Slip Op. 25-105

UNITED STATES COURT OF INTERNATIONAL TRADE

BASF CORPORATION,

Plaintiff,

v.

UNITED STATES,

Defendant.

Before: Lisa W. Wang, Judge

Consol. Court No. 12-00422

PUBLIC VERSION

OPINION AND ORDER

[Denying Plaintiff's motion for summary judgment and granting Defendant's cross motion for summary judgment.]

Dated: August 13, 2025

Frederic D. Van Arnam, Jr., Barnes, Richardson & Colburn, LLP, of New York, NY, for Plaintiff BASF Corporation. With him on the brief was Ashley J. Bodden.

Luke Mathers, Trial Attorney, U.S. Department of Justice, Civil Division, Commercial Litigation Branch, of New York, NY, for Defendant United States. With him on the brief were Yaakov M. Roth, Acting Assistant Attorney General, Patricia M. McCarthy, Director, and Justin R. Miller, Attorney-In-Charge. Of Counsel on the brief was Michael A. Anderson, Office of the Assistant Chief Counsel, International Trade Litigation, U.S. Customs and Border Protection.

Wang, Judge: Before the court are cross motions for summary judgment. Pl.'s Mot. for Summ. J. ("Pl.'s Mot."), ECF No. 70; Def.'s Cross Mot. for Summ. J. and Resp. in Opp. to Pl.'s Mot. for Summ. J. ("Def.'s Cross Mot."), ECF No. 75. BASF Corporation ("Plaintiff") challenges U.S. Customs and Border Protection's ("Customs") classification of Betatene® 7.5% N ("Betatene" or "imported merchandise") under subheading 2106.90.99 of the Harmonized Tariff Schedule of the United States ("HTSUS"), arguing that the proper classification of Betatene is subheading 2936.90.01. Pl.'s Mot. at 1. The

United States ("Defendant") cross moves for summary judgment, arguing that Betatene is properly classified under subheading 2106.90.99. Def.'s Cross Mot. at 2.

For the following reasons, Plaintiff's motion for summary judgment is denied and Defendant's cross motion for summary judgment is granted.

BACKGROUND

I. Procedural Background

Plaintiff was the importer of record for Betatene in entry number W66-0052750-2 on March 8, 2011, entry number 916-2183637-7 on June 2, 2011, entry number W66-0054301-2 on December 9, 2011, and entry number W66-0054977-9 on January 28, 2012. Summons, ECF No. 1; see also Summons, ECF No. 1, Court No. 13-00109. Customs liquidated the imported merchandise under subheading 2106.90.99. Pl.'s Statement of Undisputed Material Facts ("Pl.'s SUMF") ¶ 6, ECF No. 71. Plaintiff timely filed protests concerning Betatene on July 24, 2012, August 14, 2012, February 12, 2013, and February 21, 2013. Summons, ECF No. 1; see also Summons, ECF No. 1, Court No. 13-00109. Customs denied the protests on August 13, 2012, August 16, 2012, and March 4, 2013. Summons, ECF No. 1; see also Summons, ECF No. 1, Court No. 13-00109.

On December 27, 2012, Plaintiff commenced this action. Summons, ECF No. 1. On March 19, 2013, Plaintiff commenced a second action in this court. Summons, ECF No. 1, Court No. 13-00109. These cases were consolidated on February 7, 2022. ECF No. 29. Plaintiff filed its consolidated complaint on March 7, 2022, requesting that the court order: (1) reliquidation of the imported merchandise under HTSUS subheading 2936.90.01; and (2) a refund of excess duties paid, with interest. Consol. Compl., ECF No. 33.

II. Description of the Imported Merchandise

Betatene "is a beta-carotene formulation consisting of beta-carotene carotenoid mixture." Pl.'s SUMF ¶ 7; see also Def.'s Resp. to Pl.'s Statement of Additional Undisputed Material Facts ("Def.'s Resp. to Pl.'s SUMF") ¶ 7, ECF No. 75-1. Beta-carotene is both a carotenoid and a form of provitamin A, and "is the active ingredient in [Betatene]." Pl.'s SUMF ¶¶ 8–9, 14. Beta-carotene "is unstable and prone to oxidative degradation and decomposition and is potentially pyrogenic if exposed to oxygen." Id. ¶ 16. Oxidization makes beta-carotene "ineffective for use as provitamin A or as a colorant." Id. ¶ 17. Thus, beta-carotene must "be stabilized to be used commercially as a provitamin or to color," and one way to do so "is to process it with [ ] other inert ingredients." Id. ¶¶ 18–19.

The beta-carotene in Betatene is "derived from the alga Dunaliella salina, dissolved in soybean oil and enrobed in a protective matrix of gelatin and sucrose, with ascorbyl palmitate and tocopherols as antioxidants, and with silicon dioxide as an anti-caking agent and flow aid." Id. ¶ 7. The alga Dunaliella salina is "grown in open air, saltwater lagoons in Australia using sunlight and consuming carbon dioxide," and is "then harvested from the lagoons, and the beta-carotene is extracted." Id. ¶¶ 24–25. Thereafter, "[i]n Australia, the beta-carotene is [ ] dissolved in soybean oil, resulting in a concentrated oily dispersion consisting of approximately 30 percent beta-carotene particles and 70 percent oil." Id. ¶ 26. The soybean oil is a solvent which "functions as a carrier for the beta-carotene particles from this point on, through the formulation of the imported merchandise, and through digestion by the human body." Id. ¶ 27. The soybean oil "protects and preserves" the beta-carotene "from oxygen exposure during the transportation and formulation steps," while also rendering beta-carotene

"bioavailable to humans as provitamin A or for use to impart color to foodstuffs." Id. ¶¶ 28–29.

After this process concludes in Australia, the imported merchandise "is shipped from Australia to Japan to be microencapsulated." Def.'s Statement of Additional Undisputed Material Facts ("Def.'s SUMF") ¶ 6, ECF No. 75-2. Specifically, "the beta-carotene oily dispersion is transported to a tolling facility in Japan where it is formulated into microspheres, also known as beadlets." Pl.'s SUMF ¶ 30. The microencapsulation process involves the introduction of mixed tocopherols "into the soybean oil/beta carotene suspension," which "function to help stabilize the beta-carotene by preventing it from oxidizing." Id. ¶ 31. The mixture is then heated and, "[a]t the same time, in a second phase using heat and shear force, [ ] gelatin is dissolved with sucrose and the antioxidant ascorbyl palmitate in water." Id. ¶¶ 31–32. Both the "ascorbyl palmitate and mixed tocopherols stabilize the beta-carotene by preventing it from oxidizing." Id. ¶ 39.

Thereafter, a homogenization phase combines the two phases to "creat[e] an emulsion of all the ingredients." Id. ¶ 33. This "emulsion is then sprayed into a spray cooler tower," which "results in the creation of liquid microspheres, or droplets, of the emulsion, with each microsphere containing a proportional amount of the ingredient." Id. ¶ 34. The droplets then thaw and are "dried using fluidized bed dryers," where "[a]ir flow and temperature are controlled to dry the individual droplets, and to cause the gelatin and sucrose in each droplet to combine into solid beadlets measuring 240–300 micrometers in width." Id. ¶ 35. The "[s]ucrose and gelatin harden to create a protective matrix that embeds the oily beta-carotene and antioxidant droplets." Id. ¶ 36. Also introduced during the drying phase is silicon dioxide, which "functions as an anti-caking

agent and flow aid, keeping the individual beadlets from agglomerating to each other or sticking to production equipment." Id. ¶ 40.

The process of microencapsulation is "expensive," and "provides stabilization, emulsification, and 'mechanical strength' for tableting." Def.'s SUMF ¶¶ 15, 20. Betatene's gelatin-sucrose matrix "prevent[s] beadlet cracking due to external stresses" caused by "direct compression on tableting machines." Id. ¶ 24. The finished product—Betatene after microencapsulation—"is guaranteed to contain at least 7.5 [percent] beta-carotene by weight." Id. ¶ 7. As such, Betatene "has been produced as a free-flowing red powder of individual, micron-sized beadlets containing beta-carotene particles," and "[e]ach beadlet consists of millions of droplets of beta-carotene dissolved in the soybean oil." Pl.'s SUMF ¶¶ 42, 44. Betatene is formulated and marketed by Plaintiff for use as a provitamin A source in vitamin and dietary supplement tablets and hard capsules. Id. ¶ 47.

JURISDICTION & STANDARD OF REVIEW

The court has jurisdiction over this action. 28 U.S.C. § 1581(a) ("The Court of International Trade shall have exclusive jurisdiction of any civil action commenced to contest the denial of a protest, in whole or in part, under section 515 of the Tariff Act of 1930.").

Summary judgment is appropriate where "the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." CIT R. 56(a); Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247 (1986). Specifically, "[i]n a tariff classification dispute, summary judgment is appropriate only when 'there is no genuine dispute as to the nature of the merchandise and the

classification determination turns on the proper meaning and scope of the relevant tariff provisions.'" Second Nature Designs Ltd. v. United States, 660 F. Supp. 3d 1352, 1373 (CIT 2023) (quoting Deckers Outdoor Corp. v. United States, 714 F.3d 1363, 1371 (Fed. Cir. 2013)); Tyco Fire Prods. L.P. v. United States, 918 F. Supp. 2d 1334, 1339 (CIT 2013) (quoting Bausch & Lomb, Inc. v. United States, 148 F.3d 1363, 1365 (Fed. Cir. 1998)) ("Where tariff classification is at issue, 'summary judgment is appropriate when there is no genuine dispute as to the underlying factual issue of exactly what the merchandise is.'").

Faced with cross motions for summary judgment, the court will "evaluate each party's motion on its own merits, taking care in each instance to draw all reasonable inferences against the party whose motion is under consideration." Second Nature Designs, 660 F. Supp. 3d at 1381 (quoting Mingus Constructors, Inc. v. United States, 812 F.2d 1387, 1391 (Fed. Cir. 1987)); see also Plexus Corp. v. United States, 489 F. Supp. 3d 1379, 1388 (CIT 2020) (quoting Am. Fiber & Finishing, Inc. v. United States, 121 F. Supp. 3d 1273, 1279 (CIT 2015) ("[E]ach party carries the burden on its own motion to show entitlement to judgment as a matter of law after demonstrating the absence of any genuine disputes over material facts.").

I. Judicial Review in Tariff Classification Cases

The court must "reach a correct result" in a tariff classification dispute. Jarvis Clark Co. v. United States, 733 F.2d 873, 878 (Fed. Cir. 1984). The court "must consider whether the government's classification is correct, both independently and in comparison with the importer's alternative." Id. The plaintiff bears the burden of establishing that Customs' classification of the imported merchandise was incorrect:

> Specifically, the importer must produce evidence (the burden of production portion of the burden of proof) that demonstrates by a preponderance (the burden of persuasion portion of the burden of proof) that Customs' classification decision is incorrect. The presumption of correctness certainly carries force on any factual components of a classification decision, such as whether the subject imports fall within the scope of the tariff provision, because facts must be proven via evidence.

Universal Elecs., Inc. v. United States, 112 F.3d 488, 492 (Fed. Cir. 1997) (emphases in original); see also Jarvis Clark, 733 F.2d at 878.

Once the plaintiff has met its burden, the court undertakes a two-step process to ascertain the correct result. Faus Group, Inc. v. United States, 581 F.3d 1369, 1371 (Fed. Cir. 2009). As the United States Court of Appeals for the Federal Circuit recently explained:

> Tariff classification under the HTSUS is a two-step process: first, the proper meanings of the terms of the tariff provisions are ascertained, and second, whether the subject merchandise comes within the description of those terms is determined. The proper meaning of the tariff provisions is a question of law, and the determination of whether the subject imports properly fall within the scope of the possible headings is a question of fact….

Nature's Touch Frozen Foods (W) Inc., v. United States, No. 2023-2093, 2025 WL 1354992, at *2 (Fed. Cir. May 9, 2025) (citation omitted); Well Luck Co. v. United States, 887 F.3d 1106, 1110 (Fed. Cir. 2018).

Where "there is no factual dispute regarding the merchandise, its structure and use, the resolution of the classification issue turns on the first step, determining the proper meaning and scope of the relevant tariff provisions." Faus Group, 581 F.3d at 1372. The General Rules of Interpretation ("GRIs") "govern the classification of goods within the HTSUS." Well Luck Co., 887 F.3d at 1111. In order "[t]o determine the meaning of an HTSUS provision, the court applies the GRIs in numerical order, beginning with GRI 1 and reaching subsequent GRIs if analysis under the preceding

GRI does not yield proper classification of the subject merchandise." Amcor Flexibles Kreuzlingen AG v. United States, 560 F. Supp. 3d 1326, 1330 (CIT 2022). Under GRI 1, "classification shall be determined according to the terms of the headings and any relative section or chapter notes." GRI 1; see also Orlando Food Corp. v. United States, 140 F.3d 1437, 1440 (Fed. Cir. 1998).

HTSUS terms "shall be considered to be statutory provisions of law for all purposes." Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, § 1204(c)(1), 102 Stat. 1107, 1149; Libas, Ltd. v. United States, 193 F.3d 1361, 1364 (Fed. Cir. 1999) ("[The] HTSUS is indeed a statute but is not published physically in the United States Code."). When "a tariff term is not defined in either the HTSUS or its legislative history, the term's correct meaning is its common or dictionary meaning in the absence of evidence to the contrary." Russell Stadelman & Co. v. United States, 242 F.3d 1044, 1048 (Fed. Cir. 2001); see also Carl Zeiss, Inc. v. United States, 195 F.3d 1375, 1379 (Fed. Cir. 1999) ("Absent contrary legislative intent, HTSUS terms are to be construed according to their common and commercial meanings, which are presumed to be the same."). The court may interpret the terms of a tariff provision by "rely[ing] upon its own understanding of the terms used and may consult lexicographic and scientific authorities, dictionaries, and other reliable information sources." Carl Zeiss, Inc., 195 F.3d at 1379. The court may also consult Explanatory Notes ("ENs") published by the World Customs Organization ("WCO") "[f]or additional guidance on the scope and meaning of tariff headings and chapter and section notes." DIS Vintage LLC v. United States, 456 F. Supp. 3d 1323, 1329 (CIT 2020). ENs are "not binding law," but

they are "generally indicative of the proper interpretation of a tariff provision." Id. (quoting Agfa Corp. v. United States, 520 F.3d 1326, 1329 (Fed. Cir. 2008)).

DISCUSSION

I. The Imported Merchandise Is Not Properly Classified Under Heading 2936

It is undisputed that the imported merchandise are individually microencapsulated beadlets consisting of beta-carotene, soybean oil, gelatin, sucrose, ascorbyl palmitate, tocopherols, and silicon dioxide. Pl.'s Mot. at 1–2; see also Pl.'s SUMF ¶ 7. Such merchandise is one in a range of beta-carotene products produced by Plaintiff and other manufacturers. BASF Slide Deck at 11–14, ECF No. 74-6; ECF No. 69-5 at 3–5. While beta-carotene products may vary in the amount of each component ingredient and its production process, they are all generally used as colorants and sources of provitamin A in food or dietary supplements. Pl.'s Mot. at 6; Def.'s Cross Mot. at 1; see also Pl.'s SUMF ¶¶ 9, 11, 18–19; ECF No. 69-6 at 2.

Customs classified the imported merchandise under subheading 2106.90.99, dutiable at 6.4 percent, ad valorem. Customs' classified heading is:

2106 (HTSUS 2011 and 2012)

Food preparations not elsewhere specified or included:

2106.90 Other:

2106.90.99 Other.

Def.'s Cross Mot. at 26.

Plaintiff contends that the imported merchandise is instead classifiable under subheading 2936.90.01, which is duty free:

2936 (HTSUS 2011 and 2012)

> Provitamins and vitamins, natural or reproduced by synthesis (including natural concentrates), derivatives thereof used primarily as vitamins, and intermixtures of the foregoing, whether or not in any solvent:
>
> **2936.90.01** Other, including provitamins and natural concentrates.

Pl.'s Mot. at 3–4.

GRI 1 requires that classification be determined in the first instance "according to the terms of the headings and any relative section or chapter notes." For a beta-carotene product to be classifiable under heading 2106, it must "not [be] elsewhere specified or included." Because Plaintiff bears the burden of establishing that Customs' classification of the imported merchandise is incorrect, the court must determine whether Plaintiff has met its burden of showing that the merchandise is classifiable under chapter 29. See Universal Elecs., 112 F.3d at 492; see also Jarvis Clark, 733 F.2d at 876.

Faced with a tariff classification dispute as a matter of law, the court must determine the proper meaning of the tariff provisions' terms, as well as whether the imported merchandise properly falls within the scope of the tariff provision. Well Luck Co., 887 F.3d at 1110. Where, as here, there is no dispute as to the meaning of the terms of heading 2936 and the nature of Betatene, the question before the court is whether Betatene falls within the scope of heading 2936. See Second Nature Designs, 660 F. Supp. 3d at 1373.

This court and the Federal Circuit have previously examined the proper classification of a beta-carotene product under headings 2106, 2936, and 3204. See Roche Vitamins, Inc. v. United States ("Roche I"), 750 F. Supp. 2d 1367 (CIT 2010); Roche Vitamins, Inc. v. United States ("Roche II"), 922 F. Supp. 2d 1353 (CIT 2013);

Roche Vitamins, Inc. v. United States ("Roche III"), 772 F.3d 728 (Fed. Cir. 2014). Specifically, in Roche III, the Federal Circuit reviewed the classification of "BetaTab," another provitamin A product made using beta-carotene and other ingredients. 772 F.3d 728. Beta-carotene comprises twenty percent of BetaTab, with the remainder consisting of "antioxidants, gelatin, sucrose, and corn starch." Id. at 729. The beta-carotene in BetaTab "is an organic colorant with provitamin A activity," and BetaTab "can be used as a source of Vitamin A in foods, beverages, and vitamin products." Id.

The Federal Circuit found that BetaTab was properly classified as a provitamin under heading 2936 because the product "fulfills the description in the statutory heading [of heading 2936] and satisfies the limitations of both Note 1 to Chapter 29 and Explanatory Note 29.36." Roche III, 772 F.3d at 732.[1] In relevant part, note 1 to chapter 29 provides that "[e]xcept where the context otherwise requires, the headings of this Chapter apply only to: … (f) [t]he products mentioned in (a), (b), (c), (d) or (e) above with an added stabilizer (including an anticaking agent) necessary for their preservation or transport." HTSUS Ch. 29, n.1 (2012).

Explanatory notes are not legally binding, but "may be consulted for guidance and are generally indicative of the proper interpretation of a tariff provision." Roche III, 772 F.3d at 731 (citing Motorola, Inc. v. United States, 436 F.3d 1357, 1361 (Fed. Cir. 2006)). In Roche III, the Federal Circuit found that "[t]he Explanatory Notes for HTSUS Chapter 29 provide further insight as to the proper classification of merchandise under

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[1] Although the Federal Circuit's ruling relied on the 2002 editions of the HTSUS and explanatory notes, the implicated headings and explanatory notes are substantively the same in relevant part to the 2011 and 2012 editions, which are the bases of this proceeding.

heading 2936." Id. (citing EN 29.36 (3d ed. 2002)). Specifically, the Federal Circuit examined the limitations provided for in EN 29.36:

> Explanatory Note 29.36 expands on Note 1(f) to Chapter 29 and permits the addition of stabilizer ingredients if the addition or processing does not (1) alter the character of the basic product and (2) render it particularly suitable for specific use rather than for general use.

Id. at 732.

The Federal Circuit went on to examine the characteristics of BetaTab under these two limitations, finding that: (1) the ingredients and plaintiff's "manufacturing process does not change BetaTab's functionality as provitamin A or change the character of the beta-carotene as provitamin A"; and (2) the addition of stabilizer ingredients did not render the basic product, beta-carotene, particularly suitable for specific use rather than for general use. Id.

In making its conclusion, the Federal Circuit expressly noted that "[a]lthough the high concentration and high bioavailability of beta-carotene in BetaTab make it preferable for use for the manufacture of tablets, no evidence supports the assertion that the added stabilizers make BetaTab particularly suitable for tableting." Id. at 732–733 (emphases added).

The Federal Circuit's analysis in Roche III is instructive. Betatene, like BetaTab, is a beta-carotene product containing gelatin and sucrose. ECF No. 69-6 at 2. Both products "must first be combined with other ingredients" to be used as provitamin A. Roche III, 772 F.3d at 729; see also Pl.'s SUMF ¶¶ 18–19. As such, the proper classification of Betatene turns on whether it satisfies the limitations of note 1(f) to chapter 29 and EN 29.36, i.e., to be classifiable as a provitamin under heading 2936:

1. Betatene must not have more stabilizers than necessary for preservation or transport;
2. The addition of stabilizer ingredients and the manufacturing process must not alter the character of Betatene as a beta-carotene product; and
3. The addition of stabilizer ingredients and the manufacturing process must not render Betatene particularly suitable for specific use rather than for general use.

See id. at 731. The court considers each limitation in turn.

A. The stabilizing ingredients in Betatene are not in quantities greater than necessary for preservation or transport.

The first issue is whether the stabilizing ingredients in Betatene are in quantities greater than necessary for preservation or transport. The Federal Circuit has explained that "Note 1(f) to Chapter 29 permits the addition of stabilizer ingredients to BetaTab, as long as the amount of stabilizer added is not more than necessary for preservation or transport." Roche III, 772 F.3d at 732.

Both parties agree that stabilization is necessary for a beta-carotene product to be commercially viable, regardless of the amount of beta-carotene in the formulation. Pl.'s SUMF ¶¶ 16–18; Def.'s Resp. to Pl.'s SUMF ¶¶ 16–18. As to Betatene, Plaintiff argues that "the ingredients that make up the stabilizing matrix were determined empirically to be only that amount necessary to stabilize the beta-carotene for preservation or transport." Pl.'s Resp. in Opp. to Def.'s Cross Mot. for Summ. J. and Reply in Supp. of its Mot. for Summ. J. at 31, ECF No. 78. Defendant argues that "the quantity of [stabilizing ingredients] added to Betatene cannot be 'necessary' for

'preservation or transport' because beta-carotene is preservable and transportable with less." Def.'s Reply in Supp. of its Cross Mot. for Summ. J. ("Def.'s Reply") at 9, ECF No. 79.

Evidence provided by Plaintiff's experts establishes that Betatene is formulated using the minimum quantity of stabilizing ingredients necessary for preservation or transport. Plaintiff's expert, Dr. Marc Meyers, explained that "when formulating [Betatene], [Plaintiff] has cost considerations and uses no more [inert ingredients] than [ ] necessary to make a stable formulation." Expert Rep. of Dr. Marc Meyers ("Meyers Exp. Rep.") at 11, ECF No. 71-11; see also Dep. of Dr. Christian Köpsel ("Köpsel Dep.") at 105:12–17, ECF No. 74-3.

Defendant provides no evidence to refute Plaintiff's evidence. Instead, Defendant compares Betatene to other beta-carotene products with varying quantities of stabilizing ingredients, including the one at issue in Roche III. Def.'s Cross Mot. at 17–18. Defendant argues that "[i]t cannot be the case … that formulations ranging from 1 to 7.5 to 10 to 20 to 30 percent beta-carotene by weight all contain no more additives than necessary for beta-carotene's stabilization." Id. at 18.

Such speculation is insufficient to establish that the stabilizing ingredients added to Betatene exist in quantities greater than necessary for stabilization or transport. As such, the court finds that the quantities of stabilizing ingredients added to Betatene satisfy the limitations explained in note 1(f) to chapter 29. See Roche III, 772 F.3d at 732.

B. The addition of stabilizer ingredients and Betatene's manufacturing process do not alter the character or functionality of Betatene as provitamin A.

The Federal Circuit in Roche III considered whether BetaTab was changed in character or functionality as provitamin A. Id. Here, Plaintiff argues that "the stabilizing ingredients in Betatene do not alter the character of the beta-carotene," and that "Betatene's formulation does not chemically modify, physically change or otherwise alter the beta-carotene particles or their inherent ability to be provitamin or to color." Pl.'s Mot. at 60. Defendant argues instead that "the test is whether the additives give the formulation different characteristics that render the product 'particularly suitable for specific use rather than for general use.'" Def.'s Reply at 4–5 (quoting Roche III, 772 F.3d at 732).

In Roche III, the Federal Circuit held that EN 29.36 "expands on Note 1(f) to Chapter 29 and permits the addition of stabilizer ingredients if the addition or processing does not … alter the character of the basic product." 772 F.3d at 732; see also EN 29.36. In making its determination, the Federal Circuit explained that:

> The government's expert testified, and the Court of International Trade found, that [the plaintiff's] manufacturing process does not change BetaTab's functionality as provitamin A or change the character of the beta-carotene as provitamin A.

Roche III, 772 F.3d at 732.

Here, the parties agree that "[n]othing in [Betatene's] formulation changes the beta-carotene's inherent character as a source of provitamin A." Pl.'s SUMF ¶ 46; Def.'s Resp. to Pl.'s SUMF ¶ 46. This is further supported by the record evidence and testimony of the parties' experts. Defendant's expert, Dr. Stuart Cantor, explained that

the beta-carotene in Betatene "was not chemically modified" and "will remain a source of vitamin A." Dep. of Dr. Stuart Cantor ("Cantor Dep.") at 135:15–22, ECF No. 74-11. Dr. Meyers, Plaintiff's expert, explained that "no physical or chemical changes [ ] are occurring to the beta-carotene." Dep. of Dr. Marc Meyers ("Meyers Dep.") at 111:21–112:12, ECF No. 75-8. Plaintiff's expert, Dr. Christian Köpsel, further explained that Betatene "will function as a provitamin A source." Köpsel Dep. at 103:10–16.

The addition of stabilizer ingredients and Betatene's manufacturing process satisfy the first limitation of EN 29.36 and do not alter the character of the beta-carotene or Betatene's ability to function as provitamin A.

C. Betatene is particularly suitable for tableting.

The next issue is whether the addition of stabilizer ingredients and the manufacturing process render Betatene particularly suitable for specific use rather than for general use. Plaintiff argues that "the composition of Betatene … does not specifically prepare it for tableting." Pl.'s Mot. at 47. Defendant argues that Betatene's processing makes it "particularly suitable for use in dietary supplements." Def.'s Cross Mot. at 19.

The Federal Circuit explained that "Explanatory Note 29.36 expands on Note 1(f) to Chapter 29 and permits the addition of stabilizer ingredients if the addition or processing does not … render it particularly suitable for specific use rather than for general use."[2] Roche III, 772 F.3d at 732. Addressing BetaTab's suitability for tableting, the Federal Circuit found that:

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[2] The Federal Circuit found that the court relied on an "overly-narrow interpretation" of EN 29.36 in concluding that "[a]dded ingredients that make a chemical highly capable of a use that is not an ordinary use of chemicals of the heading … will render the item

> Expert testimony established that the sucrose and gelatin additives function as stabilizers and do not "specifically prepare [BetaTab] for tableting." In addition, the record demonstrates that BetaTab has no ingredients added specifically for tableting, such as tableting excipients. The stabilizers used in BetaTab were essentially the same as those used to stabilize other vitamins and other beta-carotene products that were marketed for use as colorants. Although the high concentration and high bioavailability of beta-carotene in BetaTab make it preferable for use for the manufacture of tablets, no evidence supports the assertion that the added stabilizers make BetaTab particularly suitable for tableting. As a result, the Court of International Trade did not clearly err in finding that the addition of stabilizer ingredients did not render BetaTab particularly suitable for the specific use of tableting.

Id. at 732–33 (citations omitted) (emphasis added). The court must therefore determine whether Betatene's additives or processing "specifically prepare" it for tableting and render it "particularly suitable" for a specific use. See id.

Based on the record, the process of "microencapsulation" for Betatene makes it particularly suitable for tableting in a manner which is distinguishable from the product in Roche III, BetaTab. Betatene is formulated from a 30 percent beta-carotene and 70 percent soybean oil dispersion, which "is shipped from Australia to Japan to be microencapsulated." Def.'s SUMF ¶¶ 3, 6; Pl.'s SUMF ¶¶ 26, 30.[3] During the microencapsulation process, Betatene is "enrobed in a protective matrix of gelatin and sucrose," which "embeds the oily beta-carotene and antioxidant droplets" and "combine[s] [them] into solid beadlets." Pl.'s SUMF ¶¶ 7, 35, 36. Gelatin and sucrose

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'particularly suitable for specific use rather than for general use.'" Roche III, 772 F.2d at 733 (emphasis omitted) (quoting Roche II, 922 F. Supp. 2d at 1359).

[3] The product of a 30 percent beta-carotene and 70 percent soybean oil dispersion mix is not specifically suitable for tableting and is instead marketed as a colorant. See Def.'s SUMF ¶ 5 ("[Plaintiff] markets '30% Natural Beta-Carotene in soybean oil' as a colorant for food products.").

"function[ ] together to plasticize[ ] the matrix." Id. ¶ 37.

Plaintiff's expert, Dr. Meyers, testified that microencapsulation "costs money[,] so you are not going to want to just do it." Meyers Dep. at 62:2–5. A formulator will instead "want to do [microencapsulation] for a purpose." Id. at 63:2–4. Dr. Köpsel testified that "[t]ablet formulation[s] … are designed for having a high stability and they can be applied in tablets." Köpsel Dep. at 30:2–5. Dr. Meyers further testified that the main purpose for microencapsulation is mechanical strength for direct compression or tableting. See Meyers Dep. at 72:22–73:8. To this point, the parties agree that Betatene's microencapsulation "provides [the] desired flexibility and durability in tablet compression for end-use applications." Def.'s SUMF ¶ 25.

Defendant's expert, Dr. Cantor, explained in his expert report that Betatene "was designed specifically to survive the shear forces encountered during direct compression tableting, and is intended to be used specifically for that application." Expert Rep. of Dr. Stuart Cantor ("Cantor Exp. Rep.") at 7, ECF No. 75-10. Dr. Cantor explained that Betatene's "plasticized gelatin shell … helps protect the solubilized oil-based carotenoids inside from leaking out during the high shear-force direct-compression tableting process." Id. at 8.

Plaintiff's expert, Dr. Meyer similarly explained in his expert report that Betatene's "formulation has been optimized … for use in dietary supplements … because it provides mechanical stability to the beadlet during direct compression tablet manufacturing." Meyers Exp. Rep. at 11. Plaintiff's expert Dr. Köpsel explained that Betatene has a "particular kind of beadlet," which is "specifically going to be used to make a tablet or a hard capsule or something along those lines." Köpsel Dep. at

57:16–22. Evidence on the record demonstrates that Betatene's microencapsulation specifically provides the mechanical strength necessary for Betatene to be used in tablets.

Further, Betatene is marketed and optimized for tablets. Plaintiff does not dispute that Betatene is "formulated and marketed … for use as a provitamin A in vitamin and dietary supplement tablets and hard capsules." Pl.'s SUMF ¶ 47. Plaintiff's expert, Dr. Köpsel, testified that "the main purpose [of Betatene] is tableting indications." Köpsel Dep. at 57:3–4. Plaintiff's own marketing materials state that Betatene is used as a "[d]irect compressible," with "[e]xcellent stability in tablets." BASF Slide Deck at 12–13, ECF No. 74-6. Plaintiff's product datasheet further states that Betatene's "high concentration powder withstands the pressure of compression while retaining carotenoid stability." Betatene Product Datasheet at 3, ECF No. 75-7.

The record demonstrates that the processing and ingredients incorporated into Betatene, particularly the process of microencapsulation, renders Betatene particularly suitable for the specific use of tableting.

D. Betatene is not suitable for general use.

The final issue is whether Betatene remains suitable for general use. The Federal Circuit in Roche III found that BetaTab was "suitable for general use" because it could "be used as a source of vitamin A in foods, beverages, and vitamin products." 772 F.3d at 732–33; see also W.R. Filbin & Co. v. United States, 744 F. Supp. 289, 291 (CIT 1990), aff'd, 945 F.2d 390 (Fed. Cir. 1991) (citation omitted) ("'Suitable for use' as applied in the Customs law means 'actually, practically, and commercially fit' for such use."). In making its determination in Roche III, the Federal Circuit relied on the record

and "[e]xpert testimony [that] established that BetaTab is 'well-suited for fortifying foods with provitamin A.'" 772 F.3d at 732–33.

Plaintiff argues that "Betatene is a general use source of provitamin A because it can be used in a variety of applications if the user so desired." Pl.'s Mot. at 50. Defendant argues that "the undisputed record evidence shows that Betatene is not suitable for general use" because "[t]he same 'rigid gelatin shell' that renders Betatene particularly suitable for use in dietary supplements renders it 'not suitable to be used' for beta-carotene's remaining commercial uses." Def.'s Cross Mot. at 20.

Here, record evidence establishes that Betatene is not suitable for general use after microencapsulation. Betatene's suitability for uses other than tableting requires it to be de-formulated from its microencapsulated beadlet, which is not commercially or functionally viable. See Cantor Dep. at 115:15–116:10 (explaining that "[i]t wouldn't make any sense to encapsulate a product … and add that" into food because "you're going to bite into it" and this will cause the beadlet to rupture, leaking the oil inside and leaving a "funny taste" for consumers)[4]; Meyers Dep. at 62:4, 89:14–17, 104:6–8 (explaining that "microencapsulation is expensive," and "[a]s soon as you crack [the beadlet] you have lost the benefit of why you are forming a beadlet").[5] As such,

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[4] Dr. Cantor also explained that "it wouldn't make sense" to use Betatene as a colorant "[b]ecause if the company goes to the extent to put the costs in to encapsulate it, why would they add it to hot water to get a colorant when you could just use an oil dispersion? …. That's extra cost, that's extra personnel to do that." Cantor Dep. at 79:23–80:6, 126:23–24.

[5] In contrast, Plaintiff's 30 percent beta-carotene and soybean oil formulation, which is Betatene prior to microencapsulation in Japan, is marketed for use as a colorant for food products. Def.'s SUMF ¶ 5.

Betatene is not suitable for general use and it fails to satisfy the second limitation of EN 29.36. See Roche III, 772 F.3d at 732–33.

II. The Imported Merchandise Is Properly Classified Under Heading 2106

Plaintiff has not satisfied its burden of demonstrating that Betatene is classifiable under heading 2936. As part of its duty to reach the correct result, however, the court continues its analysis.[6] See Jarvis Clark, 733 F.2d at 878. Specifically, the court turns to whether Betatene is classifiable under heading 2106.

Heading 2106 covers "[f]ood preparations not elsewhere specified or included." To "fall under [this] heading … two criteria must be met: the product[ ] must be (1) a food preparation, which is (2) not elsewhere specified or included." Roche II, 922 F. Supp. 2d at 1357 (alterations in original) (quoting R.T. Foods, Inc. v. United States, 887 F. Supp. 2d 1351, 1358 (CIT 2012)). Here, the first criterion is satisfied. Betatene is "food" because there is no dispute that it is a "substance that is intended to be ingested," and it is a "preparation" because, as discussed above, evidence on the record demonstrates that Betatene is "a substance specifically prepared, or made up for its appropriate use or application." Mondelez Glob. LLC v. United States, 253 F. Supp. 3d 1329, 1332 (CIT 2017) (explaining that "food preparation" is "simply an attributive noun" because "the word 'food' simply specifies what type of 'preparation' is covered by heading 2106"); see also Pl.'s SUMF ¶¶ 7, 9–10, 14, 32. The second criterion is

[6] Plaintiff does not address the scope of heading 2106, arguing instead that Betatene is "elsewhere specified or included" under heading 2936. Pl.'s Mot. at 20.

satisfied because Betatene is not "elsewhere specified or included."[7] Roche II, 922 F. Supp. 2d at 1357. Therefore, the court concludes that Customs' classification of Betatene under heading 2106 was correct.

CONCLUSION

For the foregoing reasons, Plaintiff's motion for summary judgment is **DENIED** and Defendant's cross motion for summary judgment is **GRANTED**. Judgment shall be entered accordingly.

/s/ Lisa W. Wang
Lisa W. Wang, Judge

Dated: August 13, 2025
New York, New York

[7] The court concludes that no other heading classification is appropriate after independently considering other classifications. See Jarvis Clark, 733 F.2d at 878; Trijicon, 686 F. Supp. 3d at 1342 n.4.