

Filed on behalf of Petitioner

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CARGILL, INCORPORATED
Petitioner

v.

BUNGE LODERS CROKLAAN USA, LLC
Patent Owner

Case No. IPR2024-01360
Patent 7,645,473

**PETITIONER'S REQUEST FOR REHEARING
OF INSTITUTION DENIAL UNDER 37 C.F.R. § 42.71(d)**

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. THE DECISION OVERLOOKS THE APPROPRIATE LEGAL STANDARD FOR HINDSIGHT BIAS.....	3
III. THE DECISION MISAPPREHENDS OR OVERLOOKS THE DISCLOSURES IN THE PETITION OF THE IODINE VALUES OF PALM STEARIN AND SOYBEAN OIL USED TO COMBINE PETRAUSKAITE WITH KNOWLEDGE GENERALLY AVAILABLE IN THE ART.....	6
IV. THE DECISION MISAPPREHENDS THE LAW ON OBVIOUSNESS WHEN THERE ARE A FINITE NUMBER OF PREDICTABLE SOLUTIONS FOR OBTAINING TRIGLYCERIDE VALUES.....	13
V. CONCLUSION.....	15
CERTIFICATE OF SERVICE	

I. INTRODUCTION

On March 19, 2025, the Board issued a Decision declining to institute *Inter Partes* Review of U.S. Pat. No. 7,645,473 (“the ’473 patent”). IPR2024-01360, Paper 16 (“Decision”), 2. The Board reviews such decisions for abuse of discretion. 37 C.F.R. § 42.71(c). An abuse of discretion occurs when a decision makes a legal error, clear factual error, or clearly erroneous assessment of the evidence. *AdjustaCam, LLC v. NewEgg, Inc.*, 861 F.3d 1353, 1358 (Fed. Cir. 2017). Petitioner respectfully requests that the Board reconsider its Decision and institute review of the challenged claims.

The challenged claims encompass old blends of vegetable oils, baked and iced confectionery products comprising the same, and methods for using the same to make said baked and iced confectionery products. Petition, 4-5. The claims recite the triglyceride profile of the blends in weight percentage ranges as opposed to mole percentages as described in the *Petrauskaite* (EX1007) relied upon in the Petition. *Id.*, 14-17. There is nothing patentable about characterizing obvious blends by their triglyceride profile in weight percentage ranges.

Yet, the Decision adopts Patent Owner’s incorrect argument that the combination of *Petrauskaite* with knowledge generally available in the art was based on hindsight reconstruction. Decision, 16-17. Respectfully, it is submitted that the Preliminary Response diverted the panel into misapprehending the basis for the Petition, leading to a Decision denying institution that overlooked the relevant law

and overlooked the evidence of obviousness. Prelim. Resp., 21-28, 36, 39. The Decision misapprehends and/or overlooks the law and evidence for the following reasons.

First, the Decision overlooks the legal standards for hindsight bias. No knowledge gained from the '473 patent was relied on by Petitioner in its obviousness challenges. The '473 patent simply does not disclose the well-known calculations relied upon to convert mole percentages to weight percentages of the triglycerides, or even the blend of vegetable oils relied upon by the challenge. To be clear, converting from one standard system of measurement to another standard does not contribute to hindsight.

Second, the Decision also misapprehends or overlooks the significance of the specific vegetable oil iodine values (IV) as outlined in the Petition and Dr. Alejandro Marangoni's Declaration. Decision, 18. As explained in the Petition and supported by the accompanying Declaration of Dr. Marangoni, Petrauskaite (the primary reference) disclosed the IVs of its soybean oil and palm stearin starting materials that provided specific motivation to seek out vegetable oils with similar IVs. Petition, 6-9; EX1003, ¶¶33-38. The highlighting makes clear that Petitioner intended to select from the knowledge in the art a palm stearin and a soybean oil having IVs similar to those disclosed in Petrauskaite. Petition, 8-9. It makes logical

sense to a POSITA to select components whose IVs were similar to and not further distant from Petrauskaite.

Third, the Board misapprehends the evidence when it dismissed one of the only two finite options disclosed in Petrauskaite for determining the mole percentage of a triglyceride. Decision, 19. Petitioner used the actual experimental data as opposed to theoretical calculated values based upon a hypothesis. The hypothetical calculation did not, and could not, take into account real world factors effecting the final yield results. Preferentially selecting real-world experimental results is also not hindsight.

For at least the above reasons, and as more fully addressed below, Petitioner respectfully requests that the Board reconsider its Decision and institute review of the challenged claims.

II. THE DECISION OVERLOOKS THE APPROPRIATE LEGAL STANDARD FOR HINDSIGHT BIAS

The Decision states that “Petitioner’s representation of the problem as merely converting Petrauskaite’s disclosed mol% of triglycerides into wt% of triglycerides with simple calculations represents a form of prohibited reliance on hindsight.” Decision, 14 (citing *Mintz v. Dietz & Watson, Inc.* 679 F.3d 1372, 1377 (Fed. Cir. 2012) (“hindsight to use the invention to define the problem the invention solves”)). However, “[a]ny judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge

which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper." *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971). Missing from the Decision is what knowledge was gleaned from the '473 patent that Petitioner relied upon to arrive at the claimed invention. Here, the art provided the guidance, not the '473 patent. Examples of how the Board misapprehended the law are provided below.

First, the '473 patent does not disclose how to convert Petrauskaite's disclosed mol% of triglycerides into wt% of triglycerides. Such was done with, as the Decision states, simple calculations well known to those of ordinary skill in the art. Decision, 14. Tellingly, the Decision and Patent Owner do not contest whether a POSITA could have performed the calculations in the relevant time frame without the teachings of the '473 patent.

Second, the '473 patent does not provide any information helpful for a POSITA, let alone the Petitioner, to determine which soybean oils or palm stearin fractions a POSITA should call upon to arrive at the challenged claims. In fact, the '473 patent *does not* recite soybean oil at all. *See* EX1001 generally. And, the only palm stearin mentioned in the patent is identified with an IV of 35. *Id.*, 4:51, 5:45, 5:56, 6:63, and 7:14. In contrast, Petrauskaite specifically discloses a soybean oil IV of 134.3 and a palm stearin IV of 26.0, at Table 1. EX1007, 490; *see also*

EX1003, ¶33; Petition, 12. Thus, the '473 patent does not provide any information related to soybean oil or palm stearin fractions that the Petitioner would have found helpful or relied upon for hindsight reconstruction of the challenged claims.

Third, the Decision states that “[a]ccording to the '473 patent, consumers desire food products low in both trans and saturated fatty acids, and modifying triglyceride compositions to achieve this is complex because the component fatty acids, particularly fatty acids, affect the functional and organoleptic properties.” Decision, 4. However, the Petition relies solely on the blends of soybean oil and palm stearin disclosed in Petrauskaite for the desire to make a blend of soybean oil and palm stearin. *See, e.g.*, Petition, 14-31. Such blends addressed “a direct relationship between TFAs [trans fatty acids] and an increased risk for coronary heart disease [such that] the food industry sought to replace partially hydrogenated oils with other fat sources to lower trans content.” Petition, 4-5 (citing EX1016, Abstract and EX1015, 396). The Decision and Patent Owner do not contest whether Petrauskaite disclosed *trans*-free fats of blends of palm stearin and soybean oil or the fact that such blends were not disclosed in the '473 patent.

For each of the above reasons, the Decision misapprehends the law of obviousness and overlooks the missing teachings in the '473 patent. The fact is neither the equations used nor the blends identified are disclosed in the '473 patent. Further, the disclosure of the desired blends came solely from Petrauskaite and not

the '473 patent. EX1007, Tables 1-2; Petition, 6, 14. As a result, the Decision is in error because there is nothing that establishes that Petitioner relied upon knowledge gleaned from the '473 patent to arrive at the challenged claims.

III. THE DECISION MISAPPREHENDS OR OVERLOOKS THE DISCLOSURES IN THE PETITION OF THE IODINE VALUES OF PALM STEARIN AND SOYBEAN OIL USED TO COMBINE PETRAUSKAITE WITH KNOWLEDGE GENERALLY AVAILABLE IN THE ART

The Decision states that “Petitioner’s reasoning says no more than that a skilled artisan, once presented with Petrauskaite and prior art knowledge, ‘would have understood that they *could* be combined, but that is not enough’” and concluding that “[o]n this record, we determine that Petitioner fails to show that ‘a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.’”

Decision, 14, 17. In coming to this conclusion, the Decision states that

Petitioner then employs in its calculations data for only one of twelve examples, with no explanation of why the particular set was selected. *See id.* Here is another example of impermissible hindsight reconstruction of the invention.

Id.

The Decision further states:

No explanation of the meaning or importance of an iodine value was provided in the Petition. See generally Pet. Dr.

Marangoni, Petitioner's declarant, never mentions an iodine value as having any significance in determining what data was used to show knowledge generally available in the art of fatty acid wt%. *See generally* Ex. 1003.

Decision, 18; *see also id.*, 16 ("neither Petitioner nor its declarant, Dr. Marangoni, articulates a reason why one of ordinary skill in the art would look to one particular example in Deffense, rather than any of the other eleven examples or any other available references as the only source of 'knowledge generally available in the art' for wt% of fatty acids in 100% palm stearin."). However, the Decision misapprehends or overlooks the relevant disclosures in the Petition for at least four reasons.

First, as discussed above, Petitioner did not engage in hindsight reconstruction. Rather, Petitioner relied on the knowledge and skill of a POSITA. Again, Petrauskaite describes generating zero-*trans* interesterified fat blends and comparing the same with low- and high-*trans* commercial food fats for the purpose of their potential use in commercial shortenings, margarines, and confectionary fat basestocks. EX1008, Title; Petition, 6. These interesterified fat blends were generated with starting materials of soybean oil having an IV of 134.3 and a palm stearin fraction having an IV of 26.0 which provided the motivation to select a soybean oil and a palm stearin having similar IV values. EX1007, 490, Table 1; Petition, 6.

As stated by the Supreme Court, “rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). And, the Federal Circuit recognized that courts must “consider common sense, common wisdom, and common knowledge in analyzing obviousness.” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016). Here, it was common sense for a POSITA, and for Petitioner, to select known soybean oils and palm stearins that have the closest physical properties to those components disclosed in Petrauskaite. In essence, choosing components with the closest physical properties can be seen as a form of understanding the meaning of the teachings of Petrauskaite and the recreation of the blends disclosed therein. There was no reason for a POSITA to select components having IVs further distant from those disclosed in Petrauskaite, the applied prior art.

Second, the Board was directed to Petrauskaite’s IV disclosures in the Summary of the Applied Prior Art sections of the Petition and Dr. Marangoni’s Declaration. EX1003, ¶33; Petition, 6 (copied and highlighted below).

C. Summary of the Applied Prior Art

1. “Petrauskaite”

Petrauskaite describes the physical and chemical properties of *trans*-free fats produced by chemical interesterification of vegetable oil blends. EX1007, Title. In particular, “[f]at blends, formulated by mixing a highly saturated fat (palm stearin or fully hydrogenated soybean oil) with a native vegetable oil (soybean oil) in different ratios from 10:90 to 75:25 (wt%), were subjected to chemical interesterification reactions.” *Id.*, Abstract. “Starting and interesterified blends were investigated for triglyceride composition, solid fat content, free fatty acid content, and *trans* fatty acid (TFA) levels.” *Id.* Petrauskaite relies on a soybean oil having an iodine value (IV) of 134.3 and a palm stearin having an IV of 26.0. *Id.*, Table 1; EX1003, ¶33.

Thus, the Petition explicitly highlighted that Petrauskaite already provided independent motivation to combine and interesterify soybean oil and palm stearin with specific IVs in particular fat blend ratios.

As discussed in the Petition and Dr. Marangoni’s Declaration, the motivation to look for such similar soybean oils and palm stearins begins with Table 1 of Petrauskaite because “Petrauskaite discloses the claimed interesterified fat blends” and “the wt% of Petrauskaite’s fat blends can easily be calculated based on the generally available prior art knowledge of fatty acid compositions of palm stearin and soybean oil.” Petition, 14-15 and 37-38; EX1003, ¶¶178-183. The Board was also directed to the specific soybean oil of Neff disclosed in Table 1 having an IV of

132.6 in the Summary of the Applied Prior Art sections of the Petition and Dr. Marangoni's Declaration. EX1003, ¶37; Petition, 8 (copied and highlighted below, red box was included in the original Petition). This specific soybean oil of Neff has an IV similar to that of the soybean oil disclosed in Petrauskaite.

TABLE 1
Calculated Oxidizability (OX)^a, Fatty Acid Composition^b and Ratios of Linoleic (L) and Linolenic (Ln) Acid to Oleic (O) Acid for Soybean Oil (SBO), Palm Olein (PO) and Their Blends and Interesterified Blends

	OX	Fatty acid area percent							L/O	Ln/O
		14:0	16:0	18:0	18:1	18:2	20:0	18:3		
SBO	0.679	—	10.0	4.2	25.4	53.4	—	7.0	2.10	0.28

The wt% of the various saturated and unsaturated fatty acids of a soybean oil having an IV of 132.6 ("SBO") are listed in Table 1 (see red box). See also EX1003, ¶37.

Likewise, the Board was directed to the specific palm stearin of Deffense disclosed in Table IV having an IV of 24.9 in the Summary of the Applied Prior Art sections of the Petition and Dr. Marangoni's Declaration. EX1003, ¶38; Petition, 8 (copied and highlighted below, red box was included in the original Petition). This specific palm stearin of Deffense has an IV similar to that of the palm stearin disclosed in Petrauskaite.

TABLE IV			
Alfa Laval Oleins and Stearins from Single Stage Fractionation			
Palm oil	Indonesia		Crude
Origin	Stearin	Olein	Stearins
Fraction	230	223-2	
Code			
Iodine value (GLC)	24.9	58.0	28.0
Yield (%) (calc.)	20	80	17
Slip melting point (C)	55.9	19.0	55.3
SFG (%) by pulsed NMR			
5 C	92.0	49.2	91.4
10 C	92.1	32.7	90.0
15 C	90.8	9.2	84.9
20 C	86.6	—	79.8
25 C	78.0		71.5
30 C	68.2		61.6
35 C	57.0		51.8
40 C	46.0		41.9
45 C	35.8		32.2
50 C	25.0		22.5
55 C	9.3		7.9
Fatty acids (% wt as Me)			
C 16:0	68.8	40.0	66.2
C 18:0	5.1	4.3	4.8
C 18:1	19.1	40.8	21.6
C 18:2	4.5	12.3	5.0
FFA (mol wt 256) (%)	2.2	3.9	2.2
Diglyceride (% wt)	3.6	6.5	2.8
Triglyceride (% wt)	96.4	93.4	97.2
Triglyceride composition (area %) by HPLC			
S ₃	46.1	.2	42.0
S ₂ U	43.9	50.9	41.4
SU ₂	9.2	43.2	14.2
U ₃	.8	5.7	2.4
Cloud point (C)	—	9.8	—
Cold test at 22 C (days)	—	4	—

Thus, the Petition highlighted that soybean oils and palm stearins having IVs similar to those referenced in Petrauskaite were part of the general knowledge in the art, *e.g.*, the soybean oil of Neff disclosed in Table 1 and the palm stearin fraction of Deffense in Table IV.

Choosing the soybean oil of Neff disclosed in Table 1 having an IV of 132.6 and the palm stearin fraction of Deffense having an IV of 24.9 were clear choices for providing interesterified fat blends that achieve the requirements of

Petrauskaite's commercially useful shortenings, margarines, and confectionary fat basestocks based on the teachings of Petrauskaite and not the '473 patent.

Third, it was not the Petitioner that sought to highlight the "twelve sets of data on fatty acid wt% of eighty-two samples from industrial plants in southeast Asia" for various palm stearins in the prior art. Decision, 17. This was a strawman argument raised by the Patent Owner and adopted in the Decision. Prelim. Resp., 21-28, 36, 39; Decision, 16-17. Nowhere in the Petition is there a discussion of these twelve examples of palm stearin. Nor should such a discussion have been presented in the Petition, as they are not the closest prior art. This is because the other eleven examples of palm stearin have IVs of 28.0, 34.6, 35.4, 35.9, 39.4, 40.4, 28.6, 40.1, 40.3, 45.2, 49.9—further departing from the Petrauskaite palm stearin IV of 26.0. *See, e.g.*, Tables III-IV and VIII of EX1014.

Fourth, it cannot be disputed that Petrauskaite provides motivation to make blends of soybean oil and palm stearin. If it is the Board's conclusion that Petrauskaite provided motivation to a POSITA to choose any of the palm stearins disclosed in Deffense, then the challenged claims are still obvious in view of the combination of Petrauskaite and the general knowledge in the art. The challenged claims encompass old blends of vegetable oils merely reciting their triglyceride profile in weight percentage ranges. Petition, 4-5. As demonstrated in the Petition, at least one of such obvious combinations results in a blend meeting all of the

limitations of the challenged claims. Having to choose one of twelve palm stearins from Deffense is far from an infinite number of choices, particularly when there is guidance in Petruskaite as to the IV of the palm stearin used to make its blends. As discussed in *KSR*, when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a POSITA has good reason to pursue the known options within his or her technical grasp. *KSR* at 421. There is no evidence of unexpected results and there is no evidence of any other secondary consideration. Petition, 50. The triglyceride profile in weight percentage is not an unexpected property of an obvious blend of vegetable oils having known mole percentages of its respective components.

For all of the foregoing reasons, the Decision misapprehended or overlooked the disclosures in the Petition of the IVs of palm stearin and soybean oil which provided the motivation to combine Petruskaite with knowledge generally in the art, *e.g.*, Deffense and Neff.

IV. THE DECISION MISAPPREHENDS THE LAW ON OBVIOUSNESS WHEN THERE ARE A FINITE NUMBER OF PREDICTABLE SOLUTIONS FOR OBTAINING TRIGLYCERIDE VALUES

The Decision also improperly accords excessive weight to Petruskaite's theoretically calculated triglyceride values over the experimentally determined triglyceride values of Petruskaite's 40:60 and 50:50 interesterified fat blends. Decision, 19.

Again, when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a POSITA has good reason to pursue the known options within his or her technical grasp. *KSR* at 421. And, if this leads to the anticipated success, it is likely that the product is not of innovation but of ordinary skill and common sense. *Id.*

Here, the theoretically calculated triglyceride values and the experimentally determined triglyceride values of Petrauskaite's 40:60 and 50:50 interesterified fat blends constitute a finite number (2) of interesterified fat blends disclosed by Petrauskaite. *See, e.g.,* Petition, 14. Further, the experimentally derived interesterified fat blends of Petrauskaite did lead to the anticipated success of providing commercially useful food products. For example, the experimentally derived interesterified 40:60 and 50:50 fat blends demonstrated acceptable N_{10} , N_{20} , and N_{30} values that relate to solid fat content (SFC), which in turn predicts the plasticity and usefulness of such fat blends as commercial shortenings and stick-type margarines. Petition, 12, 33-35; EX1007, FIG. 1.

As such, the Decision erred in dismissing Petrauskaite's experimentally derived interesterified fat blends outright. Rather, Petrauskaite's experimentally derived interesterified fat blends should have been evaluated as one of a finite number of solutions that a POSITA would have pursued. Moreover, none of the finite solutions of Petrauskaite were derived from the '473 patent.

V. CONCLUSION

For the reasons stated, Petitioner respectfully requests reconsideration and that trial be instituted on all Grounds stated in its Petition.

Date: April 17, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 17th day of April, 2025, a true and correct copy of the foregoing **PETITIONER'S REQUEST FOR REHEARING OF INSTITUTION DENIAL** was served via electronic mail to Patent's Owner's counsel as follows:

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