

Filed on behalf of Petitioner

By: Todd R. Walters, Esq. (todd.walters@bipc.com)
Mythili M. Markowski, Ph.D. (mythili.markowski@bipc.com)
James T. Moore (james.moore@bipc.com)
BUCHANAN INGERSOLL & ROONEY PC
1737 King Street, Suite 500
Alexandria, Virginia 22314
Main Telephone (703) 836-6620
Main Facsimile (703) 836-2021

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 REPLY TO PATENT OWNER'S
PRELIMINARY RESPONSE**

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I. INTRODUCTION

This Reply is responsive to Patent Owner’s Preliminary Response (Paper 11, “POPR”). The Board authorized this Reply. EX3002.

II. PETITIONER DID NOT ARGUE INHERENCY

Patent Owner (“PO”) asserts that “Ground 1 ... *functionally relies* on an inherency position.” POPR, p.2. Petitioner intentionally did not argue this concept. This is a strawman PO improperly raised to knock down. Petitioner’s Grounds are based on obviousness, not inherency. Petition (“Pet”), p.3.

Petitioner noted that “Petrauskaite relies on a soybean oil having an iodine value (IV) of 134.2 and a palm stearin having an IV of 26.0.” *Id.*, p.6. Petitioner’s expert relied on prior art disclosures of soybean oil and palm stearin that have similar (but not identical) IV values. As PO correctly noted, Petitioner relied on knowledge in the art “to understand Petrauskaite’s components better.” *Id.*, p.37; *see also* POPR, p.32. Thus, Petitioner’s obviousness Grounds were founded on the *understandings* of a POSITA—aspects falling outside of inherency.

III. THE CLAIMED INVENTION DOES NOT REQUIRE A SPECIFIC INTERESTERIFICATION PROCESS

PO argues that “[a] critical distinction between Petrauskaite and the ’473 Patent lies in *when* interesterification is performed.” POPR, p.19. However, the challenged claims do not require an interesterification process.

IV. VARIABILITY OF FATTY ACID VALUES DOES NOT REFUTE OBVIOUSNESS

PO argues that “[t]he known variability in palm stearin and soybean oil

composition renders it *impossible* for Petitioner to show that Petruaskaite *necessarily* discloses a composition having the claimed wt% values.” POPR, pp.30-31. However, variability of fatty acid values does not refute the obviousness of the claims for the following reasons.

One, PO states that “Petitioner offers no explanation for choosing certain values [] while ignoring others [].” POPR, pp.26-27. But, the “IV value is determined by adding proportions of the wt% of all triglycerides comprising unsaturated fatty acids that make up [an oil],” *i.e.*, the IV allows a POSITA to understand the type and quantity of fatty acids that make up a particular oil. Pet., pp.7-8. Petitioner merely selected an obvious composition. While PO cites numerous palm stearins in Deffense having an IV of 44.3, 46.7, 47.8, 44.9, 48.7, 39.4, 40.4, 28.6, 40.1, 24.9, 28.0, and 34.6 (highlights in Tables I-IV of EX1014 at POPR, 23-26), PO fails to persuasively explain to the Board why a POSITA would have considered any palm stearin significantly differing in IV from Petrusakite’s exemplary composition. This is a ***critical omission*** and raises a crucial question of fact for trial.

Two, PO argues Petitioner did not conduct “a proper common knowledge analysis; it is an attempt to combine [Neff and Deffense] with Petrusakaite without demonstrating a motivation to do so.” POPR, p.3. PO is wrong. Petitioner argued that a “POSITA would have looked to old and contemporary references for the

fatty acid distributions of palm stearin and soybean oil to determine the corresponding wt% of Petrauskaite's fat blends because this information was readily available and well-known in the art", *i.e.*, a POSITA would have looked to art disclosing soybean oils having an IV of ~134.2 and palm stearins having an IV of ~26.0 because these are the oils disclosed in Petrauskaite. Pet., 38. Indeed, "The Lipid Handbook" states that "[f]atty acid compositional data [were] easily accessible for the majority of common oils and fats" as of at least the mid-1990s. *Id.* Neff and Deffense are evidence of that statement.

V. PETITIONER'S CALCULATIONS SUPPORT OBVIOUSNESS

PO argues that Dr. Marangoni's "reliance on experimental values (rather than Petrauskaite's calculated values based on Random Distribution Hypothesis) ... weakens his analysis [such that] a POSITA would not have arrived at the claimed invention by relying on the teachings of Petrauskaite." POPR, p.47; *see also id.*, pp.31-32. PO raises additional questions of fact for the following reasons.

One, Petrauskaite provided both experimental triacylglyceride ("TAG") and theoretical TAG values for its fat blends. Despite a single reference, it is unclear how the theoretical values were determined. EX1007, p.490 ("Random TAG distributions were calculated from FA compositional data [AOCS Official Method Ce 5b-89 (18)]."). Because the theoretical calculation methodology is unclear, Petitioner correctly relied on experimental data. It is a stretch to assert that Petrauskaite's experimental example is not a good disclosure that a POSITA would

have logically considered.

Two, relying solely on Table 2, PO argues that “[i]nteresterification is not completely random, as demonstrated in Petrauskaite itself.” POPR, p.43. However, PO’s argument was previously negated in the Petition. Petrauskaite discloses a long duration of catalyst/fat blend incubation for complete interesterification—much longer than needed. Pet., p.39; EX1007, p.490. Further, it was known that S₂U TAG values of 1/3 SUS and 2/3 SSU are consistent with interesterified oils that have undergone complete chemical interesterification. Hustedt notes that “formulas for calculating the random distribution of fatty acids” after interesterification had been developed *based on experimentally derived* data. Pet., p.39; *see also id.*, p.40 (“random distribution is most frequent because in a liquid phase the normal ester rearrangement or esterification of acids with glycerine proceeds at random with the *attainment of an equilibrium* composition.” Further, Sreenivasan at 800 explains that “[Prior art] studies have confirmed that ... at *equilibrium* the postulated statistical distribution of fatty acid is achieved.” *Id.*, p.41. Petrauskaite’s incubation period would have resulted in complete random interesterification through attainment of equilibrium. Moreover, Petrauskaite refers to its experimental compositions as “randomized.” EX1007, p.491 (“The altered TAG composition of the *randomized* fat blends was also reflected in the capillary melting point and SFC.”), (“SFC curves of the *randomized* fat blends

were changed completely.”), (“***Randomized*** mixtures of FHSBO and SBO (30:70) or Pst and SBO (40:60) produced basestocks that are suitable for shortening oil formulations.”). Thus, there is no evidence that suggests that the experimental blends did not undergo complete random interesterification.

Three, PO argues that Dr. Marangoni’s “calculations are based on contradictory assumptions and incorrect data, undermining their reliability” and “[w]hen calculations are done that follow Petitioner’s assumption and utilize express disclosures in Petrauskaite, they yield values **outside** the ranges of claim 1.” POPR, p.43. PO’s second strawman relies on Petrauskaite’s theoretical TAG values. *Id.*, pp.45-46. However, Petitioner did not rely on Petrauskaite’s theoretical values. That was never one of Petitioner’s assumptions. Rather, Petitioner relied on calculations from the experimental fat blends which do support obviousness because the wt% of TAG species from such blends meet the claimed limitations. Pet., pp.14-31.

VI. CONCLUSION

For the foregoing reasons, Petitioner submits that PO erred in its POPR and that Petitioner has shown a likelihood of success on the merits. Therefore, the Petition should be granted, and the Board should institute trial.

Date: January 28, 2025

Respectfully submitted,

/Todd R. Walters/

Todd R. Walters, Esq. (Reg. 34,040)
BUCHANAN INGERSOLL & ROONEY PC
1737 King Street, Suite 500
Alexandria, Virginia 22314
Tel. (703) 838-6556 / Fax (703) 836-2021
todd.walters@bipc.com
Counsel for Petitioner

APPENDIX A—LIST OF EXHIBITS

EXHIBIT	DESCRIPTION
1001	U.S. Patent No. 7,645,473, issued on January 12, 2010 to A. Herzing <i>et al.</i> (“the ’473 Patent”)
1007	Petrauskaite, V., W. De Greyt, M. Kellens, and A. Huyghebaert. “Physical and Chemical Properties of Trans-Free Fats Produced by Chemical Interesterification of Vegetable Oil Blends.” <i>Journal of the American Oil Chemists' Society</i> , vol. 75, no. 4 (April 1998): 489-493.
1014	Deffense, E. “Fractionation of Palm Oil.” <i>Journal of the American Oil Chemists' Society</i> , vol. 62, no. 2 (February 1985): 376-385.
3002	Email from Patent Trial and Appeal Board dated January 27, 2025

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 28th day of January, 2025, a true and correct copy of the foregoing **PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE** was served via electronic mail to Patent's Owner's counsel as follows:

Tate L. Tischner
Bryan C. Smith
Troutman Pepper Hamilton Sanders LLP
70 Linden Oaks, Suite 210
Rochester, New York 14625
Tate.Tischner@Troutman.com
Bryan.Smith@Troutman.com

Date: January 28, 2025

/Todd R. Walters/
Todd R. Walters, Esq. (Reg. 34,040)
BUCHANAN INGERSOLL & ROONEY PC
1737 King Street, Suite 500
Alexandria, Virginia 22314
Tel. (703) 838-6556 / Fax (703) 836-2021
todd.walters@bipc.com
Counsel for Petitioner