoba oils or jojoba wax esters. Kodali describes that “the short chain fatty acid esters can be from six to 10 carbons in length.” EX-1015, [0006]. Because jojoba esters are long chain esters, Kodali’s description of the transesterification of short saturated fatty acid esters with triglycerol containing oils, is irrelevant. *See e.g.*, EX-1001, 6:65-66 (“The wax esters in jojoba oil generally vary between 34 and 48 carbons in length.”); EX-1015, [0028] (“Jojoba oil is composed principally of 40 and 42 carbon chain esters, which are in turn composed of monounsaturated fatty acids and fatty alcohols of 20 and 22 carbon

chain length”). Furthermore, the “vegetable oils [that] are known to provide ... low oxidative stability,” as described by Kodali (EX-1015, [0005]), are distinguishable from jojoba oil, which is described as “highly resistant to oxidation” by Petitioner’s own submitted reference (EX-1016, [0028]). Kodali’s descriptions of vegetable oil oxidative stability therefore do not reflect the chemical properties known to be associated with jojoba oils. In addition to Kodali’s lack of disclosure related to jojoba esters, Kodali also fails to describe the use of lipases in transesterification reactions.

Touitou (EX-1016) describes dermatological compounds for preventing damage from UV radiation. EX-1016, Abstract. One compound described in Touitou is a “compound[] for topical application comprising at least one photoprotective compound for topical application comprising of hydroxylated derivatives of natural Jojoba wax/oil or its synthetic substitute, esterified with carboxylic acids or aminoacids [sic] bearing UV-absorbing groups.” *Id.* Touitou describes that generally “Jojoba oil... [is] highly resistant to oxidation” (EX-1016, [0028]), and also that “Jojoba esters are... extremely resistant to oxidative degradation.” *Id.*, [0031]. Touitou also fails to describe the use of lipases in transesterification reactions. Accordingly, Touitou describes that both jojoba oil and jojoba esters have high oxidative stabilities, and does not provide any

comparison of oxidation measures for feedstock and transesterified products. *Id.*, [0028].

Xu et al. (EX-1017, referred to as “Xu 2” herein) describes developments in lipid modification technologies including interesterification of triacylglycerols (e.g., triglycerides). EX-1017, 2. Xu 2 does not mention jojoba wax esters, and focuses on transesterification of triglycerides. Xu 2 describes that in studies involving interesterification of triacylglycerols, the compounds “became more physically stable with [increasing conversion of the reaction].” *Id.*, 12. Based on these study results, Xu 2 suggests that “enzymatic interesterification has advantages for the oxidative stability of the products,” but neglects to tie the results to interesterified products involving other compounds. *Id.* In fact, Xu 2’s results related to triglycerides are not relevant to jojoba oils, because “[j]ojoba oil contains less than 3% triglyceride and [is] highly resistant to oxidation.” EX-1016, [0028]. Accordingly, Xu 2 fails to mention jojoba oil or wax esters, focuses on triglycerides, and does not provide OSI values for jojoba oils/esters or any other compounds for comparison.

Lopez-Hernandez (EX-1018) describes studies involving transesterification of triacylglycerols and soybean oil. EX-1018, Abstract. Lopez-Hernandez discusses the use of enzymatic reactions to interesterify a medium-chain triacylglycerol (MCT) oil with a soybean oil, and the “effects of the biocatalyst and

the substrate mixture on the final TAG compositions and the corresponding melting profiles of the products.” *Id.*, 2. Lopez-Hernandez describes that in the resulting compositions, “[t]he absence of unsaturated fatty acids residues [sic] implies that the products of the synthesis reaction have enhanced stability with regard to oxidation processes.” *Id.*, 7. However, Lopez-Hernandez does not mention or describe experimental results using jojoba esters, and offers no OSI values for jojoba ester feedstocks or transesterified products which can be compared. Additionally, Petitioner fails to provide any arguments that the results and conclusions of Lopez-Hernandez would be expected to hold true for jojoba wax esters.

Xu and *Trans* Isomers 2, relied on by Petitioner as allegedly disclosing the use of lipases and enzymes in transesterification reactions, also fail to provide any evidence that it was well known that use of a lipase to produce a transesterified product would result in a higher OSI value than an OSI value of the feedstock. Further, Petitioner does not provide any analysis that would support a POSITA understanding this to be the case based on the Xu and *Trans* Isomers 2 disclosures. *See* EX-2001, ¶¶58-59.

These above-described deficiencies demonstrate Petitioner’s utter failure to support its allegation that it was well known that transesterification of jojoba wax esters and hydrogenated jojoba wax esters could produce products with greater

oxidative stability. Petitioner simply has not provided any evidence to support their contention that this was known.

Furthermore, Petitioner's expert similarly fails to provide any evidence to support the alleged obviousness of a transesterified product having a greater OSI than the feedstock. *See* EX-2001, ¶60. Instead, the expert points to general descriptions of jojoba esters as being "resistant to oxidative degradation" (EX-1016, [0031]) that lack any comparison between the OSI of a feedstock comprising (1) jojoba wax esters and (2) hydrogenated jojoba wax esters and a transesterified product produced by use of a lipase. EX-1003, ¶¶122-123. Without any support showing that it was obvious that a transesterified product produced from a feedstock of jojoba wax esters and hydrogenated jojoba wax esters would have a higher OSI than the feedstock, Petitioner fails to meet the burden.

As described above, Petitioner does not demonstrate that Cummings describes an OSI of the claimed feedstock including both jojoba wax esters and hydrogenated wax esters. Petitioner also fails to point to any disclosure in Cummings that teaches or suggests the claimed relationship between the transesterified product and feedstock. Specifically, Petitioner fails to demonstrate that Cummings teaches or suggests the claimed limitation of "an oxidative stability index (OSI) of [a] transesterified product [that] is greater than an OSI of the

feedstock,” where the “feedstock compris[es] jojoba wax esters and hydrogenated jojoba wax esters.”

Accordingly, Petitioner has not met their burden with regard to element [1c] in Ground 1.

B. Ground 2

In Ground 2, Petitioner relies on *Trans* Isomers 2 as allegedly disclosing “an oxidative stability index (OSI) of [a] transesterified product [that] is greater than an OSI of the feedstock [used as reactants of the transesterified product].” *See* Pet., 51. Petitioner relies on *Trans* Isomers 2’s description of a partially hydrogenated jojoba oil as the alleged feedstock, but fails to compare the OSI of the partially hydrogenated jojoba oil to a transesterification product of the alleged feedstock and does not account for the contributions of both “jojoba wax esters and hydrogenated jojoba wax esters” components of the feedstock.

Accordingly, Petitioner fails to meet the burden of providing proof that *Trans* Isomers 2 teaches or suggests “an oxidative stability index (OSI) of [a] transesterified product [that] is greater than an OSI of the feedstock,” where the “feedstock compris[es] jojoba wax esters and hydrogenated jojoba wax esters.”

1. *Trans* Isomers 2 does not teach an OSI value of the “feedstock” and that there is an increase in OSI from the feedstock to the transesterified product

Petitioner fails to provide proof that the “jojoba oil partial hydrogenate” described in Table 4 of *Trans* Isomers 2 is the claimed feedstock containing “jojoba wax esters and hydrogenated jojoba wax esters.” See EX-2001, ¶¶63-68.

TABLE 4. PHYSICAL PROPERTIES OF INTERESTERIFIED JOJOBA ESTERS IN COMPARISON WITH LIKE MELTING PARTIAL HYDROGENATES								
Sample	Melting Point °C	Iodine Value g I/100g of Sample	% Trans	Oxidative Stability Index, Hours	Index of Refraction μ -@80°C	Penetrometer, Mm	Slip, Cadcamo, Degress (1%)	Slip, IFT, Degress (100%)
Jojoba Esters 30	49	58	0	165	1.4418	26.4	18.9	23
Jojoba oil Partial Hydrogenate	49	69	11	27	1.4435	—	19.3	>25
Jojoba Esters 60	59	42	0	225	1.4403	9.3	17.9	14.1
Jojoba Oil Partial Hydrogenate	59	49	37	108	1.4408	5.2	18.1	15.4

EX-1006, Table 4.

First, the “jojoba oil partial hydrogenate” in Table 4 of *Trans* Isomers 2 is not a feedstock from which Jojoba Esters (30) and (60) are formed. Indeed, *Trans* Isomers 2 offers no description that would support Jojoba Esters (30) and Jojoba Esters (60) being transesterified products of the jojoba oil partial hydrogenate. Furthermore, Petitioner does not provide any argument that would support such an assumption.

Instead, *Trans* Isomers 2 presents the jojoba oil partial hydrogenate as a comparison to the Jojoba Esters (30) and (60). See EX-2001, ¶¶63-65. The jojoba oil partial hydrogenate is not a feedstock for a transesterification reaction, but is instead a comparative product for demonstrating the characteristics of the Jojoba

Esters products. Because the Jojoba Esters (30) and (60) products are not produced from Trans Isomers 2's jojoba oil partial hydrogenate, the jojoba oil partial hydrogenate is not equivalent to the claimed feedstock of element [1c]. Accordingly, Petitioner's comparison of the OSI values given for jojoba oil partial hydrogenate and Jojoba Esters (30) and (60) does not provide a comparison between the feedstock and the transesterified product as claimed.

Second, there is no description in *Trans Isomers 2* to suggest that the jojoba oil partial hydrogenate includes both claimed feedstock components of (1) jojoba wax esters and (2) hydrogenated jojoba wax esters. Even if the jojoba oil partial hydrogenate were considered to represent the claimed feedstock (which is not conceded), Petitioner does not demonstrate that the jojoba oil partial hydrogenate would include the two claimed components in the claimed weight percent ("wherein the amount of hydrogenated jojoba wax esters is 20 % to 50 % by weight of the feedstock"). In particular, Petitioner has failed to point to any disclosure in *Trans Isomers 2* indicating that the "Jojoba Oil Partial Hydrogenate" contains both jojoba wax esters and hydrogenated jojoba wax esters, let alone that it contains the recited amount of 20% to 50%. Petitioner further fails to explain the effects variation in weight percent of the feedstock components would have with regard to the OSI of the feedstock.

In sum, Petitioner fails to demonstrate that *Trans Isomers 2* teaches or suggests the claimed limitation of “an oxidative stability index (OSI) of [a] transesterified product [that] is greater than an OSI of the feedstock,” where the “feedstock compris[es] jojoba wax esters and hydrogenated jojoba wax esters.”

Accordingly, Petitioner has not met their burden with regard to element [1c] in Ground 2.

2. *Trans Isomers 2*’s Jojoba Esters 30 and Jojoba Esters 60 are not the claimed “transesterified product”

With regard to Ground 2, Petitioner relies on *Trans Isomers 2* to demonstrate that the OSI value of a “transesterified product (jojoba esters)...is greater than the OSI of a feedstock” (Pet., 38) based on *Trans Isomers 2*’s disclosure of the OSI values of Jojoba Esters 30 and 60 relative to “Jojoba oil Partial Hydrogenate” having the same melting point. *See* Pet., 51 (citing EX-1006, 3-4, Table 4). However, Petitioner fails to provide evidence that *Trans Isomers 2*’s Jojoba Esters 30 and 60 are representative of the “transesterified product” as recited in claim 1. *See* EX-2001, ¶¶69-70.

Trans Isomers 2 does not describe that Jojoba Esters 30 and 60 for which an OSI value is provided are the transesterified product resulting from *lipase*-mediated reaction of a feedstock comprising the “Jojoba oil Partial Hydrogenate” described in Table 4. EX-1006, Table 4. *Trans Isomers 2* does not provide any

information about the feedstock from which the Jojoba Esters 30 and 60 products. Petitioner does not provide any evidence or argument as to why the Jojoba Esters 30 and 60 described in *Trans Isomers 2* should be understood (or would have been understood by a POSITA) to be equivalent to the claimed transesterified product resulting from the lipase contacting the feedstock recited in claim 1. *CFMT, Inc. at* 1342 (citing *In re Royka* at 985 (holding that to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art)).

Accordingly, Petitioner has not met the burden of showing that *Trans Isomers 2* teaches or suggests this element in Ground 2.

3. Petitioner's claim that it was well known that transesterification results in products with higher OSI fails to remedy the deficiencies of *Trans Isomers 2* in Ground 2

As discussed above, Petitioner's contention that a higher OSI value in a transesterified product relative to a feedstock was well known lacks basis and is not supported by the references cited in the petitioner and expert declarations. *See supra* §V.A.3; *see also* EX-2001, ¶¶52-61, 71. For the same reasons discussed above, Petitioner fails to support the claim that it was well known that a transesterified jojoba ester product would have a higher OSI than the feedstock.

Accordingly, Petitioner fails to meet the burden with regard to element [1c] in Ground 2.

C. Ground 3

1. Petitioner fails to meet the burden regarding element [1c] in Ground 3

As described above, Petitioner (1) fails to provide proof that the “Jojoba oil Partial Hydrogenate” described in *Trans* Isomers 2 is the claimed “feedstock,” (2) fails to demonstrate that *Trans* Isomers 2 provides an OSI value of the “feedstock” and that there is an increase in OSI from the feedstock to the transesterified product; and (3) fails to provide arguments that Jojoba Esters 30 and Jojoba Esters 60 described in *Trans* Isomers 2 are the claimed “transesterified product.” *See supra* §§V.B.1-2; *see also* EX-2001, ¶¶63-70, 72. Additionally, for the same reasons discussed above in §§V.A.3 and V.B.3, Petitioner’s contention that it was well known that a transesterified jojoba ester product would have a higher OSI than the feedstock is unsupported by the cited references. *See* EX-2001, ¶¶52-61, 71-72. Accordingly, for the reasons explained above with regard to Ground 2, Petitioner fails to meet the burden regarding element [1c] in Ground 3.

D. Ground 4

The previously described deficiencies of Cummings are also present in Ground 4 because the Petitioner relies on Cummings’s disclosure of element [1c]. Petitioner again relies on Cummings’ disclosure of OSI values of jojoba esters and jojoba oils as allegedly disclosing the increase in OSI value from the feedstock to the transesterified product. However, as described above with regard to Ground 1,

Petitioner fails to demonstrate that Cummings teaches or suggests element [1c], and, Brown does not remedy these deficiencies for the reasons discussed below.

1. Brown and Cummings do not provide an OSI value of the “feedstock” and that there is an increase in OSI from the feedstock to the transesterified product

Petitioner fails to demonstrate that the combination of Brown and Cummings in Ground 4 teaches or suggests element [1c]. As described above in Ground 1, Petitioner fails to provide evidence that the refined jojoba oil described in Cummings is the claimed feedstock containing “jojoba wax esters and hydrogenated jojoba wax esters.” *See supra* §V.A.1; *see also* EX-2001, ¶¶43-49, 74-76. Similarly, Petitioner fails to provide proof that Brown’s jojoba oil meets the claimed feedstock limitation. Accordingly, Petitioner does not demonstrate that Brown or Cummings teach or suggest the claimed “feedstock,” or an OSI value associated with a satisfying the feedstock limitation. *CFMT, Inc. at* 1342 (citing *In re Royka* at 985 (holding that to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art)).

Brown does not provide any OSI value associated with jojoba oil or transesterified products of a jojoba oil feedstock. Petitioner fails to provide evidence that the alleged jojoba oil “feedstock” described in Brown is equivalent to the “refined jojoba oil” for which Cummings provides an OSI value.

Instead, Petitioner relies on Cummings' statement that "[j]ojoba esters demonstrate remarkable stability with OSI values of all jojoba esters greater than 100 hours and as high as 675 hours... the OSI of refined jojoba is around 35 hours" as allegedly disclosing element [1c]. EX-1004, 2; *see also* Pet., 68. As described above, Cummings also fails to disclose a compound that would be equivalent to the claimed feedstock including both jojoba wax esters and hydrogenated jojoba wax esters, and fails to provide or account for the contributions of both components to the OSI of the claimed feedstock. *Supra* §V.A.1. Accordingly, neither Cummings nor Brown provide an OSI value associated with the claimed feedstock.

Accordingly, because Petitioner does not provide an OSI value corresponding to the claimed feedstock, Petitioner fails to meet the burden for Element [1c] — that the "oxidative stability index (OSI) of the transesterified product is greater than an OSI of the feedstock."

2. Neither Brown's nor Cummings' jojoba wax esters are the claimed "transesterified product"

Neither Cummings nor Brown provide an OSI value associated with the product of transesterification. *CFMT, Inc. at* 1342 (citing *In re Royka at* 985 (holding that to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art)). Petitioner

concedes that Brown does not disclose transesterification of the feedstock to produce a transesterified product having an OSI greater than an OSI associated with a feedstock. *See* Pet., 66. As described above, Cummings fails to describe that the refined jojoba oil provides a feedstock from which the jojoba esters are produced. *Supra* §V.A.2; *see also* EX-2001, ¶¶50-51, 77. Further, Petitioner fails to provide any argument as to why a POSITA would have understood Cummings' jojoba esters to be a transesterified product of the refined jojoba oil. *Supra* §V.A.2. Accordingly, Petitioner fails to meet the burden of showing that the combination of Brown and Cummings teaches or suggests element [1c] in Ground 4.

3. Petitioner's claim that it was well known that transesterification results in products with higher OSI fails to remedy the deficiencies of Brown and Cummings in Ground 4

Petitioner fails to demonstrate that its claim that a higher OSI value in a transesterified product relative to a feedstock was well known. *See* Pet., 52. As discussed above, Petitioner's contention that this was well known lacks basis and is not supported by the references cited in the petition and expert declaration. *See supra* §V.A.3; *see also* EX-2001, ¶¶52-61, 77. For the same reasons discussed above, Petitioner fails to support the claim that it was well known that a transesterified jojoba ester product would have a higher OSI than the feedstock.

Accordingly, Petitioner has not met their burden with regard to claim limitation [1c] in Ground 4.

VI. PETITIONER FAILS TO MEET THE BURDEN OF SHOWING THAT THE PRIOR ART TEACHES OR SUGGESTS “THE AMOUNT OF HYDROGENATED JOJOBA WAX ESTERS IS 20% TO 50% BY WEIGHT OF THE FEEDSTOCK”

Petitioner fails to meet the burden of showing that a POSITA would have found it obvious to “provid[e] a feedstock comprising jojoba wax esters and hydrogenated jojoba wax esters, wherein the amount of hydrogenated jojoba wax esters is 20 % to 50 % by weight of the feedstock” based on the known prior art before the Critical Date. In each of Grounds 1-4, Petitioner acknowledges that the primary references fail to expressly disclose a feedstock including jojoba wax esters and hydrogenated jojoba wax esters in the claimed weight percent, but relies on a back-calculation from an iodine value given for various commercial jojoba ester products to estimate the weight percent of the reactants claimed in element [1a]. However, this back-calculated estimate is neither clear nor accurate for determining a weight percent of a reactant. *See* EX-2001, ¶¶84-93.

Petitioner’s reliance in the alternative on the combination of the primary references with Sessa in each of Grounds 1-4, is deficient as neither Sessa nor the Petition provides a clear motivation for modifying the primary reference to achieve the particular claimed weight percentages of claim element [1a].

Accordingly, as will be described below, Petitioner fails to demonstrate that the prior art teaches or suggests claim element [1a].

A. Ground 1

1. Cummings fails to disclose a feedstock in which the “amount of hydrogenated jojoba wax esters is 20% to 50% by weight”

Petitioner does not demonstrate that Cummings discloses the claim elements of limitation [1a]. In fact, Petitioner concedes that “Cummings does not expressly disclose ‘20% to 50%’ in specific words. Pet., 29. (Emphasis omitted). Indeed, Cummings does not provide any description of the composition of the feedstock used to prepare the various commercial jojoba esters described in Fig. 3.

Accordingly, Cummings does not disclose the claimed feedstock in which an “amount of hydrogenated jojoba wax esters is 20% to 50% by weight.” *See* EX-2001, ¶¶82-83.

2. Petitioner’s back-calculation of reactant weight percentages from the iodine value fails

Petitioner’s attempts to estimate the weight percentage of the reactants based on an alleged correlation between an iodine value given in Cummings and the number of double bonds present in the product fails for multiple reasons.

First, Petitioner’s equation for the back-calculation of reactant weight percentages in the feedstock appears to be incorrect. *See* EX-2001, ¶¶84-85.

Among other derivation errors, the equation omits the fatty acid constant required

in the iodine value equations from which it is derived. *See* EX-1025, 3; EX-1026, 3; EX-2001, ¶86. The omission of the fatty acid factors from the equation suggests that the Petitioner's back-calculation is incomplete and the calculated results on which the Petitioner relies for claim element [1a] are inaccurate.

Second, Petitioner fails to establish that what the actual compositions of the Jojoba esters "products" are and therefore cannot correlate the products' iodine value to its feedstock. The iodine values reported by Cummings are associated with commercial jojoba ester products following transesterification. *See* EX-1004, Fig. 3. The back-calculation of the weight percentages of the original feedstock components (i.e., the reactants) from this value mistakenly relies on multiple assumptions. *See* EX-2001, ¶¶87-89. Iodine value ("IV") is a measure of total saturation or unsaturation of an oil or fat. *See* EX-2002, 1, 2. "IV has been included in the standards of some industrial products derived from vegetable oils and fats, such as biodiesel [and i]t is also occasionally used in assessing oxidative stability of oils and fats and their derivatives." *Id.*, 1. The iodine value of a pure compound can be calculated based on the molecular weight of the compound and the number of double bonds (because the iodine atoms are added to each double bond in the wet chemical method for determining IV). *Id.*, 2.

Cummings does not describe the transesterification processing methods used to produce the jojoba esters (30) and (60) and corresponding yields, and, as a

result, it is not possible to assess whether the products are reflective of actual reaction products of a transesterification process. Does “Jojoba esters (30)” reflect a product that contains only desired ester compositions as shown in Fig. 2? Does “Jojoba esters (30)” include side-products or unreacted feedstock? Is “Jojoba esters (30)” subjected to post-reaction refining processes that further purify the esters contained in the product? Any of these scenarios could impact the iodine value of the “Jojoba esters (30)” product, and accordingly impact the estimated weight percent of the reactants estimated by Petitioner’s back-calculation. *See* EX-2001, ¶¶89. Accordingly, multiple questions exist, and are unanswered by Cummings or the Petitioner, that would significantly affect whether one can establish any conclusions about the reaction product, as well as its reactants (e.g., feedstock), from Petitioner’s back-calculation. *See* EX-2002, 1 (“structure indices [such as iodine value] of fatty compounds can be influenced by the presence of accompanying materials.... as these indices often depend on the amounts of all components of a mixture.”). Because Petitioner fails to establish what the full composition of each Jojoba ester product listed in Figure 3 is, it is not possible to back-calculate the weight percentages of the reactants in the feedstock based on the products’ iodine values. *See* EX-2001, ¶¶87-89.

Third, Petitioner’s calculation relies on the assumption that all jojoba esters resulting from the transesterification are either fully saturated or fully unsaturated,

and that the ratios/weights of these wax esters relative to one another are unchanged by the transesterification process. *See* Pet., 30. But Cummings describes that this is not necessarily the case: “Interesterification produces jojoba esters engineered to contain different ratios of molecules with either no double bonds (fully saturated), one double bond (monounsaturated) or two double bonds (fully unsaturated)... It is these compositional differences... that create their expanded utility in cosmetic preparations.” EX-1004, 2. If, as Cummings reports, the ratio of fully saturated jojoba wax esters can be changed by the transesterification process, the final ratio may not be indicative of the percentages of the reactants in the feedstock. *See* EX-2001, ¶¶90. Neither Cummings nor the Petitioner provides any reason to treat the composition of the final jojoba ester products as representative of the original materials.

Finally, the Petitioner’s back-calculation neglects to consider the impact of other factors on the IV of a product. *See* EX-2001, ¶¶91-93. “The IV of higher esters decrease with increasing size of the alcohol moiety [as a] result of the IV being dependent on the M.W. [molecular weight] of the fatty compound.” EX-2002, 2. While the iodine value of a pure compound may be calculated based on knowledge of the molecular weight and the number of double bonds present, back-calculation of the reactants from an iodine value of a product is not so straightforward.

“[A] given IV can be satisfied with different FA [fatty acid] profiles.” EX-2002, 3. The IV of a mixture of fatty compounds depends on the amounts of the fatty components of the mixture “but not on the exact nature of the double bonds in the structure of those fatty components.” *Id.* A given IV can be reached by multiple compositions of a set of fatty acids. This, along with the lack of information about the products themselves, makes Petitioner’s back-calculation of weight percentages of the reactants in the feedstock imprecise at best. *See also* EX-2002, 2 (“Many wet chemical methods for determining IV and SV have limited applicability and/or are error-prone as stated in remarks that accompany these methods”). Petitioner does not account for this in the analysis of the iodine values of the jojoba esters products. *See* EX-2001, ¶¶92-93.

Petitioner’s analysis is deficient in its failure to address the actual compositions of the jojoba esters products relative to the reactants, and relies on back-calculation to estimate the weight percent of the reactants in the feedstock without accounting for the assumptions underlying the use of iodine values in this way.

3. Cummings in view of Sessa does not teach or suggest a feedstock in which the “amount of hydrogenated jojoba wax esters is 20% to 50% by weight”

Petitioner fails to demonstrate that a POSITA would have been motivated to use Sessa’s calibration set of jojoba wax ester blends in preparing a feedstock for

the preparation of the jojoba esters described in Cummings. Petitioner's alternative ground based on the combination of Cummings with Sessa lacks any explanation as to why a POSITA would have implemented Sessa's calibration set in Cummings' reactions. *See* EX-2001, ¶¶94-95. Sessa describes a calibration set of jojoba wax ester blends for use in producing compositions with thermal properties mimicking those of cocoa butter. *See* EX-1009, 1. Petitioner states that "[a] POSA would have been motivated—and found it routine optimization—to vary the amount of hydrogenated jojoba wax esters in the feedstock disclosed in Cummings to an amount that is 20% to 50% by weight of the feedstock, as disclosed in Sessa, to obtain desirable and/or improved physical properties, such as oxidative stability and thermal properties in the transesterified product, and would have had a reasonable expectation of success in so doing." Pet., 33-34. However, Petitioner does not provide any analysis as to why a POSITA would have been motivated to look to or incorporate Sessa's calibration set of jojoba esters in Cummings' feedstock for producing jojoba esters, much less why a POSITA would have modified Cummings with Sessa's calibration set to achieve the claimed weight percentages. Given that Sessa's aim is to provide "a cocoa butter equivalent," it is not clear why a POSITA would have modified Cummings to incorporate the calibration set to achieve the claimed weight percentages, and

Petitioner fails to provide any analysis or rationale to fill this gap. *See* EX-2001, ¶¶94-95.

Accordingly, Petitioner fails to meet the burden of showing that the combination of Cummings and Sessa teaches or suggest element [1a] in Ground 1.

B. Ground 2

1. Trans Isomers 2 fails to disclose a feedstock in which the “amount of hydrogenated jojoba wax esters is 20% to 50% by weight”

Petitioner fails to demonstrate that *Trans Isomers 2* discloses the claim elements of limitation [1a]. Indeed, Petitioner concedes that “*Trans Isomers 2* does not expressly disclose ‘20% to 50%.’” Pet., 44. (Emphasis omitted). In fact, *Trans Isomers 2* does not provide any description of the reactant amounts in a feedstock for preparing the various commercial jojoba esters described in Table 2. EX-1006, 3, Table 2.

Accordingly, *Trans Isomers 2* does not disclose the claimed feedstock in which an “amount of hydrogenated jojoba wax esters is 20% to 50% by weight.” *See* EX-2001, ¶96.

2. Petitioner’s reliance on back-calculation of reactant weights from the iodine value is not an accurate estimation

As in Ground 1 above, Petitioner’s reliance on the back-calculation of reactant weights from an iodine value of a product is inaccurate, at least because

(1) Petitioner fails to establish that what the actual compositions of the Jojoba esters “products” are and therefore cannot correlate the products’ iodine value to its feedstock; (2) Petitioner’s back-calculation uses an incomplete equation and relies on the assumption that all jojoba esters resulting from the transesterification are either fully saturated or fully unsaturated, and that the ratios/weights of these wax esters relative to one another are unchanged by the transesterification process, which Petitioner has not demonstrated is necessarily true; and (3) Petitioner’s back-calculation neglects to consider the impact of other factors on the IV of a product. *See supra* §VI.A.2; *see also* EX-2001, ¶¶84-93, 98.

Accordingly, for the reasons explained above with regard to Ground 1, Petitioner fails to meet the burden of showing that *Trans Isomers 2* teaches or suggests element [1a] in Ground 2.

3. *Trans Isomers 2* in view of Sessa does not teach or suggest a feedstock in which the “amount of hydrogenated jojoba wax esters is 20% to 50% by weight”

As in Ground 1 above, Petitioner’s alternative ground relying on the disclosure of Sessa fails because Petitioner does not demonstrate that a POSITA would have been motivated to use Sessa’s calibration set of jojoba wax ester blends in preparing a feedstock for the preparation of the jojoba esters described in *Trans Isomers 2*. Petitioner lists the same alleged motivations for the combination of Sessa with *Trans Isomers 2* as were listed as motivations for the combination of

Sessa with Cummings in Ground 1. *Id.*, 46-47; *see also id.*, 33-34. These motivations are no more compelling with regard to the combination of Sessa with *Trans* Isomers 2 than they were in Ground 1. Petitioner provides no analysis as to why a POSITA would have been motivated to look to or incorporate Sessa's calibration set of jojoba esters for providing "a cocoa butter equivalent" in *Trans* Isomers 2's feedstock for producing jojoba esters, much less why a POSITA would have modified *Trans* Isomers 2 with Sessa's calibration set to achieve the claimed weight percentages. *See* EX-2001, ¶99.

Accordingly, Petitioner fails to meet the burden of showing that the combination of *Trans* Isomers 2 and Sessa teaches or suggest element [1a] in Ground 2.

C. Ground 3

1. Petitioner fails to meet the burden regarding element [1a] in Ground 3

As in Ground 2 described above, Petitioner fails to (1) provide evidence that *Trans* Isomers 2 discloses the claimed weight percentage of [1a]; (2) demonstrate that back-calculation of reactant weights from the iodine value of a product is an accurate estimation; and (3) demonstrate that *Trans* Isomers 2 in view of Sessa render obvious a feedstock in which the "amount of hydrogenated jojoba wax esters is 20% to 50% by weight" in view of Sessa's discussion of jojoba calibration sets for producing a cocoa butter alternative. *See supra* §§VI.B.1-3; *see also* EX-

2001, ¶¶84-93, 96-100. Accordingly, for the reasons explained above with regard to Ground 2, Petitioner does not meet the burden of showing the combination of *Trans* Isomers 2 and Sessa teaches or suggest element [1a] in Ground 3.

D. Ground 4

1. Brown fails to disclose a feedstock in which the “amount of hydrogenated jojoba wax esters is 20% to 50% by weight”

Petitioner fails to demonstrate that Brown discloses the claim elements of limitation [1a]. Pet., 61. Indeed, Petitioner concedes that “Brown does not expressly disclose ‘20% to 50%.’” Pet., 62. (Emphasis omitted). Brown does not provide any description of the reactant amounts in a feedstock for preparing the various commercial jojoba esters (“Floraesters”) described. EX-1008, 8:45-54.

Accordingly, Brown does not disclose the claimed feedstock in which an “amount of hydrogenated jojoba wax esters is 20% to 50% by weight.” See EX-2001, ¶¶101-102.

2. Petitioner’s reliance on back-calculation of reactant weights from the iodine value is not an accurate estimation

As in Ground 1 above, Petitioner’s reliance on the back-calculation of reactant weights from iodine values associated with a product is inaccurate, at least because (1) Petitioner fails to establish that what the actual compositions of the Jojoba esters “products” are and therefore cannot correlate the products’ iodine value to its feedstock; (2) Petitioner’s back-calculation uses an incomplete

equation and relies on the assumption that all jojoba esters resulting from the transesterification are either fully saturated or fully unsaturated, and that the ratios/weights of these wax esters relative to one another are unchanged by the transesterification process, which Petitioner fails to demonstrate is necessarily true; and (3) Petitioner's back-calculation neglects to consider the impact of other factors on the IV of a product. *See supra* §VI.A.2; *see also* EX-2001, ¶¶84-93, 103-104. Accordingly, for the reasons explained above with regard to Ground 1, Petitioner fails to meet the burden of showing that Brown teaches or suggests element [1a] in Ground 4.

3. Brown in view of Sessa does not teach or suggest a feedstock in which the “amount of hydrogenated jojoba wax esters is 20% to 50% by weight”

As in Ground 1 above, Petitioner's alternative ground relying on the disclosure of Sessa fails because Petitioner does not demonstrate that a POSITA would have been motivated to use Sessa's calibration set of jojoba wax ester blends in preparing a feedstock for the preparation of the jojoba esters described in Brown. Petitioner lists the same alleged motivations for the combination of Sessa with Brown as were listed as motivations for the combination of Sessa with Cummings in Ground 1. *Id.*, 64-65; *see also id.*, 33-34. These motivations are no more compelling with regard to the combination of Sessa with Brown than they were in Ground 1. Petitioner provides no analysis as to why a POSITA would

have been motivated to look to or incorporate Sessa's calibration set of jojoba esters for providing "a cocoa butter equivalent" in Brown's feedstock for producing Floraesters, much less why a POSITA would have modified Brown with Sessa's calibration set to achieve the claimed weight percentages. *See* EX-2001, ¶¶105.

Accordingly, Petitioner fails to meet the burden of showing that the combination of Brown and Sessa teaches or suggest element [1a] in Ground 4.

VII. THE FINTIV FACTORS FAVOR DENIAL OF INSTITUTION

Under Section 314(a), the Director has discretion to deny institution. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016). Consistent with Congressional intent, the goals of *Fintiv*, and the interim guidance issued by Director Vidal on June 21, 2022, Cargill asks the Board to exercise such discretion here and deny the Petition because the parallel district court proceedings between the parties are at an advanced stage and trial is scheduled to begin three months before the expected date of a final written decision, substantial overlap in issues and references is possible in the parallel proceeding, and, as described in detail above, the Petition fails to identify prior art having the claimed elements or demonstrate that a POSITA would have combined various unrelated prior art references to arrive at the claimed elements, and accordingly lacks merit.

IPR2020-00019, Paper 11, 6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). A holistic analysis of the *Fintiv* framework favors denial of institution.

Factor 1 (possibility of a stay) is at worst neutral, as neither party has yet requested a stay, and the Board “will not attempt to predict” how a district court might adjudicate a future motion to stay. *Fintiv*, 12; IPR2019-01393, Paper 24, 7 (June 16, 2020) (“*Sand Revolution*”) (informative); IPR2020-01019, Paper 12, 14 (Dec. 1, 2020) (“*Sotera*”) (precedential).

Factor 2 (proximity of trial date to final written decision) favors denial of institution. The district court has set a June 24, 2024 trial date, which would begin three months before the Final Written Decision is likely to be issued, in late September 2024. *See* EX-1021, 11. In addition to the district court’s schedule, the Director’s Guidance has suggested that parties refer to the median time to trial for a district as well as judge specific disposition data when evaluating the *Fintiv* factors. Director’s Guidance at 8-9. The district court proceeding was filed July 26, 2022. *See* EX-1020, 1. The most recent statistics for the District of Delaware show a median time-to-trial of about 33.7 months (*see* EX-2004, 1), which would suggest a trial in May 2025.

If the Board reaches its institution decision within three months of receiving the preliminary response, 35 U.S.C. § 314(b), and issues a final written decision within 1 year of institution, 35 U.S.C. § 314(a)(11), a final written decision would

not issue until around September 27, 2024—3 months after the scheduled trial date. Thus the lapse of time between the likely conclusion of the parallel district court proceedings and the final written decision deadline weighs in favor of denial.

Factor 3 (investment in parallel proceedings) favors discretionary denial.

The investment in the parallel proceedings is significant. In the district court proceeding, the parties have already participated in joint claim construction, the *Markman* hearing has been held, and a *Markman* opinion has issued. EX-2003; EX-2006. Infringement and invalidity contentions have already been served. Before the September 27, 2023 institution deadline, the fact discovery deadline in the district court proceeding will have passed. Thus, the advanced state of the parallel proceedings and the investment in the proceedings by the parties and the court favors denial of institution.

Factor 4 (overlap in issues) favors denial of institution because the Petitioner's asserted grounds in this proceeding are based on references that are also part of its preliminary invalidity contentions in the parallel district court proceeding. *See e.g.*, EX-2005, 9-10 (identifying Sessa, Cummings, *Trans* Isomers 1 and 2, Brown, and Xu), 40 (identifying combinations of the references substantially similar to the Petition grounds). Petitioner's stipulation to not pursue invalidity in court on any grounds based entirely on prior art patents or publications, including the patents and publications raised in the Petition (a *Sotero*

type stipulation), still favors exercising discretionary denial. As the Board noted in its precedential opinion in *Sotera Wireless, Inc. v. Masimo Corporation*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020), what is important is whether the “Petitioner broadly stipulates to not pursue ‘any ground raised *or that could have been reasonably raised.*’” *Id.* at 19 (emphasis in original); *see also* Director’s Guidance at 7-8.

Petitioner’s offer to conditionally litigate one set of invalidity theories in the PTAB and a separate set of invalidity theories in the district court proceeding does little to provide an “inexpensive resolution of every proceeding.” *See* 37 CFR §42.1(b). In fact, Petitioner’s approach simply increases the costs for all parties, creating a duplication of litigation rather than the desired “cost-effective alternative to litigation.” *See* 77 Fed. Reg. 48680-01 (Aug. 14, 2012). Accordingly, this factor favors denial of institution.

Factor 5 (overlap in parties) favors denial of institution because the Petitioner, Patent Owner, and prior patent owner (Floratech) are involved in the parallel proceeding. Under the Board’s precedential *Sotera* opinion, when the parties are the same this factor supports denying institution. *Sotera*, IPR2020-01019, Paper 12 at 19.

Factor 6 (other circumstances) requires denial of institution. As described above, the merits of this Petition are particularly weak. Petitioner has failed to

provide evidence that the prior art raised in any of the four grounds discloses or renders obvious each of the limitations of the independent claim of the '245 Patent. The Petition's lack of merits compel denial of institution.

Accordingly, each of the *Fintiv* factors weighs in favor of discretionary denial of institution. The Board should exercise its discretion to deny institution based on each of these factors, including the reasonably advanced stage of the Related Litigation, the overlap of parties and issues, and the multiple shortcomings of the Petition on the merits.

VIII. THE PETITION SHOULD BE DISCRETIONARILY DENIED UNDER 325(D)

In evaluating the exercise of discretion to deny institution under Section 325(d), the Board uses a two-part framework, which includes:

- (1) determining (a) whether the same or substantially the same art previously was presented to the Office, or (b) whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of the first part of the framework is satisfied, determining whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). Here, much of the same art cited by the Petitioner in the grounds was presented to the Office during prosecution, and Petitioner has not demonstrated any error on the part of the Office

material to the patentability of the challenged claims. Indeed, the '245 patent underwent extensive examination over the more than seven years of pendency of the application, and the '245 patent was allowed following intervention of the technology center director. *See* EX-1002 Part5, 194-207. The extensive examination of the '245 patent, combined with the fact that the majority of the references were before the Office during that examination, weighs in favor of discretionary denial of the Petition under Section 325(d).

At least the references *Trans* Isomers 1 and 2 and Sessa are referred to in the specification of the '245 patent itself and were further cited to the Office in an information disclosure statement. *See* EX-1001, face (56), 12:34-47; EX-1002 Part1, 58; EX-1002 Part2, 58, 84; EX-1002 Part5, 228. Over the course of the more than seven years that the application was pending at the Office prior to issuance, the contents of nearly all of the remaining references were identified to the Office in information disclosure statements. For example, U.S. Patent No. 6,280,746 (of which the Brown reference is a reissue, *see* EX-1007, face) is in the file history of the '245 patent, having been cited as an "x" reference in an ISR appended to the PCT application WO2005/061686 which was provided to the Office in an information disclosure statement. EX-1002 Part1, 129, 163; EX-1002 Part2, 62, 96. The PCT application WO2005/061686 was then used in rejection of the claims by the Office. EX-1002 Part1, 184-192; EX-1002 Part2, 122-143.

Additionally, multiple references attributed to Xu and Brown were identified to the Office in information disclosure statements and subsequently considered. EX-1002 Part1, 57, 59; EX-1002 Part2, 57, 59, 83, 85; EX-1002 Part5, 227-229.

While Cummings was not cited to the Office during the examination of the '245 Patent, its relevant content is substantially similar to the content of *Trans Isomers 2*. Compare EX-1004, 2 (describing OSI values of jojoba esters) and Fig. 3 (listing iodine values and melting points of jojoba esters) with EX-1006, Table 2 (listing melting point, iodine value and OSI values of jojoba esters). The similarity and substantial overlap in content between Cummings and *Trans Isomers 2* is unsurprising, as the two references were both generated by Floratech company and share an author (Robert Kleiman). See EX-1004, 1; EX-1006, 1. Accordingly, nearly all of the references, or the substantive content of the references, cited in Petitioner's grounds were before the Office during the years of examination of the '245 patent, and Petitioner fails to provide any error on the part of the Office with respect to the consideration and treatment of the references. Because the references cited in the grounds, or their substantive content, were before the Office during the examination of the '245 patent, the Board should exercise its discretion to deny institution of the Petition.

IX. CONCLUSION

For the foregoing reasons, Patent Owner requests that the Board deny institution on Grounds 1-4 of the Petition on the merits, and thus decline to institute *inter partes* review of the '245 patent.

Respectfully submitted,

Date: June 27, 2023

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CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response totals 9,963, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

Date: June 27, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on June 27, 2023, a complete and entire copy of this Patent Owner's Preliminary Response and its supporting exhibits were provided via email, to the Petitioner by serving the email correspondence addresses of record as follows:

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